1st April, 2024

1. India's Infrastructure Boost along China Border

GS 2 (International Relations)

Army is cranking up efforts to boost infrastructure, connectivity along LAC in Arunachal

SPOTLIGHT

Dinakar Peri

Deroo Meyor, 40, and Kunchok Dolma Meyor, 29, are residents of Kibithoo, one of the easternmost villages in Anjaw district of Arunachal Pradesh. Inhabited by the Meyor tribe, it is located about 74 km from the Line of Actual Control (LAC), the contested line that separates India and China. Their husbands work as porters with the Indian Army, like many men here. Deroo has two children, a 13-year-old daughter and a four year-old son. Her daughter is in a hostel in Hayuliang, about 155 km away, as Kibithoo's school runs only until Class 8 and English-medium education is limited in the area.

"We want better education (closer home), and in English," says Deroo. The State-run hostel costs ₹60,000-70,000 a year and making the monthly trip to see her daughter is expensive.

Over the past year, the village of about 150 residents has witnessed its Primary Health Centre and residences of the school teachers being upgraded, and concrete tracks being laid under the Central government's Vibrant Villages Programme (VVP).

Nijum Marwa, 32, who came to Kibithoo three years ago as a contractual government teacher, says now, there are four teachers, and the school is being renovated, with a new hostel in court as well.

Army's demarcation

For administrative purposes, the Army classifies Arunachal as Kameng, derived from the name of the river that flows through the State. Tawang district is part of the Kameng area, while the remaining part of the State is considered separate and was earlier referred to as the Rest of Arunachal Pradesh (RALP).

Of the 3,488-km-long LAC, 1,346 km falls in the eastern sector, comprising Sikkim and Arunachal. While the Tawang and Kameng areas are under the Army's IV Corps, headquartered at Tezpur, RALP is under the III Corps, which is based at Dimapur. Kameng and Tawang have seen development in the last 10-15 years, with the remaining areas only now catching up with the kind of infrastructure that China possesses.

The VVP was approved as a Centrally-sponsored scheme on February 15, 2023, with an outlay of ₹4,800 crore for the financial years 2022-23 to 2025-26 for the development of 2,967 villages in the border States of Arunachal Pradesh, Himachal Pradesh, Sikkim, Uttarakhand, and the Union Territory of Ladakh.

Union Home Minister Amit Shah formally launched the VVP in Kibithoo on April 10, 2023. He also inaugurated nine micro hydel projects of the State government and 44 infrastructure projects for the Indo-Tibetan Border Police (ITBP). "Captured the beautiful landscapes during my visit to Kibithoo, India's first village. Arunachal Pradesh is blessed with immense natural beauty. I urge all to visit Arunachal Pradesh, especially Kibithoo, to be inspired by its history and stunned by nature's marvels," the Union Minister said in a post on social media platform X (formerly Twitter), after his visit, along with a video of the mountainous landscape.

Just a few metres from where Deroo and Kunchok live, is Kibithu Bakery, staffed with four 20 to 27-year-old women, who draw a monthly salary of ₹7,500.

It was established in 2022 by the Army with the help of the Pune-based Aseem Foundation, through funds under Operation Sadbhavna, a social welfare scheme spanning the areas of environment, education, and skilling.

Breaking bread

The bakery sells sanchkuti (a type of shortbread), coconut and butter cookies, and cake. With tourism trickling in, the Army has lined up a renovation plan that will see new decor, lighting, and seating, estimated to cost between ₹30 lakh and ₹38 lakh. Once there is decent mobile connectivity – expected in the next few months – UPI payments will also be made available, improving ease of payments, officials say.

Civil-military coordination is a prerequisite for the programme in border areas, says Lt. Col. R.S. Manhas, from a unit of the Punjab Regiment deployed in the area. "Our works through Operation Sadbhavna function as a feeder to the VVP," he says. The Army has allocated ₹18 crore under Operation Sadbhavna for development projects and outreach activities in the forward areas in III Corps area for 2022-23.

The topography of Arunachal is like a wheel, the flat plateau as the hub with mountains and valleys jutting outwards like spokes. It means for travel between valleys, one must come back to the plains.

Work on the 2,400-km trans-Arunachal highway, which goes along the length of the border, is about 52% complete and the rest is expected to be completed this year, another official says.

The new, almost 1,800-km-long frontier highway, on which work has commenced, will fill a critical void facilitating inter-valley movement. It will start from Bomdila in Arunachal's west, pass through Naliya, Huri and Mechigaon villages, and end in Vijaynagar, near the Indo-Myanmar border. The roads cut through eastern Arunachal's thick forests.

Another infrastructure input is the connectivity across the Lohit river, which, for India, starts from Kibithoo and flows to Tezu, and then joins the Brahmaputra in Assam, a distance of almost 350 km, dividing the stretch into east and west banks. Three key bridges across the river, to be ready by next year, can handle 80 tonnes of load.

The Army's artillery guns – M777 Ultra Light Howitzers and 105mm Indian Field Guns – are deployed close to the LAC. The M777s, with a range of over 30 km, weigh just four tonnes and can be airlifted underslung on Chinooks, giving significant manoeuvrability in terms of long-range firepower between the valleys. Over the last few years, a range of new-generation equipment ranging from SIG716i rifles, Negev light machine guns, Sako TRG-42 sniper rifles, tactical drones, sensors and other weapons and equipment have been inducted here.

Reaching out

Another aspect witnessing tremendous change is mobile connectivity. The Universal Service Obligation Fund (USOF) was established with the fundamental objective of providing access to "basic telegraph services" to people in remote and rural areas at affordable and reasonable prices.

In the past, mobile phones at Kibithoo would only connect to Chinese networks. Locals would tell the few tourists here to put their phones on flight mode to avoid international roaming charges. However, now phones pick up both Indian and Chinese networks. Officials explain that while towers have been set up, optical fibre networking is in progress.

As connectivity improves, efforts are on to promote tourism. Under the Seema Darshan project, the State government, with support from the Army, has approved 13 tourist circuits, including two foreign tourist ones, beyond the Kameng area. Religious tourism to Sangeng La, Pasang Sonam Tso Lake, and Taksang Gompa is also being showcased and promoted, an official says, adding that passes for trekking are also being facilitated.

LINK TO FULL STORY

- **Why in News:** India is ramping up efforts to enhance infrastructure and connectivity along the LAC with China, extending beyond the Kameng region. While **Kameng and Tawang** have witnessed development over the past decade, other areas are now catching up to match China's infrastructure standards along the LAC.
- **Need for infrastructure development in India's North-East**
  - The need for infrastructure development in India's North-East is paramount to enhance **connectivity, promote economic growth, and address regional disparities.**
  - Improved infrastructure can facilitate smoother **movement of goods and people, boost tourism, and unlock the region's vast potential for development.**
- **The rate of development**
  - **Highway:** Work on the 2,400-km trans-Arunachal highway is expected to be completed this year.
    - The new, almost 1,800-km-long frontier highway, on which work has commenced, will fill a critical void facilitating inter-valley movement. It will start from Bomdila in Arunachal's west and end in Vijaynagar, near the Indo-Myanmar border.
    - Another 3,000 km of road infrastructure is also under planning and construction in the State.
  - **Operational tracks**: A number of operational tracks are being built by the Army to ensure last-mile connectivity in the forward areas, and in addition, a large number of projects have been sanctioned under the **Prime Minister Gati Shakti project** for infrastructure development.
  - **Bridges:** A total of 34 new bridges have been constructed between 2020 and 2023.
  - **Connectivity across river:** Another infrastructure development is the connectivity across the Lohit river, which, for India, starts from Kibithoo and flows to Tezu, and then joins the Brahmaputra in Assam, a distance of almost 350 km, dividing the stretch into east and west banks.
  - **From 2G to 4G:** The Universal Service Obligation Fund (USOF) was established to provide access to "basic telegraph services" to people in remote and rural areas at affordable and reasonable prices.
- **Vibrant village program and its significance**
  - The VVP was approved as a Centrally-sponsored scheme in 2023 (in **Kibithoo)** for the development of 2,967 villages in 46 blocks across 19 districts in the border States of **Arunachal Pradesh, Himachal Pradesh, Sikkim, Uttarakhand,** and the Union Territory of
  - The objective is comprehensive development of these villages to improve the **quality of life of people,** thereby **reversing outmigration**.
  - The VVP is an effort to counter **China's model villages — called Xiaokang** and located very close to the LAC opposite Uttarakhand, Sikkim, and Arunachal Pradesh — which have raised apprehensions in the security establishment.
- **LAC's Division**
  - The Indian Military has divided the Line of Actual Control into 3 sectors –
    - **Western sector** across Ladakh and the Chinese-held Aksai Chin
    - **Central sector** across Himachal Pradesh and Uttarakhand
    - **Eastern sector** across Sikkim and Arunachal Pradesh
- **The Army's demarcation of Arunachal Pradesh**
  - For administrative purposes, the Army classifies Arunachal as **Kameng,** derived from the name of the river that flows through the State.
  - Tawang district is part of the Kameng area, while the remaining part of the State is considered separate and was earlier referred to as the **Rest of Arunachal Pradesh (RALP).**

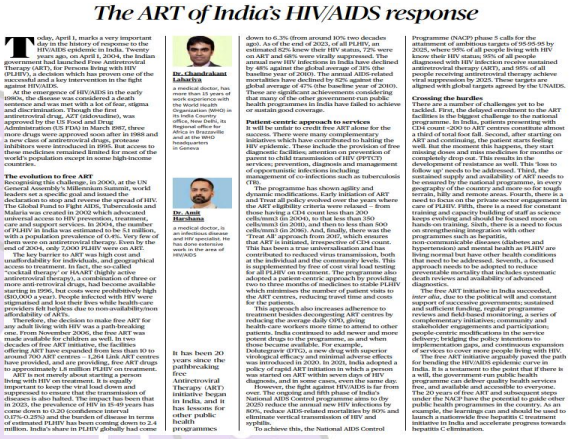
- Of the 3,488-km-long Line of Actual Control (LAC), 1,346 km falls in the eastern sector, comprising **Sikkim and Arunachal.**
- While the Tawang and Kameng areas are under the Army's IV Corps (Tezpur)
- RALP is under the III Corps (Dimapur).

- **Kibithoo**
  - Kibithoo is one of the easternmost villages in Anjaw district of Arunachal Pradesh.
  - Inhabited by people of the **Meyor tribe**, it is located about 7-8 km from the **Line of Actual Control (LAC),** the contested line that separates India and China.

2. The ART of India's HIV/AIDS response

GS 2 (Health)

- **Why in News:** India commemorates the 20th anniversary of the launch of Free Antiretroviral Therapy (ART) for Persons living with HIV (PLHIV) on April 1, 2004.


The ART of India's HIV/AIDS response

Today, April 1, marks a very important day in the history of response to the HIV/AIDS epidemic in India. Twenty years ago, on April 1, 2004, the Indian government had launched Free Antiretroviral Therapy (ART), for Persons living with HIV (PLHIV), a decision which has proven one of the successful and a key intervention in the fight against HIV/AIDS.

At the emergence of HIV/AIDS in the early 1980s, the disease was considered a death sentence and was met with a lot of fear, stigma and discrimination. Though the first antiretroviral drug, AZT (zidovudine), was approved by the US Food and Drug Administration (US Food and Drug Administration) in 1987, three more drugs were approved soon after in 1988 and a new class of antiretroviral drugs, protease inhibitors were introduced in 1995. But access to these medicines remained limited for most of the world's population except in some high-income countries.

The evolution to free ART

Recognising this challenge, in 2000, at the UN General Assembly's Millennium Summit, world leaders set a specific goal and issued the declaration to stop and reverse the spread of HIV. The Global Fund to Fight AIDS, Tuberculosis and Malaria was established in 2002 to accelerate universal access to HIV prevention, treatment, care and support services. In 2004, the number of PLHIV in India was estimated to be 5.1 million, with a population prevalence of 0.4%. Very few of them were on antiretroviral therapy. Even by the end of 2004, only 7,000 PLHIV were on ART.

The key barrier to access to treatment was unaffordability for individuals, and geographical access to treatment. In fact, the so-called "cocktail therapy" or HAART (highly active antiretroviral therapy), a combination of three or more anti-retroviral drugs, had become available starting in 1996, but costs were prohibitively high for most. As a result, millions of people were diagnosed and lost their lives while health-care providers felt helpless due to non-availability/non affordability of ARTs.

Therefore, the decision to make free ART for any adult living with HIV was a path-breaking one. From November 2006, the free ART was made available in all districts. Over the two decades of free ART initiative, the facilities offering ART have expanded from less than 10 to around 700 ART centres – 1,264 Link ART centres have provided, and are providing, free ART drugs to approximately 1.8 million PLHIV on treatment.

ART is not merely about starting a person living with HIV on treatment. It is equally important to keep the viral load down and suppressed to ensure that the transmission of diseases is also halted. The impact has been that in 2023, the prevalence of HIV in 15-49 years has come down to 0.20 (confidence interval 0.17%-0.25%) and the burden of disease in terms of estimated PLHIV has been coming down to 2.4 million. India's share in PLHIV globally had come down to 6.3% (from around 10% two decades ago). As of the end of 2023, of all PLHIV, an estimated 82% knew their HIV status, 72% were on ART and 68% were virally suppressed. The annual new HIV infections in India have declined by 48% against the global average of 38% (the baseline year of 2010). The annual AIDS-related mortalities have declined by 82% against the global average of 51% (the baseline year of 2010). These are significant achievements considering that many of the other government-run public health programmes in India have failed to achieve or sustain good coverage.

Patient-centric approach to services

It will be unfair to credit free ART alone for the success. There were many complementary initiatives which have contributed to halting the HIV epidemic. These include the provision of free diagnostic facilities; attention on prevention of parent to child transmission of HIV (PPTCT) services; prevention, diagnosis and management of opportunistic infections (OIs) and management of co-infections such as tuberculosis (TB).

The programme has shown agility and dynamic modifications. Early initiation of ART and Treat all policy evolved over the years where the ART eligibility criteria were relaxed – from 350 cells/mm3 (in 2013), to 500 cells/mm3 (in 2016), to 350 cells/mm3 (in 2020), to that less than 350 cells/mm3 (in 2020), and then to less than 500 cells/mm3 (in 2106). And, finally, there was the "Treat All" approach from 2017, which ensures that ART is initiated, irrespective of CD4 count. This has been a true universalisation and has helped in reducing the transmission of HIV, both at the individual and the community levels. This is supplemented by free of cost viral load testing for all PLHIV on treatment. The programme also adopted a patient-centric approach by providing two to three months of medicines to stable PLHIV which minimises the number of patient visits to ART centres, reducing travel time and costs for the patients.

This approach also increases adherence to treatment besides decongesting ART centres by reducing the average daily OPD, giving health-care workers more time to attend to other patients. India continued to add newer and more effective drugs in its treatment guidelines when these became available. For example, Dolutegravir (DTG), a new drug with superior virological efficacy and minimal adverse effects was introduced in 2020. In 2021, India adopted a policy of rapid ART initiation in which a person was started on ART within seven days of HIV diagnosis, ideally preferably on the same day.

However, the fight against HIV/AIDS is far from over. The ongoing and fifth phase of India's National AIDS Control programme aims to (by 2025) reduce the annual new HIV infections by 80%, reduce AIDS-related mortalities by 80% and eliminate vertical transmission of HIV and syphilis.

To achieve this, the National AIDS Control Programme (NACP) phase 5 calls for the attainment of ambitious targets of 95:95:95 by 2025, where 95% of all people living with HIV know their HIV status; 95% of all people diagnosed with HIV infection receive sustained antiretroviral therapy (ART), and 95% of all people receiving antiretroviral therapy achieve viral suppression by 2025. These targets are aligned with global targets agreed by the UNAIDS.

Crossing the hurdles

There are a number of challenges yet to be tackled. First, the delayed enrolment to the ART facilities is the biggest challenge to the national programme. In India, patients presenting with HIV symptoms (WHO clinical stage) account for a third of total foot fall. Second, after starting on ART and continuing, the patient starts feeling well. But the moment this happens, they start missing doses and miss medicines for months or completely drop out. This results in the development of resistance as well. This has to be addressed by the national programme. The sustained supply and availability of ART needs to be ensured by the national programme, in every geography of the country and more so for tough terrain, hilly and remote areas. Fourth, there is a need to focus on the private sector engagement in care of PLHIV. Fifth, there is a need for constant innovation in the programme as the epidemic keeps evolving and should be focused more on hands-on training. Sixth, there is a need to focus on strengthening integration with other programmes such as hepatitis, non-communicable diseases (diabetes and hypertension) and mental health as PLHIV are increasingly facing issues in these areas. Co-morbidities that need to be addressed. Seventh, a focused approach needs to be adopted to reduce preventable mortality that includes systematic death reviews and availability of advanced diagnostics.

The free ART initiative in India succeeded, despite the odds, because of the strong political support of successive governments; sustained and sufficient funding, regular programme reviews and field-based monitoring; a series of complementary initiatives; community and stakeholder engagements and participation; people-centric modifications in the service delivery; flexibility in addressing gaps in implementation gaps, and continuous expansion of services to cover more people living with HIV.

The free ART initiative arguably paved the path for bending the HIV/AIDS epidemic curve in India. It is a testament to the point that if there is a will, the government-run public health programmes can deliver quality health services free, and available and accessible to everyone. The 20 years of free ART and subsequent steps under the NACP have the potential to guide other public health programmes in the country. As an example, the learnings can and should be used to launch a nationwide free hepatitis C treatment initiative in India and accelerate progress towards hepatitis C elimination.

- **Evolution of Free ART Initiative**
  - **Origins of the Initiative:** Launched amidst global efforts to combat HIV/AIDS, the Free ART initiative aimed to address the challenges of limited access and affordability of antiretroviral drugs for PLHIV in India.
  - **Impact and Expansion:** Over the past two decades, the initiative has significantly expanded, with the establishment of around 700 ART centres and provision of free ART drugs to approximately 1.8 million PLHIV.
  - **Achievements:** The initiative has contributed to reducing the prevalence of HIV, with notable declines in new infections and AIDS-related mortalities, aligning with global targets set by UNAIDS.
- **Complementary Initiatives and Adaptations:**
  - **Comprehensive Approach:** Success of the Free ART initiative attributed to complementary measures such as free diagnostic facilities, prevention of parent-to-child transmission services, and management of opportunistic infections.
  - **Adaptive Strategies:** Programme evolved over time, incorporating early initiation of ART, 'Treat All' policy, and rapid ART initiation to enhance effectiveness and reduce virus transmission.
  - **Patient-Centric Services:** Introduction of patient-centric services, including provision of longer medication supplies, facilitated adherence to treatment and minimized clinic visits, enhancing overall healthcare delivery.
- **Challenges and Future Directions:**
  - **Persistent Challenges:** Despite successes, challenges such as delayed enrolment, patient adherence, and sustained supply of ART drugs persist, necessitating focused attention and intervention.
  - **Integration and Capacity Building:** Emphasis on integration with other health programmes, private sector engagement, and continuous capacity building crucial for addressing evolving healthcare needs.
  - **Policy Lessons and Way Forward:** The Free ART initiative underscores the importance of political will, sustained funding, and community engagement in delivering quality healthcare services. Its success provides valuable insights for strengthening other public health programmes and advancing towards disease elimination goals.

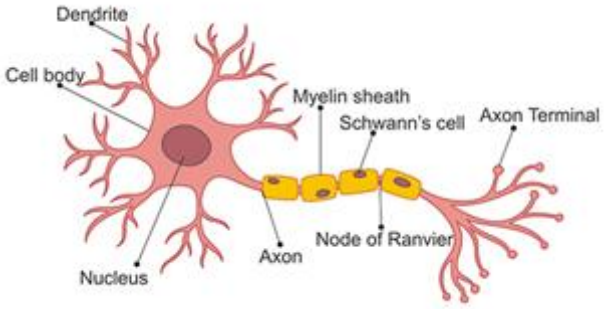
3. The evolution of Neuroscience & Concerns

GS 2 (Health)

How neuroscience reshapes marketing strategies in India

- **Why in News:** Neuroscience is increasingly applied in India to solve business challenges, such as understanding consumer behaviour; ethical considerations arise particularly concerning informed consent and transparency.
- **Significance of neuroscience**
  - **Understanding Brain Function:** The nervous system controls essential body functions and

processes thoughts, emotions, and behavior through neural connections in the brain. Neuroscience aims to study these neural connections and their role in information processing, both in healthy states and when damaged.



- **Impact on Human Health**: Neuroscience contributes to understanding various conditions like **Down syndrome, autism, ADHD, addiction, schizophrenia, Parkinson's disease, and immune disorders.**
- **Technological Advancements**: Recent technologies like membrane clamp electrophysiology, PCR, and genome sequencing have enhanced our understanding of cellular and molecular processes in the brain. Future advancements are anticipated to provide even deeper insights into how neurons function collectively, the origins of diseases, and the unique aspects of the human brain.

- **Ethical concerns**
  - **Informed Consent and Privacy:** Informed consent from research participants, especially when invasive techniques are used, and protecting their privacy regarding sensitive brain-related data.
  - **Cognitive Enhancement and Manipulation**: The use of neuroscience for cognitive enhancement or manipulation, raises questions about fairness, autonomy, and unintended consequences on individuals and society.
- **What is Neuroscience?**
  - Neuroscience is a multidisciplinary science that combines physiology, anatomy, molecular biology, developmental biology, chemistry, philosophy, computer science, mathematics, linguistics and medicine.
  - It is the scientific study of the structure and function of the human brain and nervous system.
  - Neuroscientists study the **cellular, functional, behavioral, evolutionary, computational, molecular, cellular, and medical aspects** of the nervous system, which contains billions of cells called neurons, or nerve cells.

4. Bharat Ratna

GS 1 (Art and Culture)

President Murmu confers Bharat Ratna on L.K. Advani

Press Trust of India
NEW DELHI

President Droupadi Murmu conferred Bharat Ratna on BJP stalwart and former Deputy Prime Minister L.K. Advani at his residence in Delhi on Sunday.

The ceremony was attended by Vice-President Jagdeep Dhankhar, Prime Minister Narendra Modi, Defence Minister Rajnath Singh, Home Minister Amit Shah and the family members of Mr. Advani, the Rashtrapati Bhavan said in a post on X.

Mr. Modi sat next to Mr. Advani as the President honoured the veteran leader with the Bharat Ratna, India's highest civilian award. In a post on X, Mr. Modi said that this honour is a recognition of his endeavours contributions to the nation's progress.

The Rashtrapati Bhavan described Mr. Advani as a doyen of Indian politics and said that he has served the nation with unwavering dedication and distinction for over seven decades.

President Droupadi Murmu confers Bharat Ratna on L.K. Advani, in the presence of PM Narendra Modi, in New Delhi on Sunday. PTI

- **Why in News:** President Droupadi Murmu presented the Bharat Ratna to five recipients -- socialist icon **Chaudhary Charan Singh**, former Prime Minister **PV Narasimha Rao**, former Bihar Chief Minister **Karpoori Thakur**, agriculture scientist **MS Swaminathan** and Bharatiya Janata Party (BJP) patriarch **L.K. Advani**.
- **Important contributions**
  - **V. Narasimha Rao** was commended for his leadership in economic reforms and his involvement in the freedom struggle against the Nizam rule in Hyderabad.
  - **Chaudhary Charan Singh's** contribution to the abolition of zamindari, his expertise in land reforms and his close ties with farmers were remembered.
  - **S. Swaminathan** was praised as the "Father of India's Green Revolution" for his role in making India self-reliant in food production.
  - **Karpoori Thakur's** commitment to helping marginalised communities was recognised, along with his role as a freedom fighter and an advocate for equality and inclusive development.
- **Bharat Ratna**
  - The Bharat Ratna is the highest civilian award of the Republic of India.

- Instituted on 2 January 1954, this prestigious award is conferred in recognition of “exceptional service/performance of the highest order”, without distinction of race, occupation, position, or gender.
- Initially limited to achievements in the arts, literature, science, and public services, the criteria were expanded in December 2011 to include "any field of human endeavor".
- Recommendations for the award are made by the Prime Minister to the President.
- The Bharat Ratna recipients rank seventh in the Indian order of precedence.

5. India grants GI Tags to over 60 items

GS 1 (Art and Culture)

- **Why in News:** Over 60 products from across India have been given the **Geographical Indication (GI) tag.**
- **The important products**
  - **Tripura:**
    - Pachra-Rignai, which is a traditional dress worn on special occasions
    - Matabari Peda, a sweet preparation
  - **Uttar Pradesh (Banaras)**
    - Banaras Thandai, a drink made by blending milk with a nutritious mix of nuts, seeds and spices
    - The Banaras Tabla, Banaras Shehnai, Banaras Lal Bharwamirch and Banaras Lal Peda.
  - **Assam**:
    - Six traditional crafts from Assam — Asharikandi terracotta craft, Pani Meteka craft, Sarthebari metal craft, Jaapi (bamboo headgear of rural Assam), Mishing handloom products, and the Bihu dhol.
  - Others:
    - Bodo Dokhona, the traditional attire of Bodo women
    - Bodo Eri silk, referred to as the fabric of peace or ahimsa (non-violence), which comes from the silkworm Samia ricini that feeds mostly on the leaves of the castor plant (Ricinus communis), and cassava
    - Bodo Jwmgra (a traditional scarf)
    - Bodo Gamsa (traditional dress of Bodo men)
    - Bodo Thorkha (a musical instrument)
    - Bodo Sifung (a long flute)
  - **Meghalaya:**
    - Meghalaya Garo Textile weaving (Garo dakmanda)
    - Meghalaya Lyrnai Pottery
    - Meghalaya Chubitchi (traditional drink)
    - Lakadong turmeric
- **GI Tag**
  - The Geographical Indication is awarded to products that have a **specific geographical origin**, and that have characteristics related to a **particular location.**
  - Till date, around 635 products in India have been given the GI tag.
  - The **first GI tag** in the country was given two decades ago to the famous **Darjeeling tea.**

A record 60 traditional products from across India granted GI tag

Sangeetha Kandavel
CHENNAI

Over 60 products from across India, including Banaras Thandai, have been given the Geographical Indication (GI) tag.

This is the first time that such a large number of products have been given the GI tag at one go, a senior official from the Geographical Indications Registry said, adding that more States were coming forward and filing applications to get a GI tag for their traditional products.

Six traditional crafts from Assam – Asharikandi terracotta craft, Pani Meteka craft, Sarthebari metal craft, Jaapi (bamboo headgear), Mishing handloom products, and Bihu dhol – have bagged the GI tag.

Thirteen other products from Assam have been given the tag, including the Bodo Dokhona, the traditional attire of Bodo women; and Bodo Eri silk, referred to as the fabric of peace or *ahimsa* (non-violence), which comes from the silkworm *Samia ricini* that feeds mostly on the leaves of the castor plant (*Ricinus communis*), and cassava. Bodo Jwmgra (a traditional scarf), Bodo Gamsa (traditional dress of Bodo men), Bodo Thorkha (a musical instrument), and Bodo Sifung (a long flute) are also on the list.

The Bihu dhol has been given the GI tag. THE HINDU

Assam Chief Minister Himanta Biswa Sarma, in a post on X, said it was a big win for Assam's heritage. "These products, deeply rooted in history, support nearly one lakh people directly," he said.

The famous Banaras Thandai, a drink made by blending milk with a mix of nuts, seeds and spices, also got the tag. Details in the GI filing mentioned that on any given evening, in the heart of the city, in areas such as Gaudaulia Chowk, Lahurabir, and the old lane of Pakka Mahal, traditional Banaras Thandai shops attract large crowds. The drink was first introduced centuries ago as an offering to the Shri Kashi Vishwanath deity on the occasion of Mahashivaratri, Rangbhari Ekadasi, and Holi. The Banaras Tabla, Banaras Shehnai, Banaras Lal Bharwamirch, and Banaras Lal Peda are among the products that walked away with GI tags in this region.

The Tripura region secured two tags – one for the Pachra-Rignai, which is a traditional dress worn on special occasions, and the other for the Matabari Peda, a sweet preparation.

Meghalaya Garo Textile weaving, which is linked to socio-cultural and religious rituals, Meghalaya Lyrnai Pottery, and Meghalaya Chubitchi also secured the tag.

6. Katchatheevu island controversy

Recent events of importance

PM: Cong gave Katchatheevu to SL; Kharge raises Bangla land pact

ARUN JANARDHANAN
CHENNAI, MARCH 31

THE DECADES-OLD territorial and fishing rights dispute around Katchatheevu island has been brought back into the limelight, with Prime Minister Narendra Modi targeting the Congress for ceding the island to Sri Lanka and the party hitting back, saying the PM was raking up the issue with an eye on the Lok Sabha polls.

Reacting to a Times of India report on the issue, based on a reply to an RTI query reportedly filed by Tamil Nadu BJP chief K Annamalai, Modi on X (formerly Twitter) said, "Eye-opening and startling! New facts reveal how Congress callously gave away Katchatheevu. This has angered every Indian and reaffirmed in people's minds – we can't ever trust Congress' character and intent. It has been Congress' way of working for 75 years and counting." He also raised the matter later at his rally in Meerut, and linked the issue to the capture of Tamil Nadu fishermen by the Sri Lankan Navy, boats by the Sri Lankan forces.

Katchatheevu Island is a 285-acre territory within Sri Lanka's maritime boundary, located 33 km from Rameswaram in India. The report cited by the PM claimed that the documents revealed that the documents Annamalai received in the RTI application revealed India's fluctuating stance on the island's sovereignty, ultimately leading to its cession to Sri Lanka in 1974, when Indira Gandhi was PM.

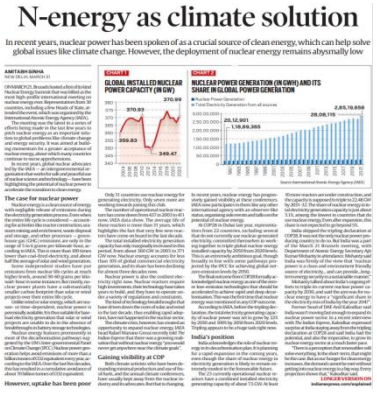
Responding to Modi's statement, Congress chief Mallikarjun Kharge said: "Under your (Modi's) watch, 1,100 acres of Indian land, 511 hectares from India were transferred to Bangladesh, and 55 enclaves came to India. In 1974, a similar agreement, based on friendly gesture, was initiated with another country – Sri Lanka on Katchatheevu.

"On the eve of elections in Tamil Nadu, you are raising this sensitive issue, but your own government's Attorney General, in 2008, had told the Supreme Court: 'Katchatheevu went to Sri Lanka by an agreement in 1974. How can it be taken back today? If you want Katchatheevu back, you will have to go to war to get it back.' There is also a land mass between the Indian mainland and Katchatheevu island, which is used by Indian fishermen to dry their nets. Sri Lanka has also claimed sovereignty over the island. Tamil Nadu has been opposing the transfer of the island to Sri Lanka.

- **Why in News:** Recently, the leader of the ruling political party attacked the main opposition party about its decision to "callously give away" the island of Katchatheevu.
- **Island of Katchatheevu**
  - **Geographical location**
    - Katchatheevu is an uninhabited area in the Palk Strait, between India and Sri Lanka.
      - ❖ It is no more than 1.6 km in length and slightly over 300 m wide at its broadest point.
    - It lies northeast of Rameswaram, about 33 km from the Indian coast.
    - It is about 62 km southwest of Jaffna, at the northern tip of Sri Lanka, and 24 km away from the inhabited Delft Island, belonging to Sri Lanka.
  - **History**
    - Being the product of a 14-century volcanic eruption, **Katchatheevu is relatively new in the geological timescale.**
    - In the early mediaeval period, it was controlled by the Jaffna kingdom of Sri Lanka.
    - In the **17th century**, control passed to the Ramnad zamindari based out of Ramanathapuram, about 55 km northwest of Rameswaram.
  - **Dispute**
    - The Island became part of the Madras Presidency during the British Raj.
    - But in 1921, both India and Sri Lanka, at the time British colonies, claimed Katchatheevu in order to determine fishing boundaries.
    - A survey marked Katchatheevu in Sri Lanka, but a British delegation from India challenged this, citing ownership of the island by the Ramnad kingdom.
    - This dispute was not settled until 1974.
- **Agreement on Katchatheevu Island**
  - **Indo-Sri Lankan Maritime agreement of 1974**
    - In 1974, the then Indian govt under Indira Gandhi made attempts to settle the maritime border between India and Sri Lanka, once and for all.
    - As a part of this settlement, known as the '**Indo-Sri Lankan Maritime agreement'**, Katchatheevu was ceded to Sri Lanka
    - At the time, she thought the island had little strategic value and that ceasing India's claim over the island would deepen its ties with its southern neighbour.
  - **1974 agreement and fishing rights of Indian fishermen**
    - As per the agreement, Indian fishermen were still allowed to access Katchatheevu.
    - Unfortunately, the issue of fishing rights was not ironed out by the agreement.
    - Sri Lanka interpreted Indian fishermens' **right to access Katchatheevu to be limited to rest, drying nets and for visit to the Catholic shrine without visa.**
  - **1976 agreement**
    - Another agreement in 1976, during the period of Emergency in India, barred either country from fishing in the other's Exclusive Economic Zone.
    - Again, Katchatheevu lay right at the edge of the EEZs of either country, retaining a degree of uncertainty with regards to fishing rights.
- **How did the Sri Lankan Civil War impact Katchatheevu?**
  - **During a period between 1983 and 2009**
    - Between 1983 and 2009, the border dispute remained on the back burner as a bloody civil war raged in Sri Lanka
    - As Sri Lankan naval forces focused on blocking LTTE supply lines from Jaffna, Indian fishermen often entered Sri Lankan waters.
    - Larger Indian trawlers were particularly disliked for overfishing and damaging local fishing gear and boats.
  - **After 2009**
    - In 2009, the war with the LTTE ended, and things dramatically changed.
    - Colombo beefed up its maritime defences, and turned focus to Indian fishermen.
    - Facing a depletion of marine resources on the Indian side, they would frequently enter Sri Lankan waters as they had been doing for years, but finally began facing consequences.
    - Till date, the Sri Lankan navy routinely arrests Indian fishermen and there have been many allegations of custodial torture and death.
    - **The demand for Katchatheevu is revived each time such an incident happens.**
- **Stand of the Union Government on the Issue**
  - The successive Union government's position on Katchatheevu has largely remained unchanged.
  - It has argued that since the island had always been under dispute, no territory belonging to India was ceded nor sovereignty relinquished.

7. The push for nuclear energy as climate solution

GS 3 (Environment)


N-energy as climate solution

In recent years, nuclear power has been spoken of as a crucial source of clean energy, which can help solve global issues like climate change. However, the deployment of nuclear energy remains abysmally low

AMITABH SINHA

GLOBAL INSTALLED NUCLEAR POWER CAPACITY (IN GW)

NUCLEAR POWER GENERATION (IN GWH) AND ITS SHARE IN GLOBAL POWER GENERATION

- **Why in News:**
  - Brussels held a unique Nuclear Energy Summit, considered the biggest international gathering on nuclear energy
  - Representatives from 30 countries, including some heads of state, attended. This meeting is part of recent efforts to promote nuclear energy as a solution to climate change and energy security.
- **Nuclear Energy Summit**
  - **About**
    - This Summit is an initiative in collaboration with the IAEA's 'Atoms4Netzero' programme.
      - Atoms4NetZero is an **IAEA initiative** that supports efforts by Member States to **harness the power of nuclear energy in the transition to net zero.**
      - Launched during COP27, this initiative provides decision makers with data-driven energy scenario modelling.
    - It is part of the multilateral approach to decarbonisation.
  - **Outcome**
    - The meeting was not meant to produce any decisions or finalise any agreement.
    - It aimed to boost support for nuclear energy, which many countries are unsure about, especially after the Fukushima accident in 2011.
    - Concerns grew further due to the crisis at the Zaporizhzhya nuclear power plant in Ukraine amid armed conflict.
- **The case for nuclear energy**
  - **Possible substitute for fossil fuels**
    - It is a clean source of energy with a minimal carbon footprint. There is negligible release of emissions during the electricity generation process.
    - **Even when the entire life cycle is considered, greenhouse gas emissions are only in the range of 5 to 6 grams per kilowatt hour**, according to IAEA.
      - Entire life cycle includes activities like reactor construction, uranium mining and enrichment, waste disposal and storage, and other processes.
    - This is more than 100 times lower than coal-fired electricity, and about half the average of solar and wind generation.
  - **Perennial availability**
    - The other great advantage of nuclear is its perennial availability, unlike wind or solar which are season or time-dependent.
    - It is thus suitable for baseload electricity generation that solar or wind projects are unable to do unless breakthroughs in battery storage technologies come along.
  - **Endorsed by many international institutions/reports**
    - Nuclear energy features prominently in most of the decarbonisation pathways suggested by the IPCC (Intergovernmental Panel on Climate Change) and others.
    - IAEA says nuclear energy is already contributing very significantly to reducing greenhouse gas emissions.
      - Nuclear power generation results in **avoiding emissions of more than 1 billion tonnes of CO_2 equivalent every year**, according to IAEA.
- **What explains the poor uptake of nuclear energy?**
  - **Current status**
    - Only **31 countries in the world use nuclear energy** for generating electricity. And barely seven more are working towards joining this club.
    - As per IAEA, the number of operational nuclear reactors has actually come down in the last 20 years, from 437 in 2003 to 411 now.
    - The total installed electricity generation capacity has shown only a marginal increase during this period, from about 360 GW in 2003 to 371 GW now.
    - Nuclear energy accounts for less than 10 per cent of global commercial electricity generation, and its share has been declining for almost three decades now.
  - **Reasons**
    - **Safety concerns** are one of the main reasons for the poor uptake of nuclear energy in recent years, particularly after the Fukushima accident.
    - Nuclear power also happens to be the **costliest electricity** right now.
    - Nuclear reactors require **high investments and technology base, take years to build, and have to operate under a variety of regulations and constraints.**
      - This makes them unattractive for countries wanting to quickly ramp up their electricity generation in an affordable manner.
    - The kind of **technology breakthroughs** that have driven down the costs of solar and wind in the last decade, have not happened in the nuclear sector.
      - The much-discussed technology of small modular reactors is far from being mature.
    - Also, Multilateral Development Banks (MDBs) and private investors have not made any significant contribution to the nuclear industry.
- **COP and nuclear Energy**
  - **Tripling declaration at COP28 in Dubai**

- In 2023, representatives from 22 countries committed themselves to working together to achieve a tripling of global nuclear energy installed capacity by 2050 from 2020 levels.
  - Interestingly, India skipped the tripling declaration at COP28 in Dubai.
  - It was not the only nuclear power-producing country to do so, several others also did not sign up.
- **Nuclear energy formed part of outcome declaration**
  - The final outcome from Dubai (COP 28) formally acknowledged nuclear energy as one of the zero, or low-emission technologies, that needed to be accelerated to achieve rapid and deep decarbonisation.
  - This was the first time that nuclear energy was mentioned in any COP outcome.

- **What is India's position on nuclear energy?**
  - India, which currently has **23 operational nuclear reactors**, does acknowledge the role of nuclear energy in its decarbonisation plan.
  - **Installed capacity**
    - The currently operational reactors have a combined installed electricity generating capacity of 7,480 MW (about 7.5 GW).
    - At least ten more reactors are under construction, and the capacity is supposed to triple to 22,480 MW by 2031-32.
  - **Share of nuclear energy in total electricity generation**
    - The share of nuclear energy in **total electricity generation capacity is just about 3.1 per cent, among the lowest in countries** that do use nuclear energy.
    - Only Brazil and Iran have a lower share of nuclear energy in their electricity generation mix.
    - Even after expansion, this share is not expected to go beyond 5 per cent.

8. Vaikom Satyagraha

GS 1 (History)

A century later, remembering Vaikom satyagraha, a progressive milestone

ARJUN SENGUPTA
NEW DELHI, MARCH 31

Early 20th century Travancore

Road to agitation

EXPLAINED HISTORY

A 600-day satyagraha

Legacy and aftermath

- **Why in News:** The centennial commemoration of the Vaikom Satyagraha (March 30, 2024), brings attention to a significant chapter in India's history thatforegrounded social reform amidst the growing nationalist movement, bringing Gandhian methods of protest to the state of Travancore
- **About the Satyagraha:**
  - Vaikom, a temple town in the princely state of Travancore, saw the start of a **non-violent agitation** on March 30, 1924 — the first among **temple entry movements** that would soon sweep across the country.
  - Vaikom Satyagraha lasted for 604 days (20 months) from March 30, 1924 to November 23, 1925.
  - It was a mass **Temple entry movement** for lower caste people.
  - **Leaders involved:**
    - **Led by:**TK Madhavan, KP Kesava Menon, K Kelapaan (Congress Leaders)
    - **Supported by:**Mahatma Gandhi, Periyar, C Rajagopalachari, Chattampi Swamikal, Sree Narayana Guru
  - The **nonviolent movement**demanded the **right of members of lower castes to walk on the roads leading to the Vaikom Temple**, now in the district of Kottayam.
  - The authorities denied their request, stating that it would lead to social unrest and disturbance.
  - This denial was met with widespread protests and demonstrations, which eventually led to the involvement of **Mahatma Gandhi**, who arrived in Vaikom in 1925.
  - **Gandhi** was able to iron out a **compromise: three out of the four roads surrounding the temples were opened up** for everyone but the fourth, eastern road was kept reserved for Brahmins.
  - **Outcome:** The protests eventually led to the historic **Temple Entry Proclamation** issued by the then **king Chithira Thirunal Balarama Varma** on November 12, 1936. It abolished the ban on **'lower castes'** from entering Hindu temples in the **Princely State of Travancore.**

9. India's Trade Reliance on China and EU Rising: UNCTAD

GS 3 (Economy)

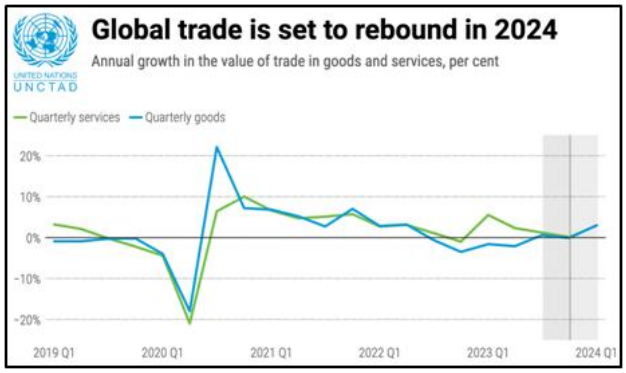
India's trade reliance on China and EU rising: UN trade body

RAVI DUTTA MISHRA
NEW DELHI, MARCH 31

UNCTAD's estimates showed a major shift in trade due to the ongoing Russia-Ukraine war, the

- **Why in News:** India's trade reliance on China and the European Union is rising as global trade is witnessing a marked shift along geopolitical lines, says a report by the United Nations Conference on Trade and Development (UNCTAD).
- **About United nations Conference on Trade & Development (UNCTAD):**

- UNCTAD is a **permanent inter-governmental body** established by the United Nations General Assembly in 1964.
- It is responsible for dealing with development issues, particularly international trade.
- Framing policies in various domains such as trade, technology, finance, aid, and transport are the most important priorities of UNCTAD.
- The Conference ordinarily meets once in four years.
  - The **second UNCTAD Conference took place in New Delhi, India in 1968.**
- **Members:** 195 countries
- **Headquarters:** Geneva, Switzerland



- **Objectives of UNCTAD:**
  - UNCTAD, with its work in the national and global levels, aims to help countries to:
    - Understand options to address macro-level development challenges.
    - Acquire beneficial integration into the international trading system.
    - Reduce the dependency on commodities by diversifying the economies.
    - Decrease their exposure to debt and financial volatility.
    - Increase development-friendliness by attracting more investments.
    - Increase technologies related to the digital domain.
    - Give more thrust to innovation and entrepreneurship.
    - Facilitate the flow of goods across borders.
    - Prevent consumer abuse.
    - Competition should not be stifled; hence any concerned regulations would be cross-checked.
    - Effectively utilize natural resources that would help in adapting to climate change.
- **Reports Published by UNCTAD:**
  - Trade and Development Report
  - Trade and Environment Review
  - World Investment Report
  - Least Developed Countries Report
- **UNCTAD Report:**
  - The UNCTAD in its Global Trade Report has highlighted that after facing declines over several quarters, international trade is poised for a rebound in 2024.
    - **In 2023, global trade saw a 3% contraction, equalling roughly $1 trillion**, compared to the record high of $32 trillion in 2022.
  - Available data for the first quarter of 2024 suggests a continued improvement in global trade, especially considering moderating global inflation and improving economic growth forecasts.
  - Additionally, rising demand for environmental goods, particularly electric vehicles, is expected to bolster trade this year.
- **Highlights of the report with respect to India:**
  - The report has highlighted that **India's trade reliance on China and the European Union is rising as global trade** is witnessing a marked shift along geopolitical lines.
  - It showed that **India's dependence on China and the European Union (EU) grew by 1.2 per cent while its reliance on Saudi Arabia slid by 0.6 per cent**.
    - This came despite India's efforts to cut reliance on China by implementing its flagship Production-Linked Incentive (PLI) scheme and Quality Control Orders (QCOs) largely to limit entry of cheap Chinese products.
  - UNCTAD's estimates showed a major shift in trade due to the ongoing Russia-Ukraine war.
  - While Russia's trade dependence on China surged by a record 7.1 per cent, its reliance on the EU slid by 5.3 per cent.
  - This was largely a result of Russian oil shifting from the EU to China and India.
    - The **dependence of an economy on another is calculated as the ratio of their bilateral trade over the total trade of the dependent economy**.
    - Change is computed as a four-quarter average of this ratio relative to the same period in the previous year, the report said.

10. <u>Natural Gas: Cleaner but not clean</u>
<u>GS 3 (Environment)</u>

- **Why in News:** Amidst global energy politics, the narrative of natural gas being 'cleaner' in comparison to coal requires closer scrutiny, especially considering the continuing overuse of oil and gas by developed countries despite their share of the **carbon budget.**
- **The Race for adoption of natural gas**
  - In race towards energy transition, natural gas has emerged as a key player, often touted as a 'bridge fuel' for nations aiming to reduce reliance on coal and oil.
  - Advocates highlight its cleaner profile compared to other fossil fuels, emitting 50% less CO_2 during combustion, positioning it as a crucial element in the pathway towards renewable energy and electrification.
  - Furthermore, the **Intergovernmental Panel on Climate Change (IPCC)** has underscored the urgency of phasing

Govt cuts price of natural gas produced from challenging areas

PRESS TRUST OF INDIA
NEW DELHI, MARCH 31

THE GOVERNMENT Sunday marginally cut the price of natural gas produced from challenging areas, like the deep sea KG-D6 block of Reliance Industries, to $9.87 per million British thermal unit in line with the softening of benchmark international gas prices, an official notification said.

The price of gas used for making CNG for automobiles or kitchens will remain unchanged due to a price cap that is set at 30% less than market rates such as that paid to Reliance. For a six-month period from April 1, the price of gas from deep sea and high-pressure, high-temperature areas has been cut to $9.87 per mmBtu from $9.96, the Petroleum Planning and Analysis Cell said.

out coal over reducing gas usage for the 1.5°C pathway, particularly impacting coal-dependent **Global South countries.**

- **Significance of Natural Gas for India**
  - **Economic benefits**: India is largely dependent on import of fossil to meet energy needs. Adoption of natural gas will reduce import costs and thus foreign exchange.It will create new employment opportunities to harness demographic dividend.
  - **Environmental benefits**: It will help in achieving target of increasing non fossil fuel energy consumption to 40% by 2030.
  - **Social benefits**: It will tackle health challenges due to rise in pollution by fossil fuels. AS per WHO, estimates that globally about seven million people die prematurely each year from diseases linked to air pollution
- **The other side of natural gas**
  - Natural gas produces half as much carbon dioxide (C02) when burned than coal, but that doesn't make it harmless.
  - **Rising production of natural gas is** emerging as one of the biggest drivers of climate change.
  - **Methane releases** from the natural gas supply chain are a key factor in equalising overall GHG emissions between gas and coal, creating emissions parity.

NEELOFER CIVIL SERVICE CLASSES UPSC WITH NSCS DELHI IAS

2nd April, 2024

1. The PMLA — a law that has lost its way
GS 2 (Governance)

The PMLA — a law that has lost its way

The Prevention of Money Laundering Act (PMLA), 2002 was enacted with a distinct objective. The humongous volume of black money generated through international drug trafficking posed a threat to the integrity of nations and economies. There was widespread realisation that the black money generated through the flourishing drug trade and integrated into the legitimate economy was likely to destabilise the world economy and endanger the integrity and sovereignty of nations.

The background to the law is important

The United Nations took serious note of this, and in 1988, held the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances. All countries were urged to take urgent steps to prevent the laundering of the proceeds of drug crimes and other connected activities. Subsequent to this, seven major industrial nations held a summit in 1989 and established the Financial Action Task Force (FATF) to examine the problem of money laundering and recommend measures to tackle this menace. Thereafter, in 1990, the United Nations General Assembly adopted a resolution, namely, the Political Declaration and Global Programme of Action which called upon all member countries to enact suitable pieces of legislation to effectively prevent the laundering of money.

In pursuance of this resolution of the UN General Assembly, the Government of India used the recommendations of the FATF to formulate a legislation to prevent drug money laundering. As drug trafficking is a trans-border operation, the UN held a special session on June 10, 1998 on the theme "Countering World Drug Problem Together" and made another declaration on the subject matter of money laundering. Accordingly, the Indian Parliament enacted the Prevention of Money Laundering Act in 2002. But it was brought into force in 2005.

This narration of the history of this law is necessary in order to emphasise the original objective and the circumstances which lead to the enactment. As is clear from the history, the main focus of the law is on combating the laundering of the proceeds of drug crimes. The PMLA contained a few offences listed in the Indian Penal Code (IPC) and the Narcotic Drugs and Psychotropic Substances Act, 1985. The UN resolutions, and the FATF recommendations are all focussed on the prevention of money from the laundering of drugs. However, the PMLA of India acquired a different character through successive amendments to the law.

The law on money laundering revolves around the "crime proceeds" which are laundered. Not only the persons involved directly in the crime and the generation of the crime proceeds but also persons who have nothing to do with the crime but who have some involvement at a later stage in the laundering process are also guilty under this law.

But the most serious aspect of the PMLA is that it includes a large number of offences in the schedule which have nothing to do with the original purpose of this law – namely, combating the laundering of drug money. The UN resolution on the basis of which the law on laundering was enacted in India spoke only about the offence of the laundering of drug money. The UN resolutions, the FATF recommendations on crime which had the potential to destabilise the world economy and endanger the sovereignty of nations, as highlighted above. The preamble to the PMLA endorses it. So, there was global consensus on the need to have a tough law to deal effectively with this crime. Thus, the raison d'etat for the PMLA was the need to combat the menace of a huge volume of black money generated from the international drug trade and the spectre of destabilisation of the world economy.

The PMLA's enactment

Further, the PMLA was enacted by India's Parliament under Article 253 which empowers it to make laws for implementing the international conventions. Thus, the power of the Indian Parliament makes to implement any decision of an international body will be confined to the subject matter of that decision. Item 13 in the Union list of the Seventh Schedule of the Constitution is specific on this point. Thus, the law on money laundering enacted under Article 253 and Item 13 of the Union list in the context of the UN resolution referred to above can only be in relation to the crime of money laundering. But this Act at different times bloated the schedule which now contains such offences which are either ordinary offences listed in the IPC or for which there are special laws in force. Since money laundering as an offence is linked to one of the scheduled offences, the offences contained in the schedule become the starting point of the whole process of operationalisation of the PMLA. It is in the nature of things that the offences in a run of ordinary prudence that this law has deviated from its original scheme. The provisions contained in it are draconian which were meant to deal with the dangerous men involved in drug trafficking and the money chain. These provisions are now being used in other scheduled offences which have nothing to do with drug offences which by their very nature do not generate crime proceeds of a scale which can destabilise the economy and endanger the sovereignty of the nation are being tried under this law. One such example is the Prevention of Corruption Act, 1988 which is aimed at curbing corruption among public servants. This Act was added to the schedule of offences in 2009. The PMLA is applicable to all "public servants". Thus, a public servant charged with corruption and a hard-core drug trafficker are treated alike. A very disturbing thing about the PMLA is that an accused under this law is presumed to be guilty until proved innocent.

A fundamental principle of Anglo-Saxon jurisprudence is that a person is presumed innocent until proven guilty. PMLA turns this principle on its head. Bail cannot easily be denied bail by the entire hierarchy of courts because the bail provision contained in section 45 of the PMLA says that a judge can give bail only when he is satisfied that the accused is innocent. Which judge will take such a risk? So the person will rot in jail for years together without trial.

The bail provision

The bail provision of the PMLA Act Section 45) is invested with a lot of political significance in present day India. It was held unconstitutional by a two-judge Bench of the Supreme Court of India in *Nikesh Tarachand Shah vs Union of India* (2018) as violating Article 14 and Article 21. However, Parliament, with great alacrity, restored this provision in the Finance Act, 2018 which was upheld by a three-judge Bench headed by Justice A.M. Khanwilkar in *Vijay Madanlal Choudhary vs Union of India* (2022). The top court held that this provision is reasonable and has direct nexus with the purposes and objects of the PMLA Act. Herein lies the problem.

The object of the Act is to curb the laundering of black money and to save the economy from the destabilising effect. But the list of various offence which have found a place in the schedule? The learned judges nearly said that inclusion of a particular offence in the schedule comes within the domain of the legislative policy.

The present judicial approach to the issue of bail in PMLA cases appears to be very technical. The judicial perspective on bail was laid out by Justice VR. Krishna Iyer back in 1978 under the memorable dictum: *State of Rajasthan vs Balchand alias Baliya, Privy Conseiller, High Court of Andhra*: "Personal liberty, deprived when bail is refused, is too precious a value of our constitutional system recognised under Article 21 that the curial power to negate it is a great trust exercisable, not casually but judicially, with lively concern for the cost to the individual and the community". From Justice VR. Krishna Iyer to Justice A.M. Khanwilkar, the apex court has travelled a long distance.

- **Why in News:** The Prevention of Money Laundering Act (PMLA), 2002, is under scrutiny due to its broadened scope beyond its original focus on combating the laundering of drug money.
- **Background and Original Objective:**
  - **Global Concerns:** The enactment of the PMLA stemmed from international efforts to combat money laundering, particularly proceeds from drug trafficking, highlighted by UN resolutions and the establishment of the FATF.
  - **Focused Legislation:** Initially, the PMLA primarily targeted the laundering of drug money, aligning with UN resolutions and FATF recommendations to tackle this specific aspect of money laundering.
  - **Parliamentary Enactment:** The PMLA was enacted by India's Parliament under Article 253 to implement international conventions and decisions, with its scope confined to the subject matter of combating drug money laundering.
- **Expansion of Scope and Concerns:**
  - **Inclusion of Diverse Offences:** Over time, the PMLA schedule expanded to include various offences unrelated to its original purpose, such as those listed in the IPC or other special laws, deviating from its focus on drug money laundering.
  - **Uniform Application:** The PMLA's stringent provisions, initially designed for drug traffickers, are now applied uniformly across all scheduled offences, including non-drug-related crimes like corruption under the Prevention of Corruption Act, 1988.
  - **Presumption of Guilt:** The PMLA's bail provision (Section 45) reverses the presumption of innocence, requiring the accused to prove innocence for bail, leading to prolonged detention without trial and raising concerns about individual rights.

2. Heatwaves Conditions across India
GS 3 (Environment)

Heatwave conditions likely during election season, warns IMD

The Hindu Bureau
NEW DELHI

The India Meteorological Department (IMD) on Monday warned of "above-normal" heatwave conditions in most parts of the country in April and May. These are the months when polling will be held across the country.

Advisories have been issued to the Election Commission (EC) and the States to take adequate precautions.

Gujarat, Maharashtra, Andhra Pradesh, north Karnataka, Odisha, and western Madhya Pradesh, which on average see one to three heatwave days during April and May, are likely to experience two to eight heatwave days, the IMD said. Heatwave days occur when day temperatures in a place are at least 4.5 degrees Celsius above normal, or greater than 45 degrees Celsius, on two consecutive days.

While these regions are particularly vulnerable, above-normal temperatures are likely over the entire country barring Kerala, Jammu and Kashmir, Himachal Pradesh, Uttarakhand, and most of the northeastern States.

Union Minister for Earth Sciences Kiren Rijiju said that advisories had been issued to the EC and the

Advisories have been issued to the EC and the States to take adequate precautions.

States to "take precautions" to equip polling booths with oral rehydration salts for booth officials or voters who may experience a heatstroke.

"Electors are advised to carry wet towels to protect themselves from dehydration and women electors are advised to avoid bringing small children to booths during hot weather conditions," the EC had said in an advisory on March 16. Given that the Lok Sabha election is held in the summer months, these are routine advisories sent by the EC to its officials.

One of the reasons for the expected hotter than usual summers is the continuing effect of the El Nino, M. Mohapatra, Director-General, IMD, said. Associated with the heating of the surface waters of the Central Pacific, the El Nino is linked to drying up of the rains in India.

- **Why in News: Anthropogenic climate change** is turning ambient heat into an **inevitable environmental hazard**. India is poised to encounter an increased number of heat-wave days than usual from April to June and this expansion of the realm of **extreme heat** is potentially the **gravest consequence of climate change for India.**
- **Impact of Heat Waves over different sectors**
  - **Health impact:**
    - **Heat Stress:** Exposure to severe or continuous heat leads to heat stress. Illnesses range from superficial/mild and manageable (e.g. prickly heat, heat-related swelling, heat cramps, heat exhaustion) to a medical emergency (i.e. heat stroke).
    - **Heat stroke** is the most severe of heat-related illnesses. It presents with impaired brain function (i.e. stroke) due to uncontrolled body heating. It is a time-critical condition that often turns fatal if there is a delay or failure in reducing body temperature by rapid, active cooling. Besides neurological impairment, high core body temperature (at least 40 degrees C), or hot, dry skin are other heat stroke symptoms. Someone in perfect health and participating in what seem to be normal activities may die from heat stroke within an hour.
  - **Environmental impact:** Heatwaves also have compound and cascading environmental impacts like concurrent drought, glacial lake outbursts causing flash floods, urban/wildfires, and increased air pollution from ground-level ozone and dust storms.
  - **Economic Impact:**
    - **Impact on crops:** There are concerns about the potential adverse effects on wheat, rapeseed, and chickpea production. India, being the world's second-largest wheat producer, could face significant repercussions.

- **Power demand**: There are possibility of surpassing power demand over supply during the summer season.

- **Heat Wave**
  - Heat wave is a condition of air temperature which becomes fatal to human body when exposed.
  - Quantitatively, it is defined based on the **temperature thresholds over a region in terms of actual temperature or its departure from normal**.
  - For declaring a heat wave, the temperature should be 4.5 °C above normal for that time in a region.
  - The criteria for the coastal station maximum temperature should be greater than or equal to 37 °C.
- **Favourable conditions of heat wave formation**
  - **Transportation / Prevalence of hot dry air over a region**: There should be a region of warm dry air and appropriate flow pattern for transporting hot air over the region.
  - **Absence of moisture in the upper atmosphere:** As the presence of moisture restricts the temperature rise.
  - **The sky should be practically cloudless**: To allow maximum insulation over the region.
  - **Large amplitude anti-cyclonic flow** over the area.

3. Why SC Barred Unregulated Soil Extraction for Linear Projects
GS 2 (Governance)

- **Why in News:** The SC has set aside a notification issued by the Environment Ministry 3 years ago that exempted extraction of ordinary earth for linear projects (road, railways construction), from obtaining Environmental Clearance (EC).
- **What was the Notification that Exempted Extraction of Ordinary Earth for Linear Projects?**
  - **In 2006**, the Environment Ministry had issued a notification under **the Environment (Protection) Act 1986** (EPA) on activities that would require prior EC.
  - **In 2016**, a 2nd notification was issued, exempting certain categories of projects from this requirement.
  - **The 3rd notification of 2020** added "**Extraction or sourcing or borrowing of ordinary earth for the linear projects such as roads, pipelines, etc**" to the list of exempted activities.

Why SC barred unregulated soil extraction for linear projects

JAY MAZOOMDAAR
NEW DELHI, APRIL 1

THE SUPREME Court has set aside a notification issued by the Environment Ministry three years ago that exempted extraction of ordinary earth for linear projects, such as road and railways construction, from obtaining Environmental Clearance (EC).

The exemption, offered in March 2020, was challenged before the National Green Tribunal (NGT), which asked the Ministry in October 2020 to review it within three months. As the Ministry dragged its feet, the matter reached the top court, which on March 21 this year struck down the "blanket" and "arbitrary" exemption.

The 2020 exemption

In September 2006, the Environment Ministry had issued a notification under The Environment (Protection) Act, 1986, on activities that would require prior EC. In January 2016, a second notification was issued, exempting certain categories of projects from this requirement.

The third notification of March 2020 added "Extraction or sourcing or borrowing of ordinary earth for the linear projects such as roads, pipelines, etc" to the list of exempted activities.

The Centre argued before the NGT that the exemption was necessary "for the aid of general public", and would help "the kumhars (potters), farmers, gram panchayats, vanjara, oads of Gujarat", and all non-mining activities identified by the states. It also said that grant of exemption was a policy matter that did not warrant judicial interference.

The general purpose of the 2020 notification was to conform to the amendments made to the Mines and Minerals (Development and Regulation) Act, 1957, in March 2020, allowing new lessees to continue mining for two years with the statutory clearances and licences issued to their predecessors.

Grounds for challenge

The exemption was challenged before the NGT on the ground that allowing the extraction of earth indiscriminately was arbitrary and violative of Article 14 of the Constitution of India. The petitioner argued that the exemption violated the requirement of prior EC to the lessee as laid down by the top court in *Deepak Kumar* versus the *State of Haryana* (2012).

It was submitted that the Ministry had circumvented the legal procedure of inviting public objections before issuing the 2020 notification by wrongly exercising its powers to do away with such requirements "under the garb of 'public interest' during the Covid-19 national lockdown...to serve and further the interest of private miners and contractors".

In October 2020, the NGT held that the Ministry "should strike a balance and instead of being a blanket exemption, it needs to be hedged by appropriate safeguards such as the presence of excavation and quantum". The Tribunal asked the Centre to "revisit" the notification within three months.

What government did

The Centre sat on the NGT order until the appellant moved the SC. It was only after the SC concluded the hearing and reserved its judgment on August 10, 2023, that the Ministry issued an Office Memorandum on August 21, laying down the enforcement mechanism for the exemption.

On August 30, 2023, the Ministry notified that the exemption in question would be "subject to the compliance of standard operating procedures and environmental safeguards issued in this regard from time to time".

EXPLAINED LAW

What the SC said

First, the court held that "completely unguided and blanket exemption" was arbitrary and violative of Article 14 because the 2020 notification did not define 'linear projects' or specify the quantum and the extraction area.

Second, the court held that the Ministry offered no justification for concluding "that it is in the public interest, the requirement of public notice should be dispensed with" at any stage — neither in the notification itself nor in its submission to the NGT and SC. The decision was made without any application of the mind, it said.

Third, even the August 2023 notification, the court said, failed to elaborate on the concept of linear projects, specify the authority responsible for environmental safeguards or provisions for the same, or impose restrictions on the quantum of extraction.

"The notification was issued two days after the nationwide lockdown was imposed... The work of linear projects, such as roads, pipelines, etc, had come to a grinding halt... We fail to understand the undue haste shown by the Central Government in issuing the impugned notification," the court said.

Not the first time

Similar exemptions under the EP Act have come under judicial scrutiny in the past.

In January 2018, the NGT quashed an exemption offered by the Ministry's 2016 notification from the requirement of prior EC for building and construction activities having built-up area of more than 20,000 sq m. There was nothing to suggest an improvement in the quality of the environment to justify the exemption, the Tribunal observed.

Underlining that the EP Act mandates prior approval, the NGT in July 2015 struck down two Office Memorandums issued by the Ministry in December 2012 and June 2014 for granting ex-post facto EC to projects under the 2006 notification.

Another notification of the Ministry in July 2021 sought to perpetuate an amnesty window opened for just six months in March 2017 to clear projects under the "violation category" and issued ex-post facto approval to more than 300 projects, until the SC stayed it in January this year.

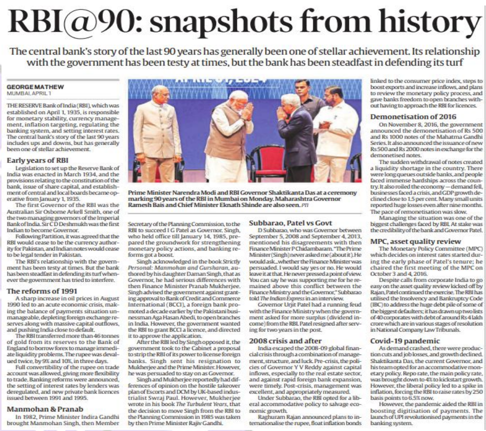
On March 6, the Kerala High Court quashed a 2014 notification that exempted educational institutions and industrial sheds with built-up areas of more than 20,000 sq m from obtaining EC.

- **Why was this Notification Issued?**
  - The Centre argued before the National Green Tribunal (NGT) that the exemption was necessary **for the aid of the general public**.
    - This would help the kumhars (potters), farmers, gram panchayats, vanjara, oads of Gujarat and all non-mining activities identified by the states
  - The general purpose of the 2020 notification was **to conform to the amendments made to the Mines and Minerals (Development and Regulation) Act 1957** (in March 2020).
    - This would allow new lessees to continue mining for two years with the statutory clearances and licences issued to their predecessors.
  - The Centre also said that grant of exemption was **a policy matter** that did not warrant judicial interference.
- **Grounds on which the 2020 Exemption/Notification Challenged:**
  - The exemption was challenged before the NGT on the ground that allowing the extraction of earth indiscriminately was **arbitrary and violative of Article 14 of the Constitution of India**.
  - The petitioner argued that the exemption **violated the requirement of prior EC** in the leases as laid down by the top court in Deepak Kumar versus the State of Haryana (2012).
  - It was submitted that the Environment Ministry had **circumvented the legal procedure of inviting public objections** before issuing the 2020 notification during the Covid-19 national lockdown.
    - **This served and furthered the interest of private miners and contractors.**
  - According to the NGT, the Environment Ministry should strike a balance, and rather than providing a blanket exemption, it should be accompanied by suitable safeguards.
    - The Tribunal asked the Centre to "**revisit**" the notification within three months.
- **Response of the Government:**
  - **The Centre sat on the NGT order until the appellant moved the SC.**
  - It was only after the SC concluded the hearing and reserved its judgement, that the Ministry issued an Office Memorandum laying down the enforcement mechanism for the exemption.
  - The Ministry notified that the exemption in question would be s**ubject to the compliance of standard operating procedures and environmental safeguards** issued in this regard from time to time.
- **What the SC Said?**
  - The court held that completely unguided and blanket exemption was **arbitrary and violative of Article 14** because the 2020 **notification did not define 'linear projects'** or specify the quantum and the extraction area.

- The notification failed to clarify on the notion of linear projects, designate the authority in charge of environmental safeguards or make arrangements for the same, or establish limits on the amount of extraction.
- **The court failed to understand the govt's undue haste** in issuing the impugned notification, when construction of linear projects had come to a standstill due to nationwide lockdown.

- **Similar Exemptions that have Faced Judicial Scrutiny in the Past:**
  - **In 2018,** the NGT quashed an exemption offered by the Ministry's 2016 notification from the requirement of prior EC for building and construction activities having built-up areas of more than 20,000 sq m.
    - There was nothing to suggest an improvement in the quality of the environment to justify the exemption.
  - Underlining that the EPA mandates prior approval, **the NGT in 2015 struck down two Office Memorandums issued by the Ministry** for granting ex-post facto EC to projects under the 2006 notification.
  - **Recently, the Kerala HC quashed a 2014 notification** that exempted educational institutions and industrial sheds with built-up areas of more than 20,000 sq m from obtaining EC.

4. RBI @ 90
GS 3 (Economy)



RBI@90: snapshots from history

The central bank's story of the last 90 years has generally been one of stellar achievement. Its relationship with the government has been testy at times, but the bank has been steadfast in defending its turf

GEORGE MATHEW
MUMBAI, APRIL 1

THE RESERVE Bank of India (RBI), which was established on April 1, 1935, is responsible for monetary stability, currency management, inflation targeting, regulating the banking system, and setting interest rates. The central bank's story of the last 90 years includes ups and downs, but has generally been one of stellar achievement.

Early years of RBI

Legislation to set up the Reserve Bank of India was enacted in March 1934, and the provisions relating to the constitution of the bank, issue of share capital, and establishment of central and local boards became operative from January 1, 1935.

The first Governor of the RBI was the Australian Sir Osborne Arkell Smith, one of the two managing governors of the Imperial Bank of India. Sir C D Deshmukh was the first Indian to become Governor.

Following Partition, it was agreed that the RBI would cease to be the currency authority for Pakistan, and Indian notes would cease to be legal tender in Pakistan.

The RBI's relationship with the government has been testy at times. But the bank has been steadfast in defending its turf whenever the government has tried to interfere.

The reforms of 1991

A sharp increase in oil prices in August 1990 led to an acute economic crisis, making the balance of payments situation unmanageable, depleting foreign exchange reserves along with massive capital outflows, and pushing India close to default.

The RBI transferred more than 46 tonnes of gold from its reserves to the Bank of England to borrow forex to manage immediate liquidity problems. The rupee was devalued twice, by 9% and 10%, in three days.

Full convertibility of the rupee on trade account was allowed, giving more flexibility to trade. Banking reforms were announced, the setting of interest rates by lenders was deregulated, and new private bank licences issued between 1991 and 1995.

Manmohan & Pranab

In 1982, Prime Minister Indira Gandhi brought Manmohan Singh, then Member Secretary of the Planning Commission, to the RBI to succeed I G Patel as Governor. Singh, who held office till January 14, 1985, prepared the groundwork for strengthening monetary policy actions, and banking reforms got a boost.

Singh acknowledged in the book *Strictly Personal: Manmohan and Gursharan*, authored by his daughter Daman Singh, that as Governor, he had serious differences with then Finance Minister Pranab Mukherjee. Singh advised the government against granting approval to Bank of Credit and Commerce International (BCCI), a foreign bank promoted a decade earlier by the Pakistani businessman Aga Hasan Abedi, to open branches in India. However, the government wanted the RBI to grant BCCI a licence, and directed it to approve the application.

After the RBI led by Singh opposed it, the government took to the Cabinet a proposal to strip the RBI of its power to license foreign banks. Singh sent his resignation to Mukherjee and the Prime Minister. However, he was persuaded to stay on as Governor.

Singh and Mukherjee reportedly had differences of opinion on the hostile takeover plan of Escorts and DCM by UK-based industrialist Swraj Paul. However, Mukherjee wrote in his book *The Turbulent Years*, that the decision to move Singh from the RBI to the Planning Commission in 1985 was taken by then Prime Minister Rajiv Gandhi.

Subbarao, Patel vs Govt

D Subbarao, who was Governor between September 5, 2008 and September 4, 2013, mentioned his disagreements with then Finance Minister P Chidambaram. "The Prime Minister (Singh) never asked me (about it). He would ask...whether the Finance Minister was persuaded. I would say yes or no. He would leave it at that. He never pressed a point of view. You can say he was supporting me for he remained above this conflict between the Finance Ministry and the Governor," Subbarao told *The Indian Express* in an interview.

Governor Urjit Patel had a running feud with the Finance Ministry when the government asked for more surplus (dividend income) from the RBI. Patel resigned after serving for two years in the post.

2008 crisis and after

India escaped the 2008-09 global financial crisis through a combination of management, structure, and luck. Pre-crisis, the policies of Governor Y V Reddy against capital inflows, especially to the real estate sector, and against rapid foreign bank expansion, were timely. Post-crisis, management was excellent, and appropriately measured.

Under Subbarao, the RBI opted for a liberal accommodative policy to salvage economic growth.

Raghuram Rajan announced plans to internationalise the rupee, float inflation bonds linked to the consumer price index, steps to boost exports and increase inflows, and plans to review the monetary policy process, and gave banks freedom to open branches without having to approach the RBI for licences.

Demonetisation of 2016

On November 8, 2016, the government announced the demonetisation of Rs 500 and Rs 1000 notes of the Mahatma Gandhi Series. It also announced the issuance of new Rs 500 and Rs 2000 notes in exchange for the demonetised notes.

The sudden withdrawal of notes created a liquidity shortage in the country. There were long queues outside banks, and people faced immense hardships across the country. It also roiled the economy — demand fell, businesses faced a crisis, and GDP growth declined close to 1.5 per cent. Many small units reported huge losses even after nine months. The pace of remonetisation was slow.

Managing the situation was one of the biggest challenges faced by RBI. At stake was the credibility of the bank and Governor Patel.

MPC, asset quality review

The Monetary Policy Committee (MPC) which decides on interest rates started during the early phase of Patel's tenure; he chaired the first meeting of the MPC on October 3 and 4, 2016.

Despite calls from corporate India to go easy on the asset quality review kicked off by Rajan, Patel continued the exercise. The RBI has utilised the Insolvency and Bankruptcy Code (IBC) to address the huge debt pile of some of the biggest defaulters; it has drawn up two lists of 40 corporates with debt of around Rs 4 lakh crore which are in various stages of resolution in National Company Law Tribunals.

Covid-19 pandemic

As demand crashed, there were production cuts and job losses, and growth declined. Shaktikanta Das, the current Governor, and his team opted for an accommodative monetary policy. Repo rate, the main policy rate, was brought down to 4% to kickstart growth. However, the liberal policy led to a spike in inflation, forcing the RBI to raise rates by 250 basis points to 6.5% now.

However, the pandemic aided the RBI in boosting digitisation of payments. The launch of UPI revolutionised payments in the banking system.

Prime Minister Narendra Modi and RBI Governor Shaktikanta Das at a ceremony marking 90 years of the RBI in Mumbai on Monday. Maharashtra Governor Ramesh Bais and Chief Minister Eknath Shinde are also seen. PTI

- **Why in News:** The Reserve Bank of India (RBI) celebrates its 90th anniversary, prompting reflections on its evolution and challenges ahead.
- **Historical Evolution and Challenges:**
  - **Significant Legacy:** Established in 1935, the RBI is among the oldest central banks in developing countries, witnessing India's transition from **pre- to post-independence eras** and navigating various economic shifts.
  - **Management of Transitions**: Over its existence, the RBI has adeptly managed transitions from planned economies to market-oriented structures and now towards an increasingly digital economy, learning from past experiences and adapting to new challenges.
  - **Tackling Economic Disruptions**: Throughout its history, the RBI has confronted significant economic disruptions, including the global financial crisis, demonetization, and the COVID-19 pandemic, while also addressing issues like the banking sector's **bad loan crisis.**
- **Recent Achievements and Future Challenges:**
  - **Resolution of Bad Loans:** With proactive measures like the **Insolvency and Bankruptcy Code (IBC) framework** and capital infusion, the RBI has successfully tackled the problem of bad loans, reducing the **non-performing asset (NPA) ratio** significantly and fostering healthy credit growth.
  - **Adoption of Inflation Targeting:** The formal adoption of inflation targeting by the RBI has helped in keeping inflation in check and anchoring inflation expectations, despite occasional disruptions due to external factors like the pandemic.
  - **Technological Innovations**: Embracing technological advancements, the RBI has revolutionized the payments ecosystem through initiatives like the **Unified Payments Interface (UPI),** laying the groundwork for further digital transformation and innovation.

5. Kodaikanal Solar Observatory
GS 3 (Science and Tech)

How India's first solar observatory was set up in Kodaikanal 125 yrs ago

ANJALI MARAR
BENGALURU, APRIL 1

EXPLAINED SCIENCE

SINCE ANCIENT times, seafarers, mathematicians, astronomers, and physicists have studied the Sun. In 1792, the British East India Company established the Madras Observatory, a first-of-its-kind facility in this part of the world, where early solar and other astronomical observations in India began.

On April 1, 1889, it was merged with Kodaikanal's Solar Physics Observatory and it then became the Kodaikanal Solar Observatory (KoSo), which has been operational for 125 years.

Roots in Great Drought

Scanty rainfall over South India in 1875 triggered a terrible drought that led to the deaths of many millions of people across the Madras and Mysore Provinces between 1875 and 1877. Countries such as China, Egypt, and Morocco also suffered multi-year droughts during this period, and an associated global famine is estimated to have killed nearly 50 million people.

The Great Drought was due to multiple factors — solar activity, cool Pacific Ocean conditions followed by a record-breaking El Niño (1877-1878), strong Indian Ocean Dipole, and warm North Atlantic Ocean conditions.

Why Kodaikanal was chosen

Based on evidence that sunspot periodicity (a solar cycle of 11 years, when the Sun's activity can be at maxima or minima) was linked to the seasonal rainfall distribution over India, the Famine Inquiry Commission recommended that the Government of India undertake regular solar observations and establish a dedicated solar observatory in southern India. Thus, the idea for an Indian solar observatory was born.

Scotland-born Charles Michie Smith, who had briefly served as the Government Astronomer at the Madras Observatory, was asked to locate a site. Leh, Mussoorie, and Shimla in North India were rejected for being dusty and cloudy, with an unstable atmosphere. Regular solar observations from southern Indian hilltops were found to be better.

Smith surveyed Kodaikanal in the Palani hills and Kotagiri in the Nilgiris on parameters like rainfall, cloud cover, sky transparency, haze, atmospheric stability, humidity, fog, and mist. Kodaikanal was finally chosen as the ideal location.

In August 1893, the government of the Raj sanctioned the Solar Physics Observatory under the meteorological budget. In 1895, Lord Wenlock, then Governor of Madras, laid its foundation stone.

Under Smith, who later became the first director of the renamed KoSO, construction of the observatory picked up pace. By the end of 1900, the main observatory building and two adjacent domes had been built.

Why study the Sun

Being the primary source of energy, the Sun supports life on Earth. Any change on the solar surface or its periphery significantly impacts the Earth's atmosphere. Powerful solar storms and solar flares can potentially harm satellite-based operations, power grids, and navigation networks.

Expanding scope of study

Following the reorganisation of all Indian observatories, implemented by the Government of India on April 1, 1899, the Madras Observatory was merged with KoSO. Systematic solar observations commenced here on March 14, 1901.

The Bhavnagar Telescope, named after Maharaja of Bhavnagar, operated at KoSO during its nascent years. This 16-inch Newtonian (later Cassegrain) mobile telescope was imported from Dublin, Ireland, and first established at the Maharaja Takhtasinghji Observatory in Poona (now Pune) around 1888. However, when the Poona observatory closed down, it was sent to KoSO in 1912.

Initial KoSO solar observations included tracing bright lines from the Sun's atmospheric layers, measuring solar radiations, and the direct photography of the Sun in monochromatic lights of calcium and hydrogen (done to show specific features clearly).

Until the end of World War II in 1945, KoSO was dedicated to solar physics. Thereafter, it expanded its ambit to study cosmic rays, radio astronomy, ionospheric physics, etc. The continuous recording of the solar radio noise flux (an indicator of solar activity) commenced in 1952 and is considered India's earliest solar radio observations.

KoSO at age 125

After astrophysics was separated from the India Meteorological Department (IMD), KoSO was reconstituted into an autonomous institution named the Indian Institute of Astrophysics (IIA) on April 1, 1971.

From solar data recorded on basic photographic plates or films, KoSO boasts a huge digital repository containing 1.48 lakh digitised solar images. These include 33,500 white-light images (showing sunspots) and thousands of other images of the Sun recorded every day since the start of the 20th century. It is the only observatory offering high-resolution digitised images for such a long period.

Currently, it houses a spectrum of advanced instruments like a White light Active Region Monitor (WARM), with calcium and sodium filters to make full disc simultaneous observations of the photosphere and chromosphere layers of the Sun.

The KoSO's rich data repository could help reconstruct the Sun's past and link its behavioural changes to understand and predict its future impact.

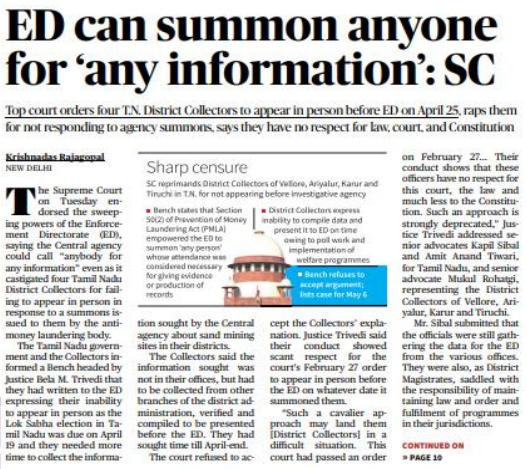
The Kodaikanal Solar Observatory. Wikimedia commons

- **Why in News:** The Kodaikanal Solar Observatory (KSO) turned 125 this year.
- **More on News:**
  - The Kodaikanal Solar Observatory (KSO) is a **solar observatory** owned and operated by the **Indian Institute of Astrophysics**, located in Kodaikanal, Tamil Nadu.
  - The Kodaikanal Solar Observatory is a pioneering institution for solar physics.
  - **Evershed Effect**: Its earliest claim to fame lies, in part, with the late **John Evershed** an English astronomer who first observed the **flow of gases** across sunspots from here in 1909. This phenomenon was christened the **Evershed Effect.**
  - The sun has been studied over the last few centuries for various reasons, including

- Solar eclipses
- Sunspots –cooler regions on the sun's surface that emit electromagnetic radiation
- Solar flares, which affect the earth's atmosphere

3rd April, 2024

1. Sweeping Powers of Directorate of Enforcement (ED)
GS 2 (Governance)



ED can summon anyone for 'any information': SC

Top court orders four T.N. District Collectors to appear in person before ED on April 25, raps them for not responding to agency summons, says they have no respect for law, court, and Constitution

Krishnadas Rajagopal
NEW DELHI

The Supreme Court on Tuesday endorsed the sweeping powers of the Enforcement Directorate (ED), saying the Central agency could call "anybody for any information" even as it castigated four Tamil Nadu District Collectors for failing to appear in person in response to a summons issued to them by the anti-money laundering body.

The Tamil Nadu government and the Collectors informed a Bench headed by Justice Bela M. Trivedi that they had written to the ED expressing their inability to appear in person as the Lok Sabha election in Tamil Nadu was due on April 19 and they needed more time to collect the information sought by the Central agency about sand mining sites in their districts.

The Collectors said the information sought was not in their offices, but had to be collected from other branches of the district administration, verified and compiled to be presented before the ED. They had sought time till April-end.

The court refused to accept the Collectors' explanation. Justice Trivedi said their conduct showed scant respect for the court's February 27 order to appear in person before the ED on whatever date it summoned them.

"Such a cavalier approach may land them [District Collectors] in a difficult situation. This court had passed an order on February 27... Their conduct shows that these officers have no respect for this court, the law and much less to the Constitution. Such an approach is strongly deprecated," Justice Trivedi addressed senior advocates Kapil Sibal and Amit Anand Tiwari, for Tamil Nadu, and senior advocate Mukul Rohatgi, representing the District Collectors of Vellore, Ariyalur, Karur and Tiruchi.

Mr. Sibal submitted that the officials were still gathering the data for the ED from the various offices. They were also, as District Magistrates, saddled with the responsibility of maintaining law and order and fulfilment of programmes in their jurisdictions.

CONTINUED ON » PAGE 10

Sharp censure

SC reprimands District Collectors of Vellore, Ariyalur, Karur and Tiruchi in T.N. for not appearing before investigative agency

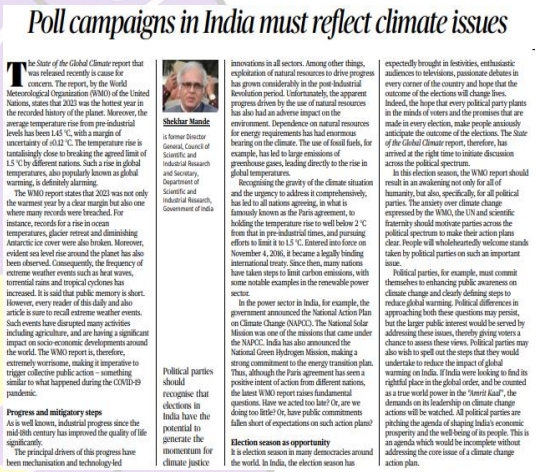
- Bench states that Section 50(2) of Prevention of Money Laundering Act (PMLA) empowered the ED to summon 'any person' whose attendance was considered necessary for giving evidence or production of records
- District Collectors express inability to compile data and present it to ED on time owing to poll work and implementation of welfare programmes
- Bench refuses to accept argument; lists case for May 6

- **Why in News:** The Supreme Court endorsed the **sweeping powers of the Directorate of Enforcement (ED),** saying the Central agency could call **"anybody for any information"** even as it castigated Tamil Nadu District Collectors for **failing to appear in person** in response to a summons issued to them by the anti-money laundering body.
- **Power and Function of ED:**
  - **Search and Seizure**- ED carries out search (property) and seizure (money/documents under Section 16 and Section 17 of the PMLA.
  - **In case of Arrest-**If the person is arrested, the ED gets **60 days** to file the prosecution complaint (charge sheet) as the punishment under PMLA doesn't go beyond **seven years.**
  - **In property attachment**- If no one is arrested and only the property is attached, then the prosecution complaint along with attachment order is to be submitted before the **adjudicating authority** within 60 days.
- **Power of ED for 'interrogation' and 'Custody':**
  - **Under Prevention of Money Laundering Act, 2002 (PMLA):** Following the recommendations of the Financial Action Task Force (FATF) India enacted PMLA.
  - The ED has been entrusted with the responsibility of executing the provisions of PMLA by conducting investigation to **trace the assets derived from proceeds of crime**, to provisionally attach the property and to ensure prosecution of the offenders and confiscation of the property by **the Special court**.
  - The ED carries out **search (property) and seizure (money/documents)** after it has decided that the money has been laundered, under Section 16 (power of survey) and Section 17 (search and seizure) of the PMLA.
  - On the basis of that, the authorities decide if arrest is needed as per Section 19 (power of arrest).
  - Under Section 50 of the PMLA, the ED can also directly carry out search and seizure without calling the person for questioning.
  - It is not necessary to summon the person first and then start with the search and seizure.
  - If the person is arrested, the ED gets 60 days to file the prosecution complaint (chargesheet) as the punishment under PMLA doesn't go beyond seven years.
  - If no one is arrested and only the property is attached, then the prosecution complaint along with attachment order is to be submitted before the adjudicating authority within 60 days.
- **Effectiveness of ED**
  - As of March 31, 2022, the ED's conviction rate was less than 0.5 per cent, with only 23 convictions in 5,422 PMLA cases. In comparison, the national conviction rate in India for offences of the Indian Penal Code was 57 per cent in 2021.
  - Petitions challenging PMLA provisions, particularly related to arrests and property attachments, have been presented in the Supreme Court.
- **Important Judgments:**
  - **Supreme Court's view**: In its "***Vijay Madanlal Choudhary v. Union of India***", the Supreme Court upheld various provisions of the PMLA which relate to the **powers of arrest, attachment, search, and seizure conferred upon the ED.**
    - The court was of the opinion that all the provisions under PMLA have a reasonable nexus with the objects sought to be achieved by the **Act to prevent money-laundering** effectively.

- In **P. Chidambaram v. Directorate of Enforcement (2019),** the Supreme Court rejected a prayer for anticipatory bail with respect to an offence of money laundering and proceeded to grant custody to the ED.
  - The court reasoned that in a case of money laundering which involves many stages of placement and layering of funds, a '**systematic and analysed'** investigation is required which would be frustrated if pre-arrest bail is granted.

- **Enforcement Directorate (ED):**
  - Directorate of Enforcement is **a Multi-Disciplinary Organization** mandated with the task of enforcing the provisions of **two special fiscal laws – Foreign Exchange Management Act, 1999 (FEMA) and Prevention of Money Laundering Act, 2002 (PMLA).**
  - Whenever any offence is registered by a local police station, which has generated proceeds of crime **over and above Rs 1 crore**, the ED steps in.
  - As per the Prevention of Money Laundering Act, the ED got its power to investigate under **Sections 48** (authorities under act) and **49** (appointment and powers of authorities and other officers).
  - If money has been laundered abroad, **the PMLA court** (constituted as per the Act) has the right to send a letter of rogatory **under Section 105** (reciprocal arrangements regarding processes) of the Code of Criminal Procedure.

2. Poll campaigns in India must reflect climate issues
GS 2 (Elections) GS 3 (Environment)



Poll campaigns in India must reflect climate issues

The *State of the Global Climate* report that was released recently is cause for concern. The report, by the World Meteorological Organization (WMO) of the United Nations, states that 2023 was the hottest year in the recorded history of the planet. Moreover, the average temperature rise from pre-industrial levels has been 1.45 °C, with a margin of uncertainty of ±0.12 °C. The temperature rise is tantalisingly close to breaking the agreed limit of 1.5 °C by different nations. Such a rise in global temperatures, also popularly known as global warming, is definitely alarming.

The WMO report states that 2023 was not only the warmest year by a clear margin but also one where many records were breached. For instance, records for a rise in ocean temperatures, glacier retreat and diminishing Antarctic ice cover were also broken. Moreover, evident sea level rise around the planet has also been observed. Consequently, the frequency of extreme weather events such as heat waves, torrential rains and tropical cyclones has increased. It is said that public memory is short. However, every reader of this daily and also article is sure to recall extreme weather events. Such events have disrupted many activities including agriculture, and are having a significant impact on socio-economic developments around the world. The WMO report is, therefore, extremely worrisome, making it imperative to trigger collective public action – something similar to what happened during the COVID-19 pandemic.

Progress and mitigatory steps

As is well known, industrial progress since the mid-18th century has improved the quality of life significantly.

The principal drivers of this progress have been mechanisation and technology-led innovations in all sectors. Among other things, exploitation of natural resources to drive progress has grown considerably in the post-Industrial Revolution period. Unfortunately, the apparent progress driven by the use of natural resources has also had an adverse impact on the environment. Dependence on natural resources for energy requirements has had enormous bearing on the climate. The use of fossil fuels, for example, has led to large emissions of greenhouse gases, leading directly to the rise in global temperatures.

Recognising the gravity of the climate situation and the urgency to address it comprehensively, has led to all nations agreeing, in what is famously known as the Paris agreement, to holding the temperature rise to well below 2 °C from that in pre-industrial times, and pursuing efforts to limit it to 1.5 °C. Entered into force on November 4, 2016, it became a legally binding international treaty. Since then, many nations have taken steps to limit carbon emissions, with some notable examples in the renewable power sector.

In the power sector in India, for example, the government announced the National Action Plan on Climate Change (NAPCC). The National Solar Mission was one of the missions that came under the NAPCC. India has also announced the National Green Hydrogen Mission, making a strong commitment to the energy transition plan. Thus, although the Paris agreement has seen a positive intent of action from different nations, the latest WMO report raises fundamental questions. Have we acted too late? Or, are we doing too little? Or, have public commitments fallen short of expectations on such action plans?

Election season as an opportunity

It is election season in many democracies around the world. In India, the election season has expectedly brought in festivities, enthusiastic audiences to televisions, passionate debates in every corner of the country and hope that the outcome of the elections will change lives. Indeed, the hope that every political party plants in the minds of voters and the promises that are made in every election, make people anxiously anticipate the outcome of the elections. The *State of the Global Climate* report, therefore, has arrived at the right time to initiate discussion across the political spectrum.

In this election season, the WMO report should result in an awakening not only for all of humanity, but also, specifically, for all political parties. The anxiety over climate change expressed by the WMO, the UN and scientific fraternity should motivate parties across the political spectrum to make their action plans clear. People will wholeheartedly welcome stands taken by political parties on such an important issue.

Political parties, for example, must commit themselves to enhancing public awareness on climate change and clearly defining steps to reduce global warming. Political differences in approaching both these questions may persist, but the larger public interest would be served by addressing these issues, thereby giving voters a chance to assess these views. Political parties may also wish to spell out the steps that they would undertake to reduce the impact of global warming on India. If India were looking to find its rightful place in the global order, and be counted as a true world power in the *Vasudhaiva Kutumbakam*, the demands on its leadership on climate change actions will be watched. All political parties are pitching the agenda of shaping India's economic prosperity and the well-being of its people. This is an agenda which would be incomplete without addressing the core issue of a climate change action plan.

Shekhar Mande

is former Director General, Council of Scientific and Industrial Research and Secretary, Department of Scientific and Industrial Research, Government of India

Political parties should recognise that elections in India have the potential to generate the momentum for climate justice

- **Why in News:** The recently released **State of the Global Climate report** by the **World Meteorological Organization (WMO)** highlights **2023 as the hottest year** in recorded history, raising concerns over the alarming rise in global temperatures and its adverse impacts.
- **Temperature Records and Environmental Impacts:**
  - **Worrisome findings:** The WMO report confirms 2023 as the warmest year on record, accompanied by numerous records being broken in areas like ocean temperatures, glacier retreat, and diminishing Antarctic ice cover.
  - **Rising sea levels and increased frequency of extreme weather** events like heat waves, torrential rains, and tropical cyclones further underscore the severity of climate change's impacts.
  - **Impact on socio-economic activities:** These events disrupt various socio-economic activities, including agriculture, posing significant challenges to global development.
- **Election Season as an Opportunity:**
  - **Discussion:** Amidst election season in many democracies, including India, the WMO report serves as a timely catalyst to initiate discussions on climate change across the political spectrum.
  - **Public awareness:** Political parties have the opportunity to commit to enhancing public awareness on climate change and outlining concrete steps to mitigate global warming.
  - **Integral element:** Addressing climate change becomes integral to India's pursuit of global leadership and economic prosperity, and political parties should incorporate climate action plans into their election agendas.

3. India rejects China's senseless Arunachal act
GS 2 (International Relations)

Arunachal an integral part of India: Centre

Press Trust of India
NEW DELHI

India on Tuesday outrightly rejected China renaming some places in Arunachal Pradesh as "senseless", and asserted that assigning "invented" names does not alter the reality that the State "is, has been, and will always be" an integral part of India.

"China has persisted with its senseless attempts to rename places in the Indian State of Arunachal Pradesh. We firmly reject such attempts," External Affairs Ministry spokesperson Randhir Jaiswal said.

"Assigning invented names will not alter the reality that Arunachal Pradesh is, has been, and will always be an integral and inalienable part of India," he said in response to media queries on the matter. In April last year, Beijing had released a third list of standardised names.

- **Why in News:**
  - India rejected as senseless China renaming of some places in Arunachal Pradesh. It said that assigning invented names does not alter the reality that the state "is, has been, and will always be" an integral part of India.
  - India's sharp response came after the Chinese government announced names for 30 more places in Arunachal Pradesh which it claims as the southern part of Tibet.
- **Border Dispute in Eastern Sector of LAC**

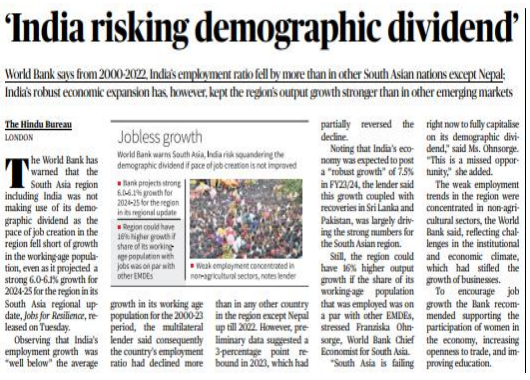
- **McMahon Line**
  - The disputed boundary in the Eastern Sector of the India-China border is over the McMahon Line.
  - Representatives of China, India and Tibet in 1913-14 met in Shimla to settle the boundary between Tibet and India, and Tibet and China.
  - During the Shimla conference, Sir Henry McMahon, the then foreign secretary of British India, drew up the 550-mile (890 km) McMahon Line as the border between British India and Tibet.
    - ❖ This line was drawn from the eastern border of Bhutan to the Isu Razi pass on the China-Myanmar border.

- **The dispute between India and China is eastern sector**
  - The McMahon line moved **British control substantially northwards**. This agreement ceded Tawang and other Tibetan areas to the imperial British Empire.
  - Though the Chinese representatives at the meeting initialled the agreement, **they subsequently refused to accept it.**
  - Subsequently, the Chinese government stated that it does not recognize the "illegal" McMahon Line.
- China accuses India of occupying areas in Arunachal, which it calls part of Southern Tibet.
  - China claims territory to the south of the McMahon Line, lying in Arunachal Pradesh.
- China also bases its claims on the historical ties that have existed between the monasteries in Tawang and Lhasa.

- **Indo-China 1962 war and Arunachal Pradesh**
  - The Arunachal Pradesh border, that China claims to be its own territory, is the largest disputed area, covering around 90000 sq. km.
  - During the 1962 war, the **People's Liberation Army occupied it** but they announced a unilateral ceasefire and withdrew respecting the McMahon Line.
  - However, it has continued to assert its claim over the territory. Nowadays, almost the whole of Arunachal is claimed by China.
- **Renaming of places by China**
  - Recently, in March 2024, the Chinese Ministry of Civil Affairs released the fourth list of standardised geographical names in Arunachal Pradesh.
    - In April 2023, Beijing had released the third list of standardised names of 11 places in Arunachal Pradesh.
    - The first batch of the standardised names of six places in Arunachal Pradesh was released in 2017 while the second batch of 15 places was issued in 2021
- **Why is China giving names to places that are in India?**
  - China claims some 90,000 sq km of Arunachal Pradesh as its territory.
  - It calls the area Zangnan in the Chinese language and makes repeated references to "South Tibet".
    - Chinese maps show Arunachal Pradesh as part of China, and sometimes parenthetically refer to it as "so-called Arunachal Pradesh".
- **What does China seek to gain from making these claims?**
  - It is a part of the Chinese strategy to **assert its territorial claims over Indian territory.**
    - As part of this strategy, China routinely issues statements of outrage whenever an Indian dignitary visits Arunachal Pradesh.
      - It did so when the then Vice President Venkaiah Naidu went there to address the state Assembly in October 2021
      - The first batch of renaming in 2017 had come days after the Dalai Lama visited Arunachal Pradesh.
  - Also, Chinese officials claim that the standardisation was necessary since all names used in southern Tibet were inherited through word-of-mouth for generations by minority ethnic groups.
  - Hence, these names reflect that China's proposal on the sovereignty claim of the region has a **prominent historical, cultural, administrative and jurisdictional**
  - **Laying aggressive claims to territories on the basis of alleged historical injustices done to China is a part of Beijing's foreign policy playbook.**
    - The claim on Taiwan is one such example. Also, consistent efforts are being made by China to change the facts on the ground in several disputed islands in the South China Sea.

4. <u>India risks 'squandering' demographic dividend: World Bank</u>
<u>GS 3 (Economy)</u>

- **Why in News:** The **World Bank's** South Asia regional update, **"Jobs for Resilience,"** highlights concerns regarding the region's utilization of its demographic dividend, particularly focusing on India's employment growth.
- **Observations on Employment Trends**
  - **Slow Job Creation:** The South Asia region, including India, is not effectively leveraging its demographic dividend, as job creation lags behind the growth in the **working-age population.**
  - **Unemployment Rate:** India, in particular, has witnessed employment growth significantly below the **average growth** in its working-age population from 2000 to 2023, leading to a **decline in the employment ratio.**



'India risking demographic dividend'

World Bank says from 2000-2022, India's employment ratio fell by more than in other South Asian nations except Nepal; India's robust economic expansion has, however, kept the region's output growth stronger than in other emerging markets

The Hindu Bureau
LONDON

The World Bank has warned that the South Asia region including India was not making use of its demographic dividend as the pace of job creation in the region fell short of growth in the working-age population, even as it projected a strong 6.0-6.1% growth for 2024-25 for the region in its South Asia regional update, *Jobs for Resilience*, released on Tuesday.

Observing that India's employment growth was "well below" the average growth in its working age population for the 2000-23 period, the multilateral lender said consequently the country's employment ratio had declined more than in any other country in the region except Nepal up till 2022. However, preliminary data suggested a 3-percentage point rebound in 2023, which had partially reversed the decline.

Noting that India's economy was expected to post a "robust growth" of 7.5% in FY23/24, the lender said this growth coupled with recoveries in Sri Lanka and Pakistan, was largely driving the strong numbers for the South Asian region.

Still, the region could have 16% higher output growth if the share of its working-age population that was employed was on a par with other EMDEs, stressed Franziska Ohnsorge, World Bank Chief Economist for South Asia.

"South Asia is failing right now to fully capitalise on its demographic dividend," said Ms. Ohnsorge. "This is a missed opportunity," she added.

The weak employment trends in the region were concentrated in non-agricultural sectors, the World Bank said, reflecting challenges in the institutional and economic climate, which had stifled the growth of businesses.

To encourage job growth the Bank recommended supporting the participation of women in the economy, increasing openness to trade, and improving education.

Jobless growth

World Bank warns South Asia, India risk squandering the demographic dividend if pace of job creation is not improved

- Bank projects strong 6.0-6.1% growth for 2024-25 for the region in its regional update
- Region could have 16% higher growth if share of its working-age population with jobs was on par with other EMDEs
- Weak employment concentrated in non-agricultural sectors, notes lender

- ❖ The youth unemployment rate was 45.4 per cent in 2023, according to the Centre for Monitoring Indian Economy, a think-tank.
- **Female employment ratios** in many south Asian countries, including India, are among the lowest in the world, at less than 40 per cent.

- **Untapped benefits from the demographic dividend**
  - **Economic growth:** Better economic growth is brought about by increased economic activities due to a higher working-age population and lower dependent population thereby increasing labor force along with rising in women workforce.
  - **Policy Framing:** Effective policy making by strictly implementing schemes and programs for the benefit of the people.
  - **Rise in employment:** A higher employment-seeking population will lead to the rapid increase of industrialization and urbanization.
  - **Increased workforce:** The working-age population rising to 65% will increase the workforce.
  - **Swelling labour force:** India's labour force is swelling as its baby boomers reach working age. It would boost India's growth.
  - **Effective diversion of resources: I**ndia's population has the potential to divert resources from spending on irrelevant things to investing in physical and human infrastructure.
  - **Rise in women's workforce:** There is a rise in women's workforce activity that naturally accompanies a decline in fertility.
  - **Easy accumulation:** The fourth is that working ages also happen to be the prime years for savings, which is key to the accumulation of capital and technological innovation.
- **Economic Growth and Employment**
  - Despite challenges in employment, India's economy is expected to exhibit robust growth of 7.5% in FY23/24, contributing to the overall strong performance of the South Asian region.
  - However, the region could achieve even higher output growth if the employment rate matched that of other **Emerging Market and Developing Economies (EMDEs).**
- **Approach to seize Demographic Advantage:**
  - **Upgrading Education Standards:** Irrespective of rural or urban settings, the public school system must incorporate skilling, training, and vocational education in line with market demand.
  - **Fulfilling Health-Related Requirements**: Increasing government spending on health, education, and other social sectors will be crucial to realizing the potential dividend from India's young demography.
  - **Inter-Sectoral Collaborations:**Moving forward towards safeguarding the futures of adolescents, it is imperative to put in place mechanisms for better inter-sectoral collaboration.
  - **Bridging Gender Gaps in Workforce**: New skills and opportunities for women and girls befitting their participation in a 3 trillion-dollar economy are urgently needed. This can be done by:
    - Legally compulsory gender budgeting to analyze gender-disaggregated data and its impact on policies
    - Increasing childcare benefits
    - Boosting tax incentives for part-time work
  - **Federal Approach for Diverse States**: Inter-ministerial coordination for strategic planning, investment, monitoring, and course correction should be an important feature of this governance arrangement.

5. <u>India's new Indian EV policy</u>
<u>GS 2 (Governance)</u>

- **Why in News:** India's new EV policy, announced recently, allows imports from any country, including China.
- **The new Indian EV policy**
  - **Investment:** The updated policy mandates automakers to invest a minimum of USD 500 million in India within three years, establishing local EV manufacturing facilities with 25% domestically sourced components.

'India's new EV policy allows imports from any country, including China'

Reuters
NEW DELHI

India has no restrictions on the import of electric vehicles from any country, including China, under a new EV policy, a senior government official told a TV channel on Tuesday. Last month, India announced lowering import taxes on certain electric vehicles produced by carmakers who commit to invest at least $500 million and start domestic manufacturing within three years.

- **Reduced duty:** Eligible carmakers can import up to 8,000 EVs annually with a 15% reduced import duty for vehicles priced at USD 35,000 and above. This aligns with the **Indian government's "Atmanirbhar Bharat" initiative**, fostering self-reliance and technological advancement.
- **Domestic Value Addition (DVA):** The policy lays emphasis on **Domestic Value Addition (DVA),** aiming for a minimum of 50% DVA within five years.
    - This reduces reliance on imports, stimulates job growth and promotes technological innovation in the Indian EV sector, supporting indigenous manufacturing.
- **Accountability:** Additionally, the policy ensures accountability by requiring companies to back investment pledges with bank guarantees.
- **Non-compliance** with DVA and investment criteria will lead to enforcement of guarantees, enhancing transparency and accountability.

- **Implications of the strategy:**
    - **Attracting global manufacturers:** The Indian government aims to create policies that attract all EV manufacturers globally to establish operations in India, leveraging the country's expanding economy.
    - **Ripple effect for economy:** The goal is not just to attract these big players but to leverage their presence and create a ripple effect, fostering a network of smaller, specialized domestic suppliers for a robust and self-sustaining industrial ecosystem.
    - **Interest of domestic manufacturers:** Domestic players such as Tata Motors and Mahindra & Mahindra had expressed concerns about increased competition from globally popular EVs, especially China.
- **India's EV Market**
    - India's light vehicle market grew by 26% in 2023 to 4.4 million units, up from 3.5 million in 2022.
    - **Electric vehicles (EVs)** accounted for 2.2% of the Indian market share, with 96,000 EVs sold in 2023.
    - The market grew by 92% year-on-year, aiming for 30% by 2030.

6. 'Kallakkadal' strikes coastal Kerala
Recent events of importance

- **Why in News:** High sea waves which are also known as swell waves, have flooded numerous houses in the Kerala's coastal areas. This flooding caused by the swell waves is called swell surge or Kallakkadal in Malayalam.
- **What is Kallakkadal?**
    - Kallakkadal is a **geographical phenomenon** which causes **flooding through high waves in the south-west coast of India,** predominantly during the pre-monsoon season which is from April to May.

What is Kallakkadal, which has flooded houses in Kerala's coastal areas?

SHAJU PHILIP
THIRUVANANTHAPURAM, APRIL 2

HUNDREDS OF houses have been flooded in several coastal areas of Kerala due to high sea waves, also known as swell waves, since Sunday. The worst affected regions include Alappuzha, Kollam, and Thiruvananthapuram districts. Authorities have opened relief camps for the affected local communities.

Such flooding events are called swell surge or Kallakkadal in Malayalam. Here is a look at the phenomenon, why it happens, and how it is different from a tsunami.

What is Kallakkadal?

Kallakkadal is essentially coastal flooding during the pre-monsoon (April-May) season by swell waves on the southwest coast of India, according to a paper, Teleconnection between the North Indian Ocean high swell events and meteorological conditions over the Southern Indian Ocean, which was published in the journal ICES in 2016. The study was authored by P C Nimya, S Vishnu, B Praveen Kumar, T M Balakrishnan Nair, and B Rohith — all from the Indian National Centre for Ocean Information Services, Hyderabad.

The term Kallakkadal, used by local fishermen, is a combination of two Malayalam words, including Kollam and Kadal. "Kollam means thief and Kadal means sea. In spoken language, these words were combined and pronounced as Kallakkadal, meaning ocean that arrives as a thief," the study said.

Houses damaged due to a Kallakkadal event in Kollam on Tuesday. AM

In 2012, the term was formally approved by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

What causes Kallakkadal?

Kallakkadal is caused by waves that are formed by an ocean swell, hence the name swell surge. Ocean swells occur not due to the local winds, but rather due to distant storms like hurricanes, or even long periods of fierce gale winds. During such storms, huge energy transfer takes place from the air into the water, leading to the formation of very high waves. Such waves can travel thousands of kilometres from the storm's centre until they strike shore.

Usually, Kallakkadal is a consequence of the strong winds in the southern part of the Indian Ocean, where an ocean swell is generated, and the waves then travel north to reach the coast in two or three days.

The latest instance took place after a low atmospheric pressure system moved over the region around March 25 from the South Atlantic Ocean — 10,000 kilometres off the Indian coast. The arrival of the pressure system resulted in strong winds, which led to the formation of swell waves of up to 11 metres at height. These waves have been hitting the Kerala coast and Lakshadweep since Sunday.

Kallakkadal occurs without precursors or any kind of local wind activity and as a result, it has been very difficult for the coastal population to get an advance warning. However, early warning systems like the Swell Surge Forecast System — launched by the Indian National Centre for Ocean Information Services (INCOIS) in 2020 — gives forewarning seven days in advance.

Why is Kallakkadal different from tsunami?

Kallakkadal came under the spotlight after the 2004 tsunami that killed more than 10,000 people. However, Kallakkadal is often mistaken to be a tsunami, which is a series of enormous waves created by an underwater disturbance usually associated with earthquakes occurring below or near the ocean.

What is the forecast?

The swell surge is likely to continue impacting Kerala and other western coast regions of the country for the next two days before they gradually weaken.

INCOIS has stated high waves will move to the Tamil Nadu coast on Tuesday night. It has alerted people in coastal areas vulnerable to sea erosion to take precautionary steps and ensure the safety of fishing vessels.

    - The term Kallakkadal was officially approved by the **United Nations Educational, Scientific and Cultural Organization (UNESCO).**
    - Kallakkadal is caused by swell waves which emerge due to ocean swell which is mostly caused by storms such as hurricanes or gale winds.
    - During these fierce winds, a **massive energy transfer** takes place from the air into water.
    - This then leads to formation of **extremely high waves** that can roll up to thousands of kilometres.

4th April, 2024

1. Turning the spotlight on the urban poor
GS 2 (Social Issues)

Turning the spotlight on the urban poor

The India Employment Report (IER) 2024 by the Institute for Human Development and International Labour Organization poses questions on the trickle-down effect of benefits to the working class in the backdrop of a 5.4% average real economic growth, from 2015-16 to 2022-23. It also shows a divergent trend between rural and urban areas in terms of employment and income. It demonstrates a relatively higher unemployment rate in urban areas, at 4.8% in 2000 over the 1.5% in rural areas. However, average monthly earnings are higher by 76% for self-employed, 44% for regular employed and 22% for casual labour in urban areas in 2022. The coexistence of higher unemployment and wages requires further investigation to understand its implications for the urban poor. This article looks at the dynamics of employment and wages in pockets of deep urban poverty, such as slums, and juxtaposes these with the findings of the IER 2024.

The higher income in urban areas and a better life have prompted rural-urban migration in the past. As in the IER 2024, although overall migration has increased, the migration of males has declined by 1.2% during 2000-08, and further marginally in 2021. This implies that migration for economic mobility is losing its sheen. Rural poor households migrate to slums instead of formal settlements. Hence, an analysis of income and employment trends of slum dwellers would reveal the prospects of economic mobility and decent work for the poor in urban India.

Findings of survey in Kolkata

This writer and a team conducted a survey in 37 slums across different parts of Kolkata in 2012. These slums were again surveyed in 2022-23. However, we could track only 29 slums as the other slums had either been redeveloped or evicted. We surveyed 513 slum households in 2012 and 396 in 2021-22. To get the overall trends from 2012, we collected data on income and employment in slums in 2019, the pre-COVID-19 year, to avoid the COVID-19-affected years of 2019-22, for comparison.

The major occupations in slums in Kolkata have remained the same over the decade, with a fourth of the working population taking on unskilled labour. It is the most stable and significant occupation in slums. The IER 2024 also finds that a fourth of workers in India were engaged in unskilled work during this period. Other major occupations in slums were skilled or semi-skilled labour work, and people as employees in private organisations, and owning petty businesses or small shops. Unlike unskilled labour, the share of employment in skilled and semi-skilled labour was reduced by 6%, and in private organisations by 3% between 2012-19.

On the other hand, employment has increased by 9% in petty businesses or small shops. Surprisingly, the share of other self-employed has also declined by 3%. Among occupations that were less popular earlier but which gained momentum in the last 10 years are truck driving and cleaning, by 5%, and construction and related work, by 4%. The people employed in construction and related-work were minuscule in 2012.

Income trends

The average monthly income in 2012 was around ₹4,900. It decreased by 5% at constant prices (2012) in 2019. Income was the highest for government employees in the slums in both periods. However, at constant prices in 2012, their monthly income decreased by 5% in 2019. On the other hand, the monthly income of domestic servants and unskilled workers has remained the lowest. The highest decline in real income is observed for construction and related work (51%), followed by petty business or small shop (32%) and government service (32%) in 2019 as compared to 2012.

The decline in income and the rise in engagement with petty business or small shops and construction or related work indicates a need for gainful employment options. Medium to large shop owners have also lost real income by 26%. The popularity of labour work can be explained by the rise in the real income of unskilled labour by 33%. Income of skilled or semi-skilled labour increased by 12% but a lesser proportion are employed in 2019 compared to 2012. It implies the reduction of the availability of skilled or semi-skilled labour work.

The IER 2024 illustrates similar trends of changes in employment and wages. The share of self-employed (including business) has increased from 38.7% to 41.3% for males and from 34.5% to 44.8% for females in urban areas between 2000-19. However, real monthly wages (at 2012 prices) declined for self-employed from ₹7,017 to ₹6,843 and for regular workers from ₹12,100 to ₹11,155 but increased for casual workers (including labour) from ₹3,701 to ₹4,364 between 2012-19. This implies that the economic transition observed by the IER 2024 is a reflection of the transformation happening in urban slums.

Interestingly, the fall in slum income of the highest income earners, government servants, is accompanied by a doubling of the real income of the lowest income earners, domestic servants. This implies that there was a general downfall in income, along with a reduction in the differences in income from 2012-19. Other statistical measures also show a fall in inequality in slums.

The gender composition within different occupation categories in Kolkata shows that overall, the percentage of women in the workforce has declined by 3% in 2021-22 compared to 2012. However, the IER 2024 shows a 1.6% increase in women's workforce participation during 2012 and 2022. This may be due to an increase in female workforce participation in non-slum areas rather than in slum areas.

Rise in casual work

A comparison of the IER 2024 and our survey data shows that the rise of casual work, especially labour work, has happened due to increasing wages. However, casual work offers a sub-standard work condition without any social security. On the contrary, self-employment such as businesses, is rising but without a commensurate rise in income. It projects a groundswell of low-earning petty businesspeople in slums. Slum women could not march with the overall rising trends of female workforce participation in urban areas. With the reduction of inequality, income also fell leading the urban poor to deeper poverty. Hence, the higher income in urban areas compared to rural India does not delineate the urban poor's economic mobility and quality of work. Hence, more public support is required in urban areas for access to cheap food and gainful employment. It also explains the declining male migration during 2000-08. As the Gross Value Added in agriculture, forestry and fishing grew at the slowest rate (3.03%) compared to other sectors during 2000-19, along with a negative employment growth (1.05%), focusing more on rural non-farm would be imperative.

Indranil De is Professor, Institute of Rural Management Anand

An analysis of income and employment trends of slum dwellers points to the prospects of economic mobility and decent work for the poor in urban India

The views expressed are personal

- **Why in News:** The India Employment Report (IER) 2024, released by the Institute for Human Development and International Labour Organization, sheds light on the disparity in employment and income between rural and urban areas amidst a 5.4% average real economic growth from 2015-16 to 2022-23.
- **Findings and Trends:**
    - **Trend Analysis:** The IER 2024 reveals a divergent trend between rural and urban areas, with a relatively higher unemployment rate observed in urban areas, contrasting with higher average monthly earnings for self-employed, regular employed, and casual labor in urban regions.
    - **Migration Patterns:** Despite overall migration increasing, there's been a decline in male migration for economic mobility, particularly towards urban areas. Instead, rural poor households tend to migrate to slums, highlighting the need to analyze income and employment trends among slum dwellers.
    - **Survey Results:** A survey conducted in Kolkata's slums between 2012 and 2022-23 showcased stable major occupations like unskilled labor, alongside notable shifts such as a rise in petty businesses and construction work. Income trends depict varied fluctuations across different employment categories, suggesting evolving economic dynamics in urban slums.
- **Implications and Recommendations:**
    - **Need for Gainful Employment:** The decline in income across certain sectors underscores the necessity for viable employment options, particularly for medium to large shop owners who have witnessed a decrease in real income.
    - **Gender Composition and Casual Work:** While casual labor has seen a rise due to increasing wages, it lacks adequate work conditions and social security. The decline in inequality alongside falling income signals deeper poverty among the urban poor, necessitating enhanced public support for accessible employment and basic necessities.
    - **Policy Focus:** Focusing on rural non-farm sectors and providing support for gainful employment and affordable essentials in urban areas becomes imperative to address the challenges of economic mobility and quality of work for the urban poor highlighted in the IER 2024.

2. Systems science for a better future
GS 2 (Governance)

Systems science for a better future

The Pew Research Center surveyed the citizens of many countries in 2023 to gauge how many prefer authoritarian rulers to multi-party democracy. The numbers choosing dictators will dismay democrats. In the Global South: India (85%), Indonesia (77%), South Africa (66%) and Brazil (57%). In the West: the United Kingdom (37%) and the United States (32%), which are significant numbers too. China and Russia were not surveyed.

Citizens of democratic countries have lost trust in their governments' economic policies. Average incomes may be rising but the very rich are becoming much richer, faster. Large corporations and financial institutions are compelling governments to set the rules of the game in their favour by reducing taxes for them, emasculating labour institutions, and exploiting the natural environment for their profit.

Moreover, the growth of the global economy and human population has brought humanity to the brink. Scientists predict that the overuse of fossil energy for fuelling modern consumptive lifestyles will make life on earth impossible beyond this century. Water, fundamental for life, is also running out. India is among the most water stressed large countries in the world.

India has 17.5% of the world's population living on only 2.4% of the world's land. In 2014, India ranked 155 out of 178 countries in the global Environment Performance Index, meanwhile, in 2022, India slipped to the very bottom – 180 out of 180. India, also the world's most populous country, has an additional problem, *viz.* to increase the incomes of its citizens faster. While economists chase GDP targets, inequality is increasing and we are spoiling the earth which supports the economy and sustains our lives.

The science of systems

Keeping the forest in sight, do not get lost in the trees, is good advice. Many things must be known, and their interconnections mapped, to understand how the world works. All sciences – social, medical, and natural – are fragmented into narrow silos. Locked within their echo-chambers, scientists in different disciplines do not learn from each other. As the sciences advance, experts know more but about less. No one sees the whole. Politics and economics are integral parts of complex social systems. It is moot whether the weakening of democratic institutions empowers large capitalist institutions or whether capitalist institutions corrode democracy. What has broken down is the comprehension of complex systems with diverse forces, and human egos, within them.

Economics emerged as a distinct science out of philosophy and the humanities in the early 20th century. Modern economists do not understand how societies function. By the century's end, free market fundamentalism had become an ideology. Leave it to the "invisible hand" of the market because it knows best, these economists say. Behind the invisible hand is the power of capital. The rights of capital, and its freedom to roam the world across national boundaries and make more profits, trump the rights of human beings moving across borders searching for safer lives.

Systems' knowledge has been devalued by specialisation. Heart specialists can keep the heart alive with amazing technologies. Brain specialists delve deeper into the biology of the brain. They lose sight of the whole human being. Climate scientists research how to remove carbon from the atmosphere, but the effects of their solutions on the livelihoods of citizens are not in their science's scope. High-tech solutions can improve parts of complex systems while reducing overall health and well-being.

Any intelligence within a system cannot comprehend the system that produced it. Modern science gave human beings hubris that they could conquer "unruly nature" as Francis Bacon declared at the emergence of the European Enlightenment. The arrogant scientific man thought he could change the system that had created him. His scientific fixes of the world, and scientific improvements of his own genes, are threatening humanity's existence.

In times of uncertainty, people yearn for certainty. They follow godmen, dictators, and wealthy technologists because these people claim to know the truth and have the power to apply it. When economists and scientists with their incomplete understanding of the world become the guides of leaders and steer social and economic policies, the losers are both common people and the natural environment that sustains everyone's lives. Recalling the idea of the ancient Greek poet Archilochus – "A fox knows many things, but a hedgehog knows one big thing" – philosopher Isaiah Berlin divided thinkers into "foxes" and "hedgehogs". Great writers, like Leo Tolstoy, who combined many perspectives in their histories were both hedgehogs and foxes, Berlin said. They understood the fundamental nature of existence and the limits of any rational scientific approach to it.

Rather than specialised sciences focused on parts, a higher-level science is required: a science of holistic, self-adaptive systems which include human egos in them. Complex self-adaptive systems have three components: systems being, systems thinking, and systems acting. Systems being requires humility. Systems thinking requires the mind of the "hedgehog-fox" to see patterns among the details.

Enterprises for cooperation

Systems acting to improve the world for everyone must be driven by organisations whose purpose is cooperation, not by organisations driven by competition. The purpose of business corporations and armies is to make more profit and gain more power, whereas the purpose of families is to improve the well-being of their members. Family members have natural differences in sex and generational abilities. Yet, they cooperate with each other for the well-being of all.

Women's contributions to the well-being of families and societies are under-valued in money terms and not counted in GDP. Economists say that few Indian women are in the labour force, whereas, for centuries, women have been working harder than men, producing social and economic value for their families and communities.

The world needs more caring, less competition. Women are natural family builders and systems facilitators whereas men are brought up to compete. Rather than men teaching women to think like men and compete with them in hierarchies of the formal labour force, men must learn the caring ways of women to make the world better for everyone.

Arun Maira is the author of 'Shaping the Future: A Guide for Systems Leaders'

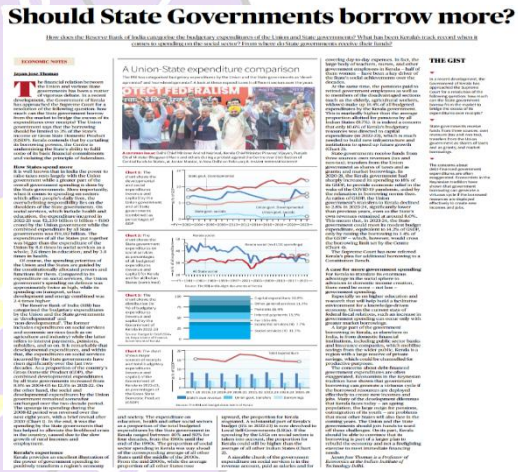
Rather than specialised sciences focused on parts, a higher-level science is required – one of holistic, self-adaptive systems

- **Why in News:** The **Pew Research Center's survey** in 2023 on **citizens' preferences** for **authoritarian rulers versus multi-party democracy** reveals concerning trends across various countries, including significant support for dictatorial leadership in both the **Global South and the West.**
- **Survey Findings:**
    - **Preference for Authoritarianism**: **The survey highlights substantial support for authoritarian** rulers in countries like **India, Indonesia, South Africa, and Brazil** in the **Global South**, with a significant percentage of citizens favoring dictators over multi-party democracy. Surprisingly, even in Western democracies like the **United Kingdom and the United States**, a notable proportion of respondents expressed preference for authoritarian leadership.
    - **Economic Discontent**: Citizens' waning trust in their governments' economic policies is evident, with growing income inequality and the concentration of wealth among the very rich. Large corporations and financial institutions wield considerable influence, shaping government policies to favor their interests, which exacerbates economic disparities and environmental exploitation.

- **Environmental Concerns**: The survey underscores the looming environmental crisis, exacerbated by rapid global economic growth and population expansion. Scientists warn of the unsustainable use of fossil energy and the depletion of vital resources like water, particularly in countries like India, which faces severe water scarcity despite its significant population share.

- **Challenges and Recommendations:**
  - **Fragmented Sciences**: The fragmentation of sciences into narrow silos impedes holistic understanding of complex systems, including **social, economic, and environmental dynamics**. A lack of **interdisciplinary collaboration** hinders comprehensive solutions to multifaceted challenges, such as the interplay between democracy, capitalism, and environmental sustainability.
  - **Economic Ideologies**: The rise of free market fundamentalism has entrenched economic ideologies that prioritize capital interests over human welfare and environmental conservation. Narrow economic perspectives fail to address systemic inequalities and environmental degradation, perpetuating unsustainable growth models.
  - **Need for Holistic Approaches**: Addressing contemporary global challenges requires a paradigm shift towards holistic, systems-based approaches that integrate diverse perspectives and promote cooperation over competition. Embracing a science of self-adaptive systems and fostering organizations driven by cooperation rather than competition can facilitate sustainable solutions to complex societal and environmental issues.

3. State's Borrowing Limits and Challenges
GS 3 (Economy)


Should State Governments borrow more?

How does the Reserve Bank of India categorise the budgetary expenditures of the Union and State governments? What has been Kerala's track record when it comes to spending on the social sector? How is/how do State governments resolve their funds?

ECONOMIC NOTES

A Union-State expenditure comparison

THE GIST

- **Why in News:** Kerala recently approached the Supreme Court regarding the permissible borrowing limits for State governments. It challenges the Centre's stance, which restricts the State's borrowing capacity to 3% of its income or **Gross State Domestic Product (GSDP).** Kerala argues that such limitations infringe upon its ability to meet essential financial obligations and violate the **principle of federalism.**
- **Concerns highlighted by Kerala's plea**
  - **Federal Fiscal Relations:** The dispute between Kerala and the Union government underscores the complexities of **fiscal federalism in India**.
  - **State Expenditure Priorities**: The significant disparity between Union and State government spending, particularly in **social sectors** like health and education, raises questions about allocation priorities and the respective roles of different tiers of government in addressing societal needs.
- **Complex Resource Sharing System in India:** In resource sharing, there are majorly four kinds of flows:
  - **Statutorily Defined Share for States:** Defined set of tax revenues garnered by the Centre is shared with States as per recommendations of Finance Commissions. Principles governing the share devolved and distributed to individual States.
  - **Statutorily Mandated Grants:** Includes revenue deficit grant to identified States to cover revenue account gap post-devolution. Grants-in-aid to States have decreased from Rs.1,95,000 crore in 2015-16 to Rs.1,65,000 crore in 2023-24.
  - **Discretionary Spending:** Previously mediated by the Planning Commission, now solely at the discretion of the Centre. Involves Centre's share of expenditure in Centrally sponsored schemes implemented in States, with States meeting a specified proportion of projected expenditure.
  - **Central Sector Schemes:** Implemented by Centre in individual States' jurisdictions, with all expenditure met by Central government.
- **Significance/Need of State's spending:** Kerala's plea prompts broader discussions on the role of government spending in fostering economic growth.
  - **Economic growth:** Spending by the states has helped to alleviate the livelihood crisis in India, caused due to the slow growth of rural incomes and employment.
  - **Positive transformation:** State's spending positively transform a region's economy and society.

- **Social growth:** A sizeable chunk of the government expenditure on social services is in the revenue account, paid as salaries and for covering day-to-day expenses. In states, teachers, nurses, and other government employees are key drivers of social achievements.

4. Sainik Schools
GS 2 (Education)

Political affiliation does not influence selection process of new Sainik Schools: govt.

The Hindu Bureau
NEW DELHI

The scheme for new Sainik Schools is "well thought out" and the "political or ideological affiliation or otherwise" of the applicant institution does not influence the selection process, the Defence Ministry said on Wednesday, responding to some reports.

It stated that attempts to "politicise or distort" the objectives and implementation of the scheme by "casting aspersions on it are unwarranted and misleading".

"The selection process itself is rigorous, checks and balances have been built in to ensure continuing adherence to the objectives," the Ministry said in a statement.

In addition to the existing 33 schools, the Ministry had approved proposal for 100 more schools

Sainik Schools were established in the 1960s under the Sainik Schools Society (SSS), which is under the Ministry and there are 33 existing schools.

Given the demand for Sainik Schools, the Union Cabinet had in October 2021 approved the proposal for launching 100 Sainik Schools under public-private partnership to be affiliated with the SSS.

Detailing the selection process, the Ministry said the evaluation process includes a School Evaluation Committee comprising the District Magistrate concerned as Chairperson and principals of nearby existing Sainik Schools or Navodaya Vidyalaya.

Physical inspection of the applicant school and verification of the credentials is done as per laid down criteria, it stated, and an approval committee that consists of the Joint Secretary, SSS as Chairperson, Secretary of CBSE and an eminent educationist as members accord the final recommendations.

- **Why in News:** Recently, the Defence Ministry said that, the "political or ideological affiliation or otherwise" of the applicant institution does not influence the selection process for new Sainik Schools.
- **About Sainik Schools:**
  - These are **residential schools** for students, providing Public School Education which are affiliated to **Central Board of Secondary Education** (CBSE), New Delhi.
  - **Funding:** These schools are funded by **Central and State governments.**
  - The scheme to establish Sainik Schools **was introduced in 1961** with the primary aim of preparing students academically, physically and mentally for entry into the National Defence Academy.
  - These schools are under the overall governance of **Sainik Schools Society** (registered under **Societies Registration Act XXI of 1860**) Ministry of Defence. It is established with the primary aim of preparing boys academically, physically and mentally for entry into the National Defence Academy.
  - At present, there are 33 Sainik Schools located in various parts of the country. **Girls cadets** have also been given admission in Sainik School, from the academic session **2021-22.**
  - **Recent initiative**:
    - Government of India has approved an initiative for **setting up of 100** new Sainik Schools under Sainik Schools Society, Ministry of Defence in partnership with **NGOs/Private Schools and State Govt.**
    - It aims to create an academically strong, culturally aware, intellectually adept, confident, highly skilled, multi-dimensional, patriotic self-reliant youth community with leadership qualities focused on providing utmost priority to the nation.

5. Marine Products Export Development Authority
GS 3 (Economy)

India rejects report on abusive conditions at shrimp hatcheries

The Hindu Bureau
NEW DELHI

India, the biggest supplier of shrimp, U.S.'s favourite seafood, has strongly refuted allegations of human rights and environmental abuses raised by a Chicago-based human rights group.

Top Commerce Ministry officials will meet seafood exporters on Thursday to discuss efforts to scotch such attempts at maligning its global reputation.

In 2022-23, India's seafood exports stood at $8.09 billion, or ₹64,000 crore, and shrimps accounted for a bulk of these exports at $5.6 billion. India has emerged as one of the world's largest shrimp exporters and its share in the U.S. market has risen from 28%, or $1.3 billion, to 40% in 2022-23, with shipments worth $2.4 billion, far ahead of rivals such as Thailand, China, Vietnam, and Ecuador.

Terming a report from Corporate Accountability Lab (CAL) that alleges "dangerous and abusive" working conditions in some shrimp hatcheries, growing ponds, and peeling sheds, as baseless, a senior official asserted that the entire value chain for India's shrimp exports is certified by the Marine Products Export Development Authority and there is no scope for such concerns about overseas shipments. This seems to be driven by vested interests aimed at maligning the reputation of our aquaculture sector and its products in global markets," he noted.

About a lakh shrimp farms in Andhra Pradesh alone account for almost 70% of India's shrimp output. Women are reckoned to account for 70% of the eight million-odd jobs in the sector, including two lakh in hatcheries and aquaculture farms, and the rest in processing and freezing units.

The Ministry is likely to advise exporters to commission independent studies on the working conditions at shrimp farms to dispel the concerns in major markets like the U.S. and the EU.

It has also asked the Andhra Pradesh government to look into the allegations made in the CAL report.

- **Why in News:** Recently, officials asserted that the entire value chain for India's shrimp exports is certified by the Marine Products Export Development Authority (MPEDA) and there is no scope for abusive conditions at shrimp farms.
- **About Marine Products Export Development Authority:**
  - It is a **statutory body** entrusted with the primary task of **promotion of export of marine products.**
  - **History:** It was set up **by an act of Parliament** during 1972. The erstwhile Marine Products Export Promotion Council established by the Government of India in September, 1961 was converged into MPEDA on 24th August, 1972.
  - **Functions:**
    - **Developing and regulating** off-shore and **deep-sea fishing** and undertaking measures for the conservation and management of off-shore and deep-sea fisheries;
    - **Registering fishing vessels**, processing plants or storage premises for marine products and conveyances used for the transport of marine products; fixing of standards and specifications for marine products for purposes of export
      - ❖ Regulating the export of marine products; registering of exporters of marine products on payment of such fees as may be prescribed;
    - It has set up five full-fledged **Quality Control Laboratories**, at Kochi, Nellore & Bhimavaram, Bhubaneshwar and Porbandar. In addition, fifteen **ELISA Screening Laboratories** set up by MPEDA in the maritime states.
    - In order to reach out to the exporters in different parts of the Country, it has set up 18 – Regional / Sub Regional Divisions / Desk offices.
    - **Headquarter:** Kochi, Kerala
    - It has **Trade Promotion offices** at New Delhi, Tokyo and New York.
    - **Nodal Ministry:** Ministry of Commerce and Industry

6. India's First Commercial Crude Oil Strategic Storage
Recent events of importance

- **Why in News:** India, the world's third biggest oil consumer and importer, plans to build its first commercial crude oil strategic storage as part of efforts to shore up stockpiles as insurance against any supply disruption.
- **More on News:**

- India, which meets over **85 per cent of its oil needs through imports**, will use the strategic reserves in any emergency situation like supply disruption or war.
- This approach mirrors the models adopted by countries like Japan and South Korea, allowing private lessees, predominantly oil majors, to engage in crude oil trading.
- The expansion of oil storage capacity also aligns with India's aspiration to become a member of the **International Energy Agency (IEA),** necessitating members to maintain a minimum of 90 days of oil consumption.

India plans to build first commercial crude storage

Press Trust of India
NEW DELHI

India plans to build its first commercial crude oil strategic storage as part of efforts to shore up stockpiles as insurance against any supply disruption.

Indian Strategic Petroleum Reserves Ltd. (ISPRL), an SPV created by the government for building and operating strategic petroleum reserves in the country, has invited bids for constructing 2.5 million tonnes of underground storage at Padur in Karnataka, according to the tender document.

ISPRL had in the first phase built a strategic petroleum reserve in underground unlined rock caverns at three locations.

- **International Energy Agency (IEA)**
  - **Established in:** 1974
  - The International Energy Agency is a **Paris-based autonomous intergovernmental organisation** that provides policy recommendations, analysis and data on the global energy sector.
  - The 31 member countries and 13 association countries of the IEA represent 75% of global energy demand.

7. Taiwan and its Earthquake Problem
GS 3 (Disaster management)

- **Why in News:** Taiwan was recently hit by its biggest earthquake in at least 25 years.
- **Reason behind earthquakes in Taiwan**
  - Notably, Taiwan is prone to earthquakes as it lies along the Pacific "**Ring of Fire**" — where **90% of the world's earthquakes take place.**
  - The island and its surrounding waters have registered about 2,000 earthquakes with a magnitude of 4.0 or greater since 1980, and more than 100 earthquakes with a magnitude above 5.5.
  - **Vulnerability of Ring of Fire to earthquakes:** The Ring of Fire witnesses so many earthquakes due to constant sliding past, colliding into, or moving above or below each other of the tectonic plates.
  - As the edges of these plates are quite rough, they get stuck with one another while the rest of the plate keeps moving.
  - An earthquake occurs when the plate has moved far enough and the edges unstick on one of the faults.
  - Taiwan experiences earthquakes due to the interactions of two tectonic plates
    - **Philippine Sea Plate**
    - **Eurasian Plate**

Nine dead, 1,000 injured as 7.4-strong quake hits Taiwan

It was the strongest earthquake to have struck the island in the past 20 years; strict building regulations and widespread public disaster awareness believed to have staved off a catastrophe

Agence France-Presse
TAIPEI

At least nine persons were killed and more than 1,000 injured on Wednesday by a powerful earthquake in Taiwan that damaged dozens of buildings and prompted tsunami warnings that extended to Japan and the Philippines before being lifted.

Dozens of people were believed safe but unreachable in areas cut off by massive landslides triggered by the quake.

Strict building regulations and widespread public disaster awareness appear to have staved off a catastrophe for the earthquake-prone island, which lies near the junction of two tectonic plates.

The quake was the strongest since one of 7.6-magnitude struck in September 1999, killing around 2,400 people in the deadliest natural disaster in the island's history.

Wednesday's magnitude-7.4 quake hit just before 8:00 am local time (0000 GMT), with the U.S. Geological Survey (USGS) putting the epicentre 18 km south of Taiwan's Hualien City, at a depth of 34.8 km.

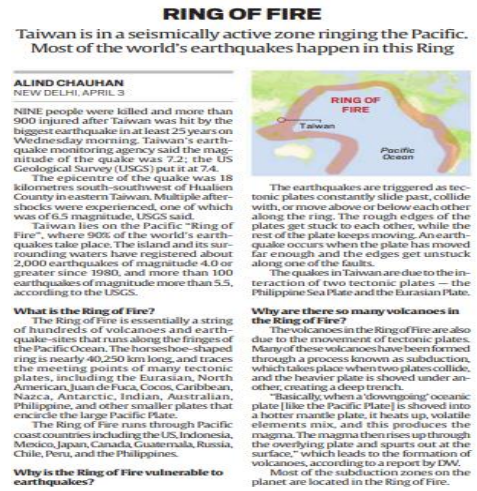
Three people among a group of seven on an early-morning hike were crushed to death by boulders loosened by the earthquake.

Separately, the drivers of a truck and a car died when their vehicles were hit by tumbling rocks, while another man died at a mine quarry. The National Fire Agency did not immediately offer details on the other three deaths, but said all the fatalities had been in Hualien county, adding that 1,011 people had been injured.

Crumbled blocks: A damaged building in New Taipei City, after a major earthquake hit Taiwan's east on Wednesday. AFP

- **Volcano Issue**
  - The existence of volcanoes in the Ring of Fire is also due to the **movement of tectonic plates.**
  - Many of the volcanoes have been formed through a process known as
  - It takes place when two plates collide with each other and the heavier plate is shoved under another, creating a deep trench.

8. Ring of Fire
GS 1 (Geography)


RING OF FIRE

Taiwan is in a seismically active zone ringing the Pacific. Most of the world's earthquakes happen in this Ring

ALIND CHAUHAN
NEW DELHI, APRIL 3

NINE people were killed and more than 900 injured after Taiwan was hit by the biggest earthquake in at least 25 years on Wednesday morning. Taiwan's earthquake monitoring agency said the magnitude of the quake was 7.2; the US Geological Survey (USGS) put it at 7.4.

The epicentre of the quake was 18 kilometres south-southwest of Hualien County in eastern Taiwan. Multiple aftershocks were experienced, one of which was of 6.5 magnitude, USGS said.

Taiwan lies on the Pacific "Ring of Fire", where 90% of the world's earthquakes take place. The island and its surrounding waters have registered about 2,000 earthquakes of magnitude 4.0 or greater since 1980, and more than 100 earthquakes of magnitude more than 5.5, according to the USGS.

What is the Ring of Fire?

The Ring of Fire is essentially a string of hundreds of volcanoes and earthquake-sites that runs along the fringes of the Pacific Ocean. The horseshoe-shaped ring is nearly 40,250 km long, and traces the meeting points of many tectonic plates, including the Eurasian, North American, Juan de Fuca, Cocos, Caribbean, Nazca, Antarctic, Indian, Australian, Philippine, and other smaller plates that encircle the large Pacific Plate.

The Ring of Fire runs through Pacific coast countries including the US, Indonesia, Mexico, Japan, Canada, Guatemala, Russia, Chile, Peru, and the Philippines.

Why is the Ring of Fire vulnerable to earthquakes?

The earthquakes are triggered as tectonic plates constantly slide past, collide with, or move above or below each other along the ring. The rough edges of the plates get stuck to each other, while the rest of the plate keeps moving. An earthquake occurs when the plate has moved far enough and the edges get unstuck along one of the faults.

The quakes in Taiwan are due to the interaction of two tectonic plates — the Philippine Sea Plate and the Eurasian Plate.

Why are there so many volcanoes in the Ring of Fire?

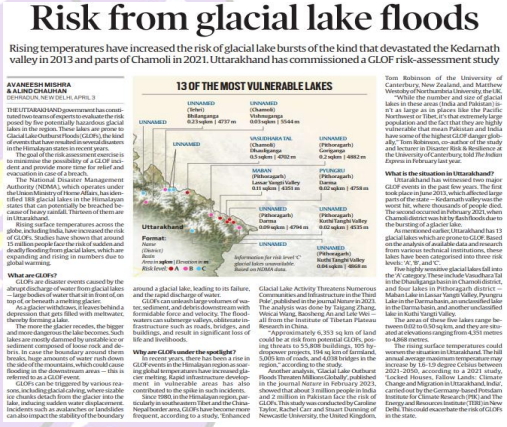
The volcanoes in the Ring of Fire are also due to the movement of tectonic plates. Many of these volcanoes have been formed through a process known as subduction, which takes place when two plates collide, and the heavier plate is shoved under another, creating a deep trench.

"Basically, when a 'downgoing' oceanic plate [like the Pacific Plate] is shoved into a hotter mantle plate, it heats up, volatile elements mix, and this produces the magma. The magma then rises up through the overlying plate and spurts out at the surface," which leads to the formation of volcanoes, according to a report by DW.

Most of the subduction zones on the planet are located in the Ring of Fire.

- **Why in News:** Taiwan is prone to earthquakes as it lies along the Pacific "Ring of Fire" — where 90% of the world's earthquakes take place.
- **About Ring of Fire:**
  - It is a string of hundreds of **volcanoes and earthquake-sites** which runs along the **Pacific Ocean**. It is a semicircle or horse shoe in shape and stretches nearly 40,250 kilometres.
  - It traces the meeting points of numerous tectonic plates, including the **Eurasian**, North American, **Juan de Fuca, Cocos, Caribbean, Nazca, Antarctic**, Indian, Australian, Philippine and other smaller plates, which all encircle the large Pacific Plate.
  - It runs through 15 more countries including the USA, Indonesia, Mexico, Japan, Canada, Guatemala, Russia, Chile, Peru and the Philippines.
  - **Why is it more prone to earthquakes?**
    - **i.** It witnesses so many earthquakes due to **constant sliding past,** colliding into, or moving above or below each other **of the tectonic plates**. As the edges of these plates are quite rough, they get stuck with one another while the rest of the plate keeps moving.
    - **ii.** An earthquake occurs when the plate has moved far enough and the edges unstick on one of the faults.
  - There are **many volcanoes** in the Ring of Fire due to the movement of tectonic plates. Many of the volcanoes have been formed through a **process known as subduction.**
  - It takes place when two plates collide with each other and the heavier plate is shoved under another, creating a deep trench.
  - Most of the subduction zones on the planet are located in the Ring of Fire and that's why it hosts a large number of volcanoes.

9. Glacial Lake outburst
GS 3 (Environment)


Risk from glacial lake floods

Rising temperatures have increased the risk of glacial lake bursts of the kind that devastated the Kedarnath valley in 2013 and parts of Chamoli in 2021. Uttarakhand has commissioned a GLOF risk-assessment study

AVANEESH MISHRA & ALIND CHAUHAN
DEHRADUN, NEW DELHI, APRIL 3

THE UTTARAKHAND government has constituted two teams of experts to evaluate the risk posed by five potentially hazardous glacial lakes in the region. These lakes are prone to Glacial Lake Outburst Floods (GLOFs), the kind of events that have resulted in several disasters in the Himalayan states in recent years.

The goal of the risk assessment exercise is to minimise the possibility of a GLOF incident and prepare the ground for relief and evacuation in case of a breach.

The National Disaster Management Authority (NDMA), which operates under the Union Ministry of Home Affairs, has identified 188 glacial lakes in the Himalayan states that can potentially be breached because of heavy rainfall. Thirteen of them are in Uttarakhand.

Rising surface temperatures across the globe, including India, have increased the risk of GLOFs. Studies have shown that around 15 million people face the risk of sudden and severe floods from glacial lakes, which are expanding and rising in numbers due to global warming.

What are GLOFs?

GLOFs are disaster events caused by the abrupt discharge of water from glacial lakes — large bodies of water that sit in front of, on top of, or beneath a melting glacier.

As a glacier melts/does, it leaves behind a depression that gets filled with meltwater, thus creating a glacial lake.

The more the glacier recedes, the bigger and more dangerous the lake becomes. Such lakes are mostly dammed by unstable ice or sediment composed of loose rock and debris. In case the boundary around them breaks, huge amounts of water rush down the side of the mountains, which could cause flooding in the downstream areas — this is referred to as a GLOF event.

GLOFs can be triggered by various reasons, including ice calving, where sizable ice chunks detach from the glacier into the lake, inducing sudden water displacement. Incidents such as avalanches or landslides can also impact the stability of the boundary around a glacial lake, leading to its failure, and the rapid discharge of water.

GLOFs can unleash large volumes of water, sediment, and debris downstream with formidable force and velocity. The flooding can cause substantial damage to critical infrastructure such as roads, bridges, and buildings, and result in significant loss of life and livelihoods.

Why are GLOFs under the spotlight?

In recent years, there has been a rise in GLOF events in the Himalayan region as warming global temperatures have increased glacier melt. Rapid infrastructure development is a notable anthropogenic factor also contributed to the spike in such incidents.

Since 1980, in the Himalayan region, particularly in southeastern Tibet and the China-Nepal border area, GLOFs have become more frequent, according to a study, 'Enhanced Glacial Lake Activity Threatens Numerous Communities and Infrastructure in the Third Pole', published in the journal Nature in 2023. The analysis was done by Tandong Zhang, African Wang, Baosheng An and Lele Wei — all from the Institute of Tibetan Plateau Research in China.

"Approximately 9,353 sq km of land could be at risk from potential GLOFs, posing threats to 55,808 buildings, 105 hydropower projects, 194 sq km of farmland, 5,005 km of roads, and 4,038 bridges in the region," according to the study.

Another analysis, 'Glacial Lake Outburst Floods Threaten Hundreds of Millions Globally' in the journal Nature in February 2023, showed that about 1 million people in India and 2 million in Pakistan face the risk of GLOFs. This study was conducted by Caroline Taylor, Rachel Carr and Stuart Dunning of Newcastle University, the United Kingdom, Tom Robinson of the University of Canterbury, New Zealand, and Matthew Westoby of Northumbria University, the UK.

While the number and size of glacial lakes in these areas (India and Pakistan) is relatively small, "in the context of the Northwest or Tibet, it's that extremely large population and the fact that they are highly vulnerable that means Pakistan and India have some of the highest GLOF danger globally," Tom Robinson, co-author of the study and lecturer in Disaster Risk & Resilience at the University of Canterbury, told *The Indian Express* in February last year.

What is the situation in Uttarakhand?

Uttarakhand has witnessed two major GLOF events in the past few years. The first took place in June 2013, which affected large parts of the state — Kedarnath valley was the worst hit, where thousands of people died. The second occurred in February 2021, when Chamoli district was hit by flash floods due to the bursting of a glacier lake.

As mentioned earlier, Uttarakhand has 13 glacial lakes which are prone to GLOF. Based on the analysis of available data and research on these lakes in the past few years, these glacial lakes have been categorised into three risk levels: 'A', 'B', and 'C'.

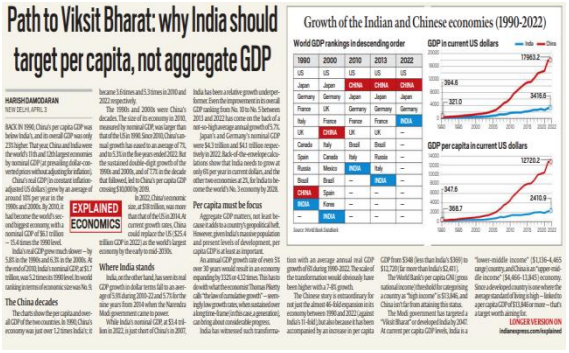
Five highly sensitive glacial lakes fall into the 'A' category. These include Vasudhara Tal in the Dhauliganga basin in Chamoli district, and four lakes in Pithoragarh district — Mahan Lake in Lassar Yangti Valley, Pyungru Lake in the Darma basin, an unclassified lake in the Darma basin, and another unclassified lake in the Kuthi Yangti Valley.

The area under the five lakes range between 0.02 to 0.10 sq km, and they are situated at elevations ranging from 4,351 metres to 4,868 metres.

The rising surface temperatures could worsen the situation in Uttarakhand. The hill annual average maximum temperature may increase by 1.6-1.9 degree Celsius between 2021-2050, according to a 2021 study, 'Changes in Climate Extremes and Their Impacts on Migration in Uttarakhand, India', carried out by the Germanwatch and Potsdam Institute for Climate Research (PIK) and The Energy and Resources Institute (TERI) in New Delhi. This could exacerbate the risk of GLOFs in the state.

- **Why in News:** The Uttarakhand government has decided to evaluate the risk posed by five potentially hazardous glacial lakes in the region. These lakes are prone to **Glacial Lake Outburst Floods (GLOFs),** the kind of events that have resulted in several disasters in the Himalayan states in recent years.
- **What is Glacial Lake outburst?**
  - When the boundary around unstable glacial lake breaks, and huge amounts of water rush down the side of the mountains, which could cause flooding in the downstream areas.
  - This is called glacial lake outburst floods or GLOF.
  - **Factors causing GLOF**:
    - GLOF can be triggered by several reasons, including **earthquakes, extremely heavy rains and ice avalanches.**
    - These lakes are also often found in **steep, mountainous regions**, which means landslides or ice avalanches can sometimes fall directly into the lakes and displace the water, causing it to **over-top the natural dam and flood downstream.**
  - **Features of GLOF:**
    - They involve sudden (and sometimes cyclic) releases of water.
    - They tend to be rapid events, lasting hours to days.
    - They result in large downstream river discharges (which often increase by an order of magnitude).

10. India Should Target Per Capita and Not Aggregate GDP
GS 3 (Economy)


Path to Viksit Bharat: why India should target per capita, not aggregate GDP

HARISH DAMODARAN
NEW DELHI, APRIL 3

BACK IN 1990, China's per capita GDP was below India's, and its overall GDP was only 23% higher. That year, China and India were the world's 11th and 12th largest economies by nominal GDP (at prevailing dollar-conversion rates without adjusting for inflation).

China's real GDP (in constant inflation-adjusted US dollars) grew by an average of around 10% per year in the 1980s and 2000s. By 2010, it had become the world's second-biggest economy, with a nominal GDP of $6.1 trillion — 15.4 times the 1990 level.

India's real GDP grew much slower — by 5.8% in the 1980s and 6.3% in the 2000s. At the end of 2010, India's nominal GDP at $1.7 trillion, was 5.2 times its 1990 level. Its world ranking in terms of economic size was No. 9.

The China decades

The charts show the per capita and overall GDP of the two countries. In 1990, China's economy was just over 1.2 times India's; it became 3.6 times and 5.3 times India's in 2010 and 2022 respectively.

The 1990s and 2000s were China's decades. The size of its economy in 2010, measured by nominal GDP, was larger than that of the US in 1998. Since 2010, China's annual growth has eased to an average of 7%, and to 5.3% in the five years ended 2022. But the sustained double-digit growth of the 1990s and 2000s, and of 7.7% in the decade that followed, led to China's per capita GDP crossing $10,000 by 2019.

EXPLAINED ECONOMICS

In 2022, China's economic size, at $18 trillion, was more than that of the US in 2014. At current growth rates, China could replace the US ($25.4 trillion GDP in 2022) as the world's largest economy by the early to mid-2030s.

Where India stands

India, on the other hand, has seen its real GDP growth in dollar terms fall to an average of 5.9% during 2010-22 and 5.7% for the nine years from 2014 when the Narendra Modi government came to power.

While India's nominal GDP, at $3.4 trillion in 2022, is just short of China's in 2007, India has been a relative growth underperformer. Even the improvement in its overall GDP ranking from No. 10 to No. 5 between 2013 and 2022 has come on the back of a not-so-high average annual growth of 5.7%.

Japan's and Germany's nominal GDP were $4.3 trillion and $4.1 trillion respectively in 2022. Back-of-the-envelope calculations show that India needs to grow at only 6% per year in current dollars, and the other two economies at 2%, for India to become the world's No. 3 economy by 2028.

Per capita must be focus

Aggregate GDP matters, not least because it adds to a country's geopolitical heft. However, given India's massive population and present levels of development, per capita GDP is at least as important.

As annual GDP growth rate of even 5% over 30 years would result in an economy expanding by 232% or 4.32 times. This is in line with what the economist Thomas Piketty calls "the law of cumulative growth" — seemingly low growth rates, when sustained over a long time-frame (within one, a generation), can bring about considerable progress.

India has witnessed such transformation with an average annual real GDP growth of 6% during 1980-2022. The scale of the transformation would obviously have been higher with a 7-8% growth.

The Chinese story is extraordinary for not just the almost 46-fold expansion in its economy between 1990 and 2022 (against India's 11-fold) but also because it has been accompanied by an increase in per capita GDP from $348 (less than India's $369) to $12,720 (far more than India's $2,411) during this period.

The World Bank's per capita GNI (gross national income) threshold for categorising a country as "high income" is $13,846, and China isn't far from attaining this status.

The Modi government has targeted a "Viksit Bharat" or developed India by 2047. At current per capita GDP levels, India is a "lower-middle income" ($1,136-4,465 range) country, and China is an "upper-middle income" ($4,466-13,845 economy). Since a developed country is one where the average standard of living is high — linked to per capita GDP of $13,846 or more — that's a target worth aiming for.

LONGER VERSION ON indianexpress.com/explained

Growth of the Indian and Chinese economies (1990-2022)

World GDP rankings in descending order

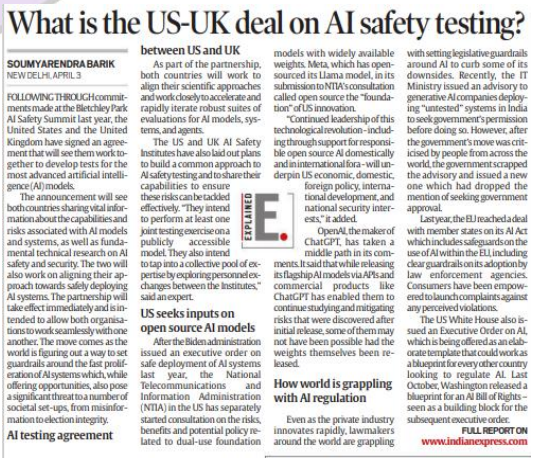
1990	2000	2010	2013	2022
US	US	US	US	US
Japan	Japan	CHINA	CHINA	CHINA
Germany	Germany	Japan	Japan	Japan
France	UK	Germany	Germany	Germany
Italy	France	France	France	INDIA
UK	CHINA	UK	UK	–
Canada	Italy	Brazil	Brazil	–
Spain	Canada	Italy	Russia	–
Russia	Mexico	INDIA	Italy	–
Brazil	Brazil	–	INDIA	–
CHINA	Spain	–	–	–
INDIA	Korea	–	–	–
–	INDIA	–	–	–

Source: World Bank Databank

GDP in current US dollars (India, China)
17963.2
3416.8
364.6
321.0

GDP per capita in current US dollars
12720.2
2410.9
347.6
368.7

11. US-UK Partnership on AI
GS 2 (International Relations)


What is the US-UK deal on AI safety testing?

SOUMYA RENDRA BARIK
NEW DELHI, APRIL 3

FOLLOWING THROUGH on commitments made at the Bletchley Park AI Safety Summit last year, the United States and the United Kingdom have signed an agreement that will see them work together to develop tests for the most advanced artificial intelligence (AI) models.

The announcement will see both countries sharing vital information about the capabilities and risks associated with AI models and systems, as well as fundamental technical research on AI safety and security. The two will also work on aligning their approach towards safely deploying AI systems. The partnership will take effect immediately and is intended to allow both organisations to work seamlessly with one another. The move comes as the world is figuring out a way to set guardrails around the fast proliferation of AI systems which, while offering opportunities, also pose a significant threat to a number of societal set-ups, from misinformation to election integrity.

AI testing agreement between US and UK

As part of the partnership, both countries will work to align their scientific approaches and work closely to accelerate and rapidly iterate robust suites of evaluations for AI models, systems, and agents.

The US and UK AI Safety Institutes have also laid out plans to build a common approach to AI safety testing and to share their capabilities to ensure these risks can be tackled effectively. "They intend to perform at least one joint testing exercise on a publicly accessible model. They also intend to tap into a collective pool of expertise by exploring personnel exchanges between the Institutes," said an expert.

EXPLAINED

US seeks inputs on open source AI models

After the Biden administration issued an executive order on safe deployment of AI systems last year, the National Telecommunications and Information Administration (NTIA) in the US has separately started consultation on the risks, benefits and potential policy related to dual-use foundation models with widely available weights. Meta, which has open-sourced its Llama model, in its submission to NTIA's consultation and work closely to accelerate and rapidly iterate robust suites of evaluations for AI models, systems, and agents.

"Continued leadership of this technological revolution - including through support for responsible open source AI domestically and in international fora - will underpin US economic, domestic, foreign policy, international development, and national security interests," it added.

OpenAI, the maker of ChatGPT, has taken a middle path in its comments. It said that while releasing its flagship AI models via APIs and commercial products like ChatGPT has enabled them to continue studying and mitigating risks that were discovered after initial release, some of them may not have been possible had the weights themselves been released.

How world is grappling with AI regulation

Even as the private industry innovates rapidly, lawmakers around the world are grappling with setting legislative guardrails around AI to curb some of its downsides. Recently, the IT Ministry issued an advisory to generative AI companies deploying "untested" systems in India to seek government's permission before doing so. However, after the government's move was criticised by people from across the world, the government scrapped the advisory and issued a new one which had dropped the mention of seeking government approval.

Last year, the EU reached a deal with member states on its AI Act which includes safeguards on the use of AI within the EU, including clear guardrails on its adoption by law enforcement agencies. Consumers have been empowered to launch complaints against any perceived violations.

The US White House also issued an Executive Order on AI, which is being offered as an elaborate template that could work as a blueprint for every other country looking to regulate AI. Last October, Washington released a blueprint for an AI Bill of Rights – seen as a building block for the subsequent executive order.

FULL REPORT ON www.indianexpress.com

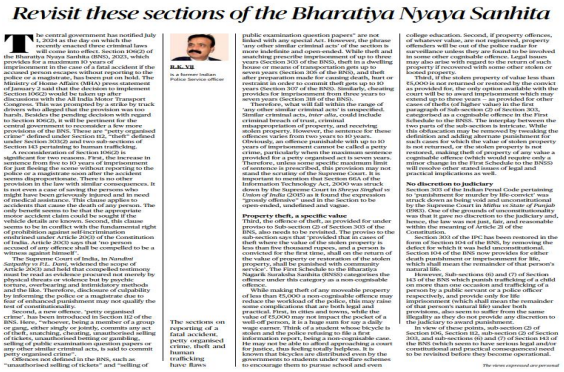
- **Why in News:** The United States and Britain announced a new partnership on the science of artificial intelligence safety, amid growing concerns about upcoming next-generation versions.
- **What is the partnership on AI safety, testing?**
  - **Objective:** to jointly develop advanced AI model testing.
  - This is the first agreement of its kind anywhere in the world.
  - Under the formal partnership, Britain and the United States plan to perform at least one joint testing exercise on a publicly accessible model and are considering exploring personnel exchanges between the institutes. Both are working to develop similar partnerships with other countries to promote AI safety.
  - Both countries will share vital information about the capabilities and risks associated with AI models and systems, according to the agreement, which has taken effect immediately.

- They will also share fundamental technical research on AI safety and security with each other, and work on aligning their approach towards safely deploying AI systems.

- **Need of the Initiative**
  - The move comes as the world is figuring out a way to set guardrails around the fast proliferation of AI systems.
  - Although these systems offer opportunities, they pose a significant threat to a number of societal set-ups, from misinformation to election integrity.
- **AI Regulation around the world**
  - As the private industry innovates rapidly, lawmakers around the world are grappling with setting legislative guardrails around AI to curb some of its downsides.
  - **India:** The IT Ministry issued an advisory to generative AI companies deploying "untested" systems in India to seek the government's permission before doing so.
    - However, after the government's move was criticised by people from across the world, the government scrapped the advisory and issued a new one which had dropped the mention of seeking government approval.
  - **EU:** Last year, the EU reached a deal with member states on its AI Act which includes safeguards on the use of AI within the EU, including clear guardrails on its adoption by law enforcement agencies.

5th April, 2024

1. Revisit these sections of the Bharatiya Nyaya Sanhita
GS 2 (Governance)


Revisit these sections of the Bharatiya Nyaya Sanhita

- **Why in News:** The central government has notified the implementation of three recently enacted criminal laws from July 1, 2024. However, **Section 106(2)** of the **Bharatiya Nyaya Sanhita (BNS), 2023**, has been put on hold pending discussions with the All India Motor Transport Congress due to concerns raised by truck drivers regarding its severity.
- **Concerns Regarding Section 106(2):**
  - **Disproportionate Sentencing: The** provision prescribing a maximum of 10 years imprisonment for failing to report a fatal accident without considering medical assistance seems disproportionate compared to other laws.
  - **Conflict with Fundamental Rights:** Section 106(2) might infringe upon **Article 20(3)** of the Indian Constitution, which prohibits self-incrimination, as individuals may report accidents due to fear of enhanced punishment.
- **Introduction of 'Petty Organised Crime':**
  - **Definition and Scope:** Section 112 of the BNS introduces a new offence termed 'petty organised crime,' encompassing various criminal acts committed by groups or gangs.
  - **Lack of Clarity:** The inclusion of undefined acts like "unauthorised selling of tickets" and "selling of public examination question papers" raises ambiguity about the scope and severity of the offence.
  - **Potential Legal Challenges:** Without specific sentencing guidelines, the provision may face scrutiny from the Supreme Court for its vague and open-ended nature.
- **Revisiting Theft Provisions:**
  - **Non-Cognisable Offence for Low-Value Theft:** The BNS categorizes theft of property worth less than ?5,000 as a non-cognisable offence, potentially impacting access to justice for economically disadvantaged victims.
  - **Legal Complications**: Failure to return stolen property of low value may lead to imprisonment, raising legal and practical challenges in enforcement and recovery.
  - **Judicial Discretion:** The absence of judicial discretion in sentencing for certain offences, such as trafficking, raises concerns regarding the fairness and constitutionality of the law.

2. Russian Oil Price Cap
GS 2 (International events of importance)

No sanctions against India for buying, refining Russian oil, say U.S. officials

- **Why in News:** US is urging India to maintain the implementation of the **oil price cap** aimed at limiting profits to Russia, while also promoting **stable global energy markets.**
- **Price Cap and Objective**
  - Following Russia's invasion of Ukraine, the **G7 nations, the European Union, and Australia** jointly implemented a price cap.
  - The price cap is helping maintain a **steady supply of energy** to global consumers and businesses, and providing key importers like India with **more leverage to drive steeper bargains**.
  - At the same time, the price cap, along with key sanctions enforcement measures, is **reducing Russia's profits from selling that oil.**
  - India, which was the top buyer of Russian oil in 2023, has been heavily criticised for its continued purchase of discounted oil from Moscow.
- **Impact of price caps**

- The imposition of price caps due to Western sanctions on Russian oil significantly impacts India's oil trade with Russia in several ways:
  - **Supply Disruption and Dependency Concerns**: Price caps may disrupt the steady supply of crude oil to India, which heavily relies on imports to meet its energy needs.
  - **Economic Impact and Trade Relations**: It could lead to increased prices for Indian importers, resulting in higher costs for refining and production. This may strain India's trade relations with Russia, as the country seeks cost-effective energy sources to sustain its economic growth and development.
  - **Diversification Efforts and Strategic Considerations: I**t may prompt India to accelerate its efforts to diversify its oil imports, reducing reliance on Russian oil and exploring alternative markets.
  - **Impact on Bilateral Cooperation**: The imposition of price caps could affect bilateral cooperation between India and Russia in the energy sector, potentially leading to renegotiations of existing agreements and contracts.
  - **Global Energy Market Dynamics**: It can contribute to volatility in the global energy market, affecting oil prices and supply chains worldwide.

3. State's power to regulate industrial alcohol
GS 2 (Governance)

- **Why in News:** For years, the states and the Union have been pitted on who has the legislative competence over each type of alcohol. However, in a latest update, the Supreme Court has ruled that the States' power to legislate to regulate industrial alcohol is untrammeled and complete.

Centre asserts in SC its right to regulate industrial alcohol

New Delhi: Asserting its right to regulate industrial alcohol, the Centre told the Supreme Court on Thursday that legislative power to levy excise duty on alcohol not fit for human consumption but meant for industrial use lies exclusively with Parliament.

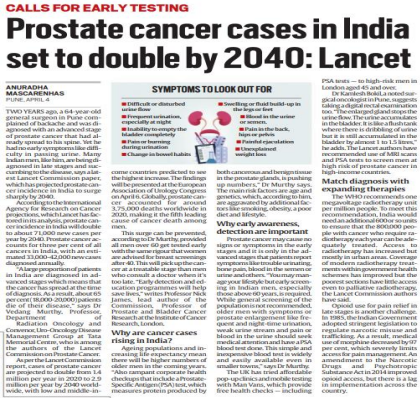
Arguing before a nine-judge constitution bench headed by Chief Justice D Y Chandrachud, Attorney General R Venkataramani submitted that a "conscious decision" was taken to treat alcoholic liquors fit for human consumption and alcoholic liquors not fit for human consumption separately, with the former falling within the domain of provincial legislatures and the latter within the ambit of the federal legislature. "It is submitted that the legislative power in relation to levy excise duty upon non-potable liquor is exclusively with Parliament, and upon potable liquor is exclusively with the Legislatures of the States," Venkataramani told the bench.

The nine-judge bench is examining the issue of overlapping powers of the Centre and states in production, manufacturing, supply and regulation of industrial alcohol. A clutch of petitions came before the bench after a seven-judge constitution bench ruled against the states. The matter was referred to a nine-judge bench in 2010 after a seven-judge bench ruled in 1997 that the Centre will have the regulatory power over production of industrial alcohol. The hearing remained inconclusive and will resume on Tuesday when Solicitor General Tushar Mehta is scheduled to argue the matter. PTI

- **Overlapping jurisdictions under various lists**
  - **Entry 52of the Union List** empowers the central government to regulate industries that **Parliament** finds to be of "**public interest**."
  - Parliament—acting in accordance with the Union List—through **Section 18-G of the Industries (Development and Regulation) Act, 1951(Industries Act)**, is entrusted with the power to regulate specific products related to scheduled industries to the Union government.
    - This was done to ensure that these products were being distributed fairly and sold at reasonable prices.
  - **Under Entry 8of the State List**, a state is empowered to make laws for **"Intoxicating liquors, that is to say, the production, manufacture, possession, transport, purchase and sale of intoxicating liquors."**
  - However, under **Entry 33of the Concurrent List** both the state and Union governments can make laws on the products of any industry, even if Parliament has granted control to the Union in public interest.
  - And therein lies the confusion of who has the power to regulate industrial alcohol—the state or the Union.

4. Prostate cancer
GS 2 (Health)

- **Why in News:** By 2040, cases of prostate cancer are likely to double worldwide to 2.9 million per year, from 1.4 million per year in 2020, according to a new analysis published in the **Lancet Commission**.



CALLS FOR EARLY TESTING

Prostate cancer cases in India set to double by 2040: Lancet

ANURADHA MASCARENHAS
PUNE, APRIL 6

TWO YEARS ago, a 64-year-old general surgeon in Pune complained of backache and was diagnosed with an advanced stage of prostate cancer that had already spread to his spine. Yet he had no early symptoms like difficulty in urination, which, Indian men, like hers, are being diagnosed in late stages and succumbing to the disease, says a latest Lancet Commission paper, which has projected prostate cancer incidence in India to surge sharply by 2040.

According to the International Agency for Research on Cancer projections, which Lancet has factored in its analysis, prostate cancer incidence in India will double to about 71,000 new cases per year by 2040. Prostate cancer accounts for three per cent of all cancers in India, with an estimated 33,000-42,000 new cases diagnosed annually.

"A large proportion of patients in India are diagnosed in advanced stages which means that the cancer has spread at the time of diagnosis. This leads to 30 per cent (30,000-20,000) patients die of their disease," says Dr Vedang Murthy, Professor, Department of Radiation Oncology and Convener, Uro-Oncology Disease Management Group, Tata Memorial Centre, who is among the authors of the Lancet Commission on Prostate Cancer.

As per the Lancet Commission report, cases of prostate cancer are projected to double from 1.4 million per year in 2020 to 2.9 million per year by 2040 worldwide, with low and middle-income countries predicted to see the highest increase. The findings will be presented at the European Association of Urology Congress on April 6. Prostate cancer has not received adequate attention for decades. It is the fifth leading cause of cancer death among men.

This surge can be prevented, according to Dr Murthy, provided all men over 60 get tested early and those in the high-risk group are advised for breast screening after 40. This will pick up the cancer at a treatable stage than men who consult a doctor when it's too late. "Early detection and education programmes will help in this regard," says Richard James, lead author of the Commission, Professor of Prostate and Bladder Cancer Research at the Institute of Cancer Research, London.

Why are cancer cases rising in India?

Ageing populations and increasing life expectancy mean there will be higher numbers of older men in the coming years. "Also rampant corporate health checkups that include a Prostate-Specific Antigen (PSA) test, which measures protein produced by both cancerous and benign tissue in the prostate glands, is pushing up numbers," Dr Murthy says. The main risk factors are age and genetics, which is adding to him, are associated by additional factors like smoking, obesity, a poor diet and lifestyle.

Why early awareness, detection are important

Prostate cancer may cause no signs or symptoms in the early stages, and is often found in advanced stages that patients report symptoms like trouble urinating, bone pain, blood in the semen or urine and others. "You may manage your lifestyle but early screening in Indian men, especially those with a family history is key. While general screening of the population is not recommended, older men with symptoms or prostate enlargement like frequent and night-time urination, weak urine stream and pain or burning should seek timely medical attention and have a PSA blood test done. This simple and inexpensive blood test is widely and easily available even in smaller towns," says Dr Murthy.

The UK has tried affordable checkups that include a Prostate-Specific Antigen (PSA) test, which measures protein produced by both cancerous and benign tissue in the prostate glands, is pushing up numbers," Dr Murthy says. The main risk factors are age and genetics, which is adding to him, are associated by additional factors like smoking, obesity, a poor diet and lifestyle.

SYMPTOMS TO LOOK OUT FOR

- Difficult or disturbed urine flow
- Frequent urination, especially at night
- Inability to empty the bladder completely
- Pain or burning during urination
- Change in bowel habits
- Swelling or fluid build-up in the legs or feet
- Blood in the urine or semen
- Pain in the back, hips or pelvis
- Painful ejaculation
- Unexplained weight loss

PSA tests — to high-risk men in London aged 45 and over.

Dr Kavitesh Bokil, a noted surgical oncologist in Pune, suggests taking a digital rectal examination (DRE) test to check problems in the urine flow. The urine accumulates in the bladder. It is like a flush tank, where there is dribbling of urine but it is still accumulated in the bladder by almost 1 to 1.5 litres," he adds. The Lancet authors have also recommended DRE, biopsy and PSA tests to screen men at high risk of prostate cancer in high-income countries.

Match diagnosis with expanding therapies

The Lancet Commission has one megawatt gamma radiotherapy unit per million people. To meet this recommendation, India would need an additional 600 or so units to ensure that the 800,000 people with cancer who require radiotherapy each year can be adequately treated. Access to chemotherapy is also limited in newly in urban areas. Coverage of modern radiotherapy treatments within government health schemes has improved but the poorest sections have little access even to palliative radiotherapy, the Lancet Commission authors have said.

Opioid use for pain relief in late-stages is another challenge. In 1985, the Indian Government adopted stringent legislation to regulate narcotic misuse and as a result, the per capita legal use of morphine decreased by 97 per cent, which severely limits access for pain management. An amendment to the Narcotic Drugs and Psychotropic Substance Act in 2014 improved opioid access, but there is a lag in implementation across the country.

- **More on News:**
  - Prostate cancer is cancer that occurs in the prostate.
  - Prostate cancer, which accounts for 15 per cent of all male cancers, is already a major cause of death and disability.
  - It is the most common form of male cancer in more than half of the world's countries.
  - The currently available prostate cancer screening is the PSA test — a blood test that measures

protein levels called **prostate-specific antigen (PSA).**

- **Prostate**
  - The prostate is below the bladder (the hollow organ where urine is stored) and in front of the rectum (the last part of the intestines).
  - Behind the prostate are glands called **seminal vesicles,** which make most of the fluid for semen. The **urethra**, which is the tube that carries urine and semen out of the body through the penis, goes through the center of the prostate

5. New map of universe may open a window to dark energy
GS 3 (Science and Tech)

3D map of universe may open a window to dark energy

Researchers, including team from India, publish finding based on observations by Dark Energy Spectroscopic Instrument

AMITABH SINHA
NEW DELHI, APRIL 4

AN INTERNATIONAL team of researchers has just released the most comprehensive "three-dimensional" map of the universe, which, scientists hope, could reveal some clues about dark energy, the mysterious force that is believed to be causing the universe to expand uncontrollably.

The researchers, including an Indian team led by Shadab Alam at the Tata Institute of Fundamental Research in Mumbai, has published its findings from the first year of observations by the Dark Energy Spectroscopic Instrument, or DESI, a unique piece of equipment that, once fitted over a telescope, can capture light from 5,000 galaxies at the same time.

Using DESI, which is mounted over the Mayall 4-Meter Telescope in Arizona, United States, researchers have been able to measure light from six million galaxies — some of which existed as far back as 11 billion years ago — to prepare the most detailed map of the universe as yet with very precise information about the distances between these galaxies.

"The key thing is that we have been able to measure the distances between these galaxies with a very high degree of accuracy. That is why we call it a three-dimensional map. Otherwise, we have a catalogue of tens of billions of objects in the universe. We have identified these objects, but for most of them we don't know how far they are from us. Knowing the precise distances of the galaxies is crucial because that allows us to calculate the expansion rate of the universe," Alam told *The Indian Express*. And that, scientists hope, could offer them their first clues into the mystery of dark energy that is supposed to make up almost 70 per cent of the universe but about which nothing is known.

The hypothesis of dark energy comes mainly from the observed phenomenon of the universe expanding at a rapid rate. The vast empty spaces between stars and galaxies have been measured to be expanding at an accelerating pace, despite the countervailing force of gravitation that has the effect of pulling things together. Scientists have been unable to find any explanation for this rapid expansion, and have been forced to hypothesise that there must be some "dark" energy causing this expansion.

Understanding the nature of dark energy is one of the fundamental problems in science right now, because it can offer key insights into the origin and evolution of the universe, as well as its eventual fate. It can reveal new fundamental forces at work, and could unravel our entire knowledge of the physical world. The problem is that, so far, scientists have not been able to figure out even the first piece of the puzzle.

But the data from DESI is causing some excitement.

"There is already a slight hint of new physics in the data from DESI. It is possible that it eventually turns out to be trivial, but there is promise. Also, right now we have been able to analyse only one year of observational data from DESI. It is scheduled to run for five years. This March 31, DESI completed three years of operations," Alam said.

One of them is in the measurement of the expansion rate of universe. The DESI collaboration has measured that the expansion rate of the universe was increasing by 68.5 km per second after every 3.26 million light years of distance.

"From the scientific point of view, knowing this expansion rate with high precision is extremely significant. It can give us our first clues into the behaviour of dark energy," Alam said.

DESI is a collaboration of more than 900 researchers in institutions across the world. From India, TIFR is the only participating institution.

- **Why in News:** An international team of researchers has released the most comprehensive "three-dimensional" map of the universe. Scientists hope that this development could reveal some clues about dark energy.
- **Ordinary matter and Dark Matter**
  - **Normal Matter**
    - Normal matter makes up everything we can directly observe. We can view it in visible light with our own eyes or through a telescope that can detect light we can't see, like ultraviolet or infrared.
    - Most normal matter is made up of atomic particles: protons, neutrons, and electrons. It can exist as a gas, solid, liquid, or plasma of charged particles.
    - While normal matter is everywhere in our daily lives, it composes less than 5% of the total universe.
  - **Dark Matter**
    - Like ordinary matter, dark matter takes up space and holds mass. But it doesn't reflect, absorb, or radiate light – at least not enough for us to detect yet.
    - While scientists have measured that dark matter makes up about 27% of the cosmos, they're not sure what it is.
    - Scientists believe that it forms a huge, web-like structure throughout the universe. This structure acts like a gravitational framework, pulling most of the regular matter in the cosmos towards it.
    - They've determined that dark matter isn't composed of known particles of matter. The search for what makes up dark matter continues.
- **Dark Energy**
  - **About**
    - Dark energy is a mysterious form of energy that astronomers believe is causing the universe to expand at an accelerated rate.
    - Some describe dark energy as a **negative pressure that pushes space outward**. However, it's not known if dark energy has the effect of any type of force.
    - Dark energy may compose roughly 68% of the universe, but scientists know even less about it than they do about dark matter.
  - **Nature of Dark energy**
    - Dark energy, in contrast to both forms of matter (ordinary matter & Dark matter), is **relatively uniform** in time and space.
    - It is gravitationally repulsive, not attractive, within the volume it occupies. The nature of dark energy is still not well understood.
    - Dark energy is detected by its effect on the rate at which the universe expands and its effect on the rate at which large-scale structures such as galaxies and clusters of galaxies form through gravitational instabilities.
  - **Need to study the nature of dark energy**
    - It can offer key insights into the origin and evolution of the universe, as well as its eventual fate.
    - It can reveal new fundamental forces at work, and could unravel our entire knowledge of the physical world.
- **About Dark Energy Spectroscopic Instrument (DESI)**
  - DESI is a unique piece of equipment that, once fitted over a telescope, can capture light from 5,000 galaxies at the same time.
    - DESI is a collaboration of more than 900 researchers in institutions across the world. **From India, TIFR (Tata Institute of Fundamental Research) is the only participating institution.**
  - Using DESI, which is mounted over the Mayall 4-Meter Telescope in Arizona, United States, researchers have been able to measure light from six million galaxies — some of which existed as far back as 11 billion years ago.
  - This was used to prepare the most detailed map of the universe as yet.
- **Key highlights of the study using DESI**
  - **3-D Map of Universe**
    - Using the data obtained from the study by DESI, scientists were able to measure the distances between these galaxies with a very high degree of accuracy.
    - As result, they have been able to create 3D map of the universe.
  - **Measurement of the expansion rate of universe**
    - The DESI collaboration has measured that the expansion rate of the universe was increasing by 68.5 km per second after every 3.26 million light years of distance, a unit astronomers define as megaparsec.

6. Agni-Prime Missile
GS 3 (Science and Tech)

- **Why in News:** The new generation ballistic missile Agni-Prime was successfully flight-tested by the Strategic Forces Command (SFC) along with the Defence Research and Development Organisation (DRDO) from the Dr APJ Abdul Kalam Island off the coast of Odisha
- **About Agni-Prime Missile:**
  - It is a **nuclear-capable** new-generation advanced variant of the Agni class of missiles. It is a **two-stage canisterised** missile with a maximum **range of 1,000 to 2,000 km.**
  - It is lighter than all the earlier Agni series of missiles. It weighs at least 50 per cent less than the Agni 3 missile and has new guidance and propulsion systems.
  - It can be **transported by road and rail** and stored for longer periods, significantly reducing the time required for preparation and launch. The missile uses a **cold launch mechanism** and can be fired in salvo mode.
- **What are Ballistic Missiles?**
  - These are launched directly into the **upper layers of the earth's atmosphere**. They can travel outside the atmosphere, where the warhead detaches from the missile and falls towards a predetermined target.
  - They are rocket-propelled self-guided weapons systems which can carry conventional or nuclear munitions. They can be launched from **aircraft, ships and submarines and land.**

Night launch of 'Agni Prime' missile successful

PRESS TRUST OF INDIA
NEW DELHI, APRIL 4

INDIA HAS successfully carried out a night launch of new generation nuclear capable ballistic missile 'Agni Prime' from the Abdul Kalam Island off the coast of Odisha, boosting the country's strategic deterrence capability.

The defence ministry said the test-flight was carried out on Wednesday evening and it met all the trial objectives, validating the reliable performance, as confirmed from the data captured by a number of range sensors deployed at different locations.

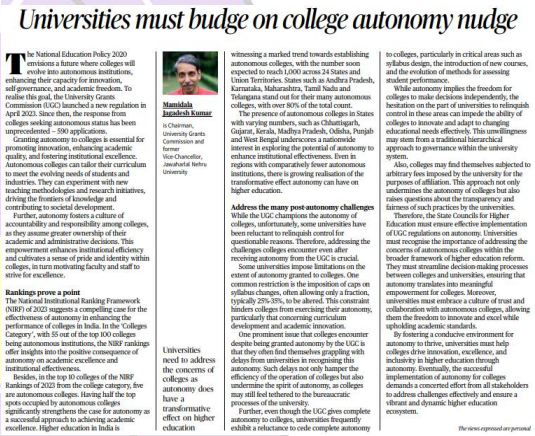
The Strategic Forces Command (SFC), along with Defence Research and Development Organisation (DRDO), carried out the flight test of the missile that has a strike range of 1,000 to 2,000 km.

Defence Minister Rajnath Singh congratulated the DRDO, SFC and the armed forces and said the induction of the missile will be an excellent force multiplier for the military. The launch was witnessed by Chief of Defence Staff Gen Anil Chauhan, the Chief of Strategic Forces Command and senior officials from the DRDO and the Army.

'Agni Prime' being flight-tested from the APJ Abdul Kalam Island off the coast of Odisha on Thursday. PTI

7. Universities Must Budge on College Autonomy Nudge
GS 2 (Education)

- **Why in News:**
  - **The National Education Policy 2020 envisages a future where colleges evolve into autonomous institutions**, characterised by innovation, self-governance, and academic freedom.
  - In April 2023, **the University Grants Commission (UGC) launched regulations** to facilitate this transition, resulting in an **unprecedented response with 590 colleges seeking autonomous status.**
  - **Granting autonomy to colleges is seen as pivotal for promoting innovation,** enhancing academic quality, and fostering institutional excellence.
- **Benefits of College Autonomy**
  - **Flexibility in Curriculum Development**
    - Autonomous colleges have the freedom to design their **curriculum according to the specific needs and demands of their students, industries, and local communities.**
    - This flexibility enables them to offer innovative courses, update existing ones, and integrate interdisciplinary approaches, ensuring that graduates are well-prepared for the dynamic job market and societal challenges.
  - **Encouragement of Research Initiatives**
    - Autonomous colleges are **better positioned to promote research culture among faculty and students.**
    - Additionally, **autonomy facilitates collaborations with industries, other academic institutions,** and research organisations, fostering interdisciplinary research and knowledge exchange.
  - **Responsive Academic Governance**
    - This **decentralised governance structure allows for quicker responses** to emerging trends, opportunities, and challenges in higher education.
    - It also **promotes transparency and inclusivity in decision-making processes**, involving various stakeholders such as faculty, students, alumni, and industry experts.
  - **Promotion of Entrepreneurship and Innovation, Critical Thinking**
    - Autonomy **creates an entrepreneurial mindset among college stakeholders by encouraging initiatives such as startup incubators**, entrepreneurship development cells, and industry-academia partnerships.
    - Colleges **can offer courses in entrepreneurship, provide mentorship to aspiring entrepreneurs**, and facilitate access to funding and networking opportunities, thereby contributing to economic growth and job creation.
    - **Autonomous colleges prioritise the cultivation of critical thinking**, creativity, and problem-solving skills among students.
- **Positive Impact of College Autonomy: Evidence from Rankings**
  - The National Institutional Ranking Framework (NIRF) of 2023 highlights the positive impact of autonomy on academic excellence, with **a significant portion of top-ranked colleges being autonomous institutions.**
  - Besides, **in the top 10 colleges of the NIRF Rankings of 2023 from the college category, five are autonomous colleges.**
  - Having half the top spots occupied by autonomous colleges significantly strengthens the case for autonomy as a successful approach to achieving academic excellence.
  - Higher education in India is witnessing a marked trend towards establishing autonomous colleges, **with the number soon expected to reach 1,000 across 24 States and Union Territories.**



Universities must budge on college autonomy nudge

The National Education Policy 2020 envisions a future where colleges will evolve into autonomous institutions, enhancing their capacity for innovation, self-governance, and academic freedom. To realise this goal, the University Grants Commission (UGC) launched a new regulation in April 2023. Since then, the response from colleges seeking autonomous status has been unprecedented – 590 applications.

Granting autonomy to colleges is essential for promoting innovation, enhancing academic quality, and fostering institutional excellence. Autonomous colleges can tailor their curriculum to meet the evolving needs of students and industries. They can experiment with new teaching methodologies and research initiatives, driving the frontiers of knowledge and contributing to societal development.

Further, autonomy fosters a culture of accountability and responsibility among colleges, as they assume greater ownership of their academic and administrative decisions. This empowerment enhances institutional efficiency and cultivates a sense of pride and identity within colleges, in turn motivating faculty and staff to strive for excellence.

Rankings prove a point

The National Institutional Ranking Framework (NIRF) of 2023 suggests a compelling case for the effectiveness of autonomy in enhancing the performance of colleges in India. In the 'Colleges Category', with 55 out of the top 100 colleges being autonomous institutions, the NIRF rankings offer insights into the positive consequence of autonomy on academic excellence and institutional effectiveness.

Besides, in the top 10 colleges of the NIRF Rankings of 2023 from the college category, five are autonomous colleges. Having half the top spots occupied by autonomous colleges significantly strengthens the case for autonomy as a successful approach to achieving academic excellence. Higher education in India is witnessing a marked trend towards establishing autonomous colleges, with the number soon expected to reach 1,000 across 24 States and Union Territories. States such as Andhra Pradesh, Karnataka, Maharashtra, Tamil Nadu and Telangana stand out for their many autonomous colleges, with over 80% of the total count.

The presence of autonomous colleges in States with varying numbers, such as Chhattisgarh, Gujarat, Kerala, Madhya Pradesh, Odisha, Punjab and West Bengal underscores a nationwide interest in exploring the potential of autonomy to enhance institutional effectiveness. Even in regions with comparatively fewer autonomous institutions, there is growing realisation of the transformative effect autonomy can have on higher education.

Address the many post-autonomy challenges

While the UGC champions the autonomy of colleges, unfortunately, some universities have been reluctant to relinquish control for questionable reasons. Therefore, addressing the challenges colleges encounter even after receiving autonomy from the UGC is crucial.

Some universities impose limitations on the extent of autonomy granted to colleges. One common restriction is the imposition of caps on syllabus changes, often allowing only a fraction, typically 25%-35%, to be altered. This constraint hinders colleges from exercising their autonomy, particularly that concerning curriculum development and academic innovation.

One prominent issue that colleges encounter despite being granted autonomy by the UGC is that they often find themselves grappling with delays from universities in recognising this autonomy. Such delays not only hamper the efficiency of the operation of colleges but also undermine the spirit of autonomy, as colleges may still feel tethered to the bureaucratic processes of the university.

Further, even though the UGC gives complete autonomy to colleges, universities frequently exhibit a reluctance to cede complete autonomy to colleges, particularly in critical areas such as syllabus design, the introduction of new courses, and the evolution of methods for assessing student performance.

While autonomy implies the freedom for colleges to make decisions independently, the hesitation on the part of universities to relinquish control in these areas can impede the ability of colleges to innovate and adapt to changing educational needs effectively. This unwillingness may stem from a traditional hierarchical approach to governance within the university system.

Also, colleges may find themselves subjected to arbitrary fees imposed by the university for the purposes of affiliation. This approach not only undermines the autonomy of colleges but also raises questions about the transparency and fairness of such practices by the universities.

Therefore, the State Councils for Higher Education must ensure effective implementation of UGC regulations on autonomy. Universities must recognise the importance of addressing the concerns of autonomous colleges within the broader framework of higher education reform. They must streamline decision-making processes between colleges and universities, ensuring that autonomy translates into meaningful empowerment for colleges. Moreover, universities must embrace a culture of trust and collaboration with autonomous colleges, allowing them the freedom to innovate and excel while upholding academic standards.

By fostering a conducive environment for autonomy to thrive, universities must help colleges drive innovation, excellence, and inclusivity in higher education through autonomy. Eventually, the successful implementation of autonomy for colleges demands a concerted effort from all stakeholders to address challenges effectively and ensure a vibrant and dynamic higher education ecosystem.

Manisha Jagadesh Kumar is Chairman, University Grants Commission and former Vice-Chancellor, Jawaharlal Nehru University

Universities need to address the concerns of colleges as autonomy does have a transformative effect on higher education

The views expressed are personal

- **States like Andhra Pradesh, Karnataka, Maharashtra, Tamil Nadu, and Telangana lead in establishing autonomous colleges**, indicating a nationwide interest in exploring autonomy's potential.

- **Potential Post-Autonomy Challenges Faced by Colleges**
  - **Limitations Imposed by Universities**
    - Despite being granted autonomy by the UGC, **some universities may impose restrictions on the extent of autonomy enjoyed by colleges.**
    - This could include caps on syllabus changes, limiting colleges to modifying only a fraction of their curriculum.
    - **Such limitations hinder colleges' ability to innovate and tailor their academic offerings** to meet evolving needs effectively.
  - **Delays in Recognition of Autonomy and Reluctance to Cede Complete Autonomy**
    - **Colleges may still find themselves entangled in bureaucratic processes** controlled by the university, limiting their ability to make independent decisions.
    - While the UGC grants complete autonomy to colleges, **some universities may exhibit reluctance to cede control,** particularly in critical areas such as syllabus design, introduction of new courses, and assessment methods.
    - **This reluctance may stem from a traditional hierarchical approach to governance within the university system,** where centralized control is favoured over decentralised decision-making.
  - **Challenges in Implementing Internal Policies**
    - Autonomous colleges **may encounter challenges in implementing internal policies** and procedures without interference from external authorities.
    - **This could include resistance from faculty or staff accustomed to the traditional hierarchical structure** or difficulty in enforcing decisions without the backing of university authorities.
  - **Risk of Inconsistencies in Quality Assurance**
    - With autonomy comes the responsibility of maintaining and enhancing academic standards.
    - However, **there is a risk that colleges may vary in their approach to quality assurance,** leading to inconsistencies in educational offerings and outcomes.
  - **Navigating Regulatory Compliance**
    - Navigating the regulatory requirements while maintaining autonomy can be challenging, particularly for colleges with limited administrative capacity or expertise.
    - **Collaboration with regulatory bodies and adherence to best practices can help colleges navigate these challenges**

- **Recommendations For the Effective Implementation of College Autonomy**
  - **Empower State Councils for Higher Education**
    - **State Councils for Higher Education play a crucial role in overseeing the implementation of UGC regulations** on autonomy.
    - To ensure effective implementation, these councils should be empowered with sufficient authority, resources, and expertise.
    - **They should provide guidance and support to colleges seeking autonomy**, streamline approval processes, and monitor compliance with regulatory requirements.
  - **Facilitate Collaboration between Colleges and Universities**
    - **Universities must recognise the importance of autonomy** in promoting institutional excellence and collaborate with autonomous colleges in a spirit of trust and partnership.
    - **This collaboration should involve regular communication, joint decision-making forums**, and shared resources.
    - **Universities should support colleges in their efforts to innovate, excel, and uphold academic standards** while respecting their autonomy.
  - **Streamline Decision-Making Processes**
    - To facilitate autonomy, **universities should streamline decision-making processes between colleges and university authorities.**
    - This includes delegating decision-making authority to college governing bodies, establishing clear guidelines and procedures for decision-making, and minimizing bureaucratic hurdles.
    - **By empowering colleges to make timely and informed decisions, universities can foster a culture of autonomy** and accountability.
  - **Address Concerns of Autonomous Colleges**
    - **Universities must address the concerns and challenges faced by autonomous colleges** within the broader framework of higher education reform.
    - This includes addressing limitations imposed by universities, ensuring timely recognition of autonomy, and resolving disputes or conflicts that may arise.
    - **Universities should adopt a proactive approach to address these concerns**, soliciting feedback from colleges and taking corrective action where necessary.
  - **Provide Capacity Building Support**
    - Autonomous colleges **may require support and capacity building initiatives to effectively exercise autonomy.**
    - Universities should provide training, workshops, and resources to college administrators, faculty, and staff on topics such as curriculum development, quality assurance, financial management, and governance.
    - **This capacity building support will enable colleges to leverage autonomy** to drive innovation, excellence, and inclusivity in higher education.

- **Conclusion**
  - **The journey towards institutional excellence through college autonomy comes with numerous benefits**, evidenced by the positive impact on academic quality and innovation.
  - However, challenges such as **limitations imposed by universities and delays in recognition hinder the realisation of autonomy's full potential.**

- **Addressing these challenges requires collective action from stakeholders to create a conducive environment where autonomy thrives**, ultimately driving innovation, excellence, and inclusivity in higher education.

8. RBI defers exchange traded currency derivatives norms
GS 3 (Economy)

- **Why in News:**
  - RBI has deferred the implementation of its new norms for exchange traded currency derivatives (ETCD) market to May 3 from April 5.
  - This comes after market participants raised concerns over participation in the ETCD market. As the April 5 deadline approached, there was a sharp rise in volatility in the forex market.

DEFERRED TO MAY 3 FROM APRIL 5

RBI defers exchange traded currency derivatives norms

Says framework for ETCD consistent; No change in policy approach

HITESH VYAS
MUMBAI, APRIL 4

THE RESERVE Bank of India (RBI) on Thursday deferred the implementation of its new norms for exchange traded currency derivatives (ETCD) market to May 3 from April 5. This comes after market participants raised concerns over participation in the ETCD market and the ruin up to the April 5 deadline saw a sharp rise in volatility in the forex market.

"In view of feedback received and recent developments, it has been decided that these directions (on ETCD) will now come into effect from Friday May 3, 2024," the RBI said in a release. It, however, emphasised that the regulatory framework for ETCDs has remained consistent over the years and that there has been no change in the policy approach.

In January this year, the RBI released a new framework for hedging of foreign exchange risks, which was to be implemented from April 5, 2024. The new norm allowed users to take positions (long or short) in foreign exchange derivatives market, without having to establish existence of underlying exposure, up to a single limit of $100 million equivalent across all currency pairs involving the rupee, put together, and combined across all recognised stock exchanges.

However, the regulator asked stock exchanges to inform users that while they are not required to establish the existence of underlying exposure, they must ensure the existence of a valid underlying contracted exposure which has not been hedged using any other derivative contract and should be in a position to re-establish the same when required.

On Thursday, the RBI said the regulatory framework for participation in ETCDs involving the rupee (INR) is guided by the provisions of the Foreign Exchange Management Act (FEMA), 1999 and regulations framed thereunder which mandate that currency derivative contracts involving the rupee — both over-the-counter (OTC) and exchange traded — are permitted only for the purpose of hedging of exposure to foreign exchange rate risks.

The regulatory framework has been reiterated in the Foreign Exchange Management (Foreign Exchange Derivative Contracts) Regulations, which states that a person may enter into an ETCD contract involving the rupee only for the purpose of hedging a contracted exposure.

For the purpose of ease of doing business, the RBI permitted users of ETCDs to take positions up to $10 million per exchange without having to provide documentary evidence to establish the underlying exposure but did not provide any exemption from the requirement of having the exposure, the release said.

"Accordingly, users are expected to ensure compliance with the requirement of having underlying exposure," the regulator said. The limit of $10 million per exchange was subsequently amended and currently stands at a single limit of $ 100 million combined across all exchanges.

The RBI said its January 5, 2024 master direction reiterates the regulatory framework for participation in ETCDs involving the rupee without any change. "As hitherto, participants with a valid underlying contracted exposure can continue to enter into ETCDs involving the rupee up to a limit of $100 million without having to produce documentary evidence of the underlying exposure," the release said.

In order to comply with the RBI's April 5 deadline, foreign exchange brokers asked their clients to close their derivative positions before the stipulated time period to meet the regulatory norms. In a run up to this deadline, the forex market saw an increase in volatility. On Wednesday, the rupee closed at a record low of 83.44 against the US dollar. The domestic currency ended flat on Thursday.

NEW FRAMEWORK RELEASED IN JAN

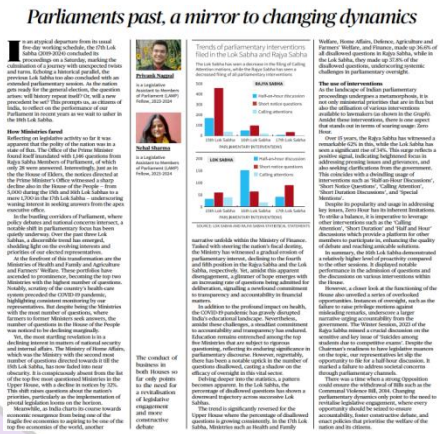
"In view of feedback received and recent developments, it has been decided that these directions (on ETCD) will now come into effect from Friday May 3, 2024"
RESERVE BANK OF INDIA

- **Exchange Traded Derivatives (ETD)**
  - **About**
    - An Exchange Traded Derivative is a **standardized financial contract** that is traded in stock exchanges in a regulated manner.
    - These contracts derive their value from the performance of an underlying asset, such as stocks, bonds, commodities, or currencies.
    - They are subject to the rules framed by market regulators such as the Securities and Exchange Board of India (SEBI) in India.
  - **Examples**
    - **Futures Contracts**
      - Futures contracts are a type of exchange-traded derivative.
      - They involve an agreement to buy or sell an asset, like wheat or oil, at a predetermined price on a specified future date.
      - For example, a farmer might use a futures contract to lock in a price for their wheat crop before it's harvested.
    - **Options Contracts**
      - Options contracts give the holder the right, but not the obligation, to buy or sell an asset at a specific price within a certain time frame.
      - For instance, an investor might purchase a call option on a stock, giving them the right to buy it at a set price within the next six months.
    - **Exchange-Traded Funds (ETFs)**
      - ETFs are investment funds traded on stock exchanges, and they often hold **a portfolio of assets such as stocks, bonds, or commodities.**
      - ETFs can be considered exchange-traded derivatives because their value is derived from the value of the underlying assets they hold.
  - **Types**
    - **Stock ETDs:**
      - The first in the list of Exchange Traded Derivatives is the stock segment.
      - The Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE) deal exclusively in stock derivatives in India.
      - The types of stock derivatives are Stock Forwards and Stock Options.
    - **Index ETDs**
      - These types of Exchange Traded Derivatives trade on the major stock indices.
      - One can purchase or sell both **index forwards and index options**.
      - However, unlike stock options where one can opt for settlement either in cash or via delivery of stocks, **index options have to settle in cash.**
    - **Currency ETDs**
      - Here, one has the option to trade as per the price movement of the currencies in the stock exchange.
      - Unlike OTC(Over the counter) derivatives trade in currency, ETDs allow for standardized contracts only across the specified pairs of currencies.
      - Every country has a currency, and its value fluctuates based on the value of other countries' currencies.
      - For example, the price of INR keeps fluctuating compared to USD.
      - Exchange-traded currency contracts work on the same principle of buying at a low price and selling at a higher price.
      - However, exchange-traded currency contracts are always bought in pairs. E.g., Indian Rupee vs United States Dollar, Indian Rupee vs Euro etc.
    - **Commodity ETDs**
      - These types of Exchange Traded Derivatives are traded on the price fluctuations of scores of commodities.
      - In India, one can trade in commodities futures at the Multi Commodity Exchange of India Ltd (MCX).
      - Some of the examples of standardized contracts on commodities include gold, crude oil, silver, natural gas, copper, zinc, etc.
    - **Bond ETDs**
      - These types of Exchange Traded Derivatives involve trading in bonds.
      - For instance, the NSE has an exclusive platform to trade in bond derivatives products.

- **Background: New norms published by RBI**
  - In January 2024, the RBI introduced a new set of rules for managing foreign exchange risks, which were set to start on April 5, 2024.
  - The new norms said **that only traders with an underlying forex exposure can trade in currency derivatives.**
    - Underlying in derivatives contracts refers to the order bill or receipt in the case of exporters or importers, and documents to support the transaction in the case of remittances.
  - For instance, if an Indian exporter expecting payment in US dollars in three months. This can be used as an underlying contracted exposure.
    - Traders use currency futures to mitigate potential losses from adverse exchange rate movements.
    - By entering a futures contract to sell US dollars at a predetermined rate, the exporter locks in a viable exchange rate.
  - It said users must ensure the existence of a valid underlying contracted exposure which has not been hedged using any other derivative contract, and they should be in a position to establish the same if required.
  - The circular, issued on Jan 5, retained most of the earlier regulations, including a requirement that trades over $100 million would require proof of exposure
    - Earlier, this requirement of proof for higher value trades was being interpreted to mean that those who **did not have any exposure** could participate in lower value transactions.
    - However, the Jan 5 circular carried a footnote **requiring exchanges to ask clients to trade only against exposures.**
- **What was the practice till now?**
  - Till now, currency traders were free to trade in the derivative market, by either **declaring or not declaring underlying exposure**.
  - Currency derivatives are a tool for hedging forex risk.
- **Why traders are opposing this move?**
  - Exchange traded derivative volume is going to dip
    - So far, most transactions on exchanges were done by **clients from the retail segment** who could not transact in the OTC (over the counter) market as banks asked for the **underlying** and the users did not have it.
    - Now, after the new norm, the exchange traded derivative volume is going to dip by nearly 80 percent as most of the volumes are coming from proprietary desk and retail which hardly have any underlying exposure.
  - **Potential to virtually kill trading on exchanges**
    - Experts claim that by the above circular RBI has decided to curb trades on exchanges, and this had the potential to virtually kill trading on exchanges since the liquidity came from retail.
  - **Aimed at maintaining a tight leash on the markets**
    - Dealers feel that RBI's move to curb speculation is aimed at maintaining a tight leash on the markets.
    - However, speculation is needed in a market if the objective is to:
      - move toward fuller capital account convertibility,
      - increase rupee's influence globally, and
      - prevent investors from moving to unregulated markets like cryptocurrency

6th April, 2024

1. Parliaments Past, A Mirror to Changing Dynamics
GS 2 (Legislature)


Parliaments past, a mirror to changing dynamics

- **Why in News:**
  - In an atypical departure from its usual five-day working schedule, the 17th Lok Sabha (2019-2024) concluded its proceedings on a Saturday, **marking the culmination of a journey with unexpected twists and turns.**
  - This prompts a reflection **at the recent parliamentary performance, highlighting trends, challenges, and prospects for the upcoming 18th Lok Sabha.**
- **Parliamentary Trends and How Ministries Fared**
  - **Decline in Notices Directed at the PMO**
    - The **PMO faced 1,146 questions from Rajya Sabha Members of Parliament**, of which only 28 were answered.
    - Interestingly, **just as in the House of Elders, the notices directed at the Prime Minister's Office witnessed a sharp decline** also in the House of the People.
    - From 5,000 during the 15th and 16th Lok Sabhas to a mere 1,700 in the 17th Lok Sabha underscoring waning interest in seeking answers from the apex executive office.
  - **Shifting Parliamentary Focus**
    - Over the past Lok Sabhas, there has been **a noticeable shift in the focus of parliamentary discussions and debates.**
    - This **shift reflects the changing interests and priorities of elected representatives** as they respond to evolving societal, economic, and political dynamics.
  - **Rise of Health and Agriculture Ministries**
    - **Ministries related to health and agriculture have gained prominence** in parliamentary discourse, indicating increased scrutiny and attention on these critical sectors.
    - The significant number of questions directed towards the Ministries of Health and Family Welfare and Agriculture and Farmers' Welfare suggests a heightened awareness and concern about issues related to public health, healthcare infrastructure, agricultural productivity and farmer welfare.
    - **The increased focus on these ministries may be attributed to various factors such as public health crises**, agrarian distress, and the need for policy interventions to address related challenges.
  - **Decline in National Security Interest**
    - On the other hand, **there has been a decline in parliamentary interest in matters of national security and internal affairs.**
    - The reduced number of questions directed towards the Ministry of Home Affairs, which was previously a key focus area, raises questions about the shifting priorities of lawmakers and the perceived urgency of security-related issues.
    - **This decline in interest may reflect a perception among lawmakers that other pressing issues, such as healthcare, agriculture, and economic revival**, warrant greater attention and resources.
  - **Decline in Parliamentary Interest in Finance Ministry**
    - As India aims for economic resurgence and growth, the Ministry of Finance plays a crucial role in steering the nation's fiscal policies and economic trajectory.
    - However, **there has been a decline in parliamentary interest in the Finance Ministry, particularly in terms of the number of questions raised.**
    - Despite this decline, there are signs of increasing transparency and accountability efforts within the Ministry, as indicated by the rising rate of questions admitted for deliberation.
    - This suggests a renewed commitment to fiscal oversight and governance in financial matters.
- **An Analysis of Parliamentary Interventions**
  - **Rising Usage of Zero Hour**
    - **Zero Hour refers to a period during parliamentary proceedings where Members of Parliament can raise urgent matters** of public importance without prior notice.
    - The significant surge in the usage of Zero Hour interventions in both the Rajya Sabha and the Lok Sabha indicates an increased focus on addressing pressing issues and seeking clarifications from the government.
    - **Zero Hour allows MPs to draw attention to emerging issues, crises, or public concerns that require immediate attention**, thereby serving as a platform for responsive governance and accountability.
    - The rise in Zero Hour interventions **reflects a proactive approach by parliamentarians in engaging with critical issues** and holding the government accountable for its actions.
  - **Dwindling Usage of Other Interventions**
    - On the other hand, **there has been a decline in the usage of other parliamentary interventions such as 'Half-an-Hour Discussions', 'Short Notice Questions', 'Calling Attention', 'Short Duration Discussions',** and 'Special Mentions'.
    - These interventions provide avenues for in-depth discussions, seeking specific information, drawing attention to important matters, and highlighting specific grievances or concerns.
    - **The dwindling usage of these interventions may suggest a shifting parliamentary focus towards more immediate and urgent matters**, as reflected in the increased reliance on Zero Hour interventions.
- **Systematic Challenges and Missed Opportunities for Legislative Engagement**
  - **Systemic Challenges in Oversight**

- Despite the importance of parliamentary oversight in holding the government accountable, **there are systemic challenges that hinder its effectiveness.**
- One significant challenge is the **increase in the number of disallowed questions**, particularly in the Rajya Sabha.
- **This trend indicates obstacles in obtaining necessary information** and accountability from the government.
- The **high percentage of disallowed questions in key ministries such as Health and Family Welfare, Home Affairs, Defence, Agriculture and Farmers' Welfare**, and Finance raises concerns about transparency and responsiveness within these sectors.
- **These challenges highlight the need for reforms to streamline the oversight process, ensure greater access to information,** and strengthen mechanisms for holding the government accountable for its actions.

There will be no independent, sovereign Palestine

In today's Middle East, one thing is certain and another, highly probable. The certainty is that there will be no independent, sovereign Palestinian state, 'living side by side with Israel', as the cliché goes. Before October 7, 2023, there was some possibility of a Palestinian state emerging at some time, even with several caveats. Many rounds of negotiations took place between the two sides to work out a detailed road map of how the two-state solution would look. In January, 2001, in Taba, they came close to reaching an agreement.

Hamas versus the Palestinian Authority

Post October 7, governments around the world have resurrected the two-state formula and are repeating it parrot-like. However, the formula is as good as dead. As of today, there is hardly anyone in Israel supporting a Palestinian state. Their reasoning is logical from their point of view. Hamas today is more popular in the West Bank than it ever was. This means that if and when the war ends on whatever terms, elections will have to be held in the Palestinian territories to elect a government. Even before October 7, Hamas had a good following among West Bank Palestinians. Now, support for Hamas has grown many fold. No Israeli is prepared to countenance that eventuality.

What about the Palestinian Authority based in Ramalla? It is a much more moderate group and has in fact been cooperating or collaborating with Israel. The Palestinian Authority is thoroughly discredited among Israelis and Palestinians as being corrupt and ineffective. In even a reasonably open election, Hamas is sure to emerge as the party with a majority. Only if Hamas is totally and effectively eradicated would Israelis be willing to consider the possibility of a Palestinian state. And, the eradication of Hamas is just not going to happen.

Chinmaya R. Gharekhan served as India's Ambassador to the United Nations and as India's Special Envoy to the Middle East, 2005-09

Governments across the world may be backing the two-state formula, but it is as good as dead

This means that the war will go on. Rafah will be razed in the process of the Israel Defense Forces (IDF) destroying the remaining four battalions of Hamas militia. Even respectable revisionist Israeli scholars and historians support the invasion of Rafah.

But what about the 80 or 90 Israeli hostages that Hamas still holds? On this, the Israeli public seems divided. Nearly an equal number give priority to the return of hostages just as there are those who consider the eradication of Hamas to be of higher priority. Israel Prime Minister Benjamin Netanyahu assures his people that he will secure both these objectives and affirms his determination to proceed with the attack on Rafah, despite a public warning by Israel's strongest supporter, United States President Joe Biden.

The danger of wider conflict

The probability is of the Gaza war escalating into a wider, regional conflict. Mr. Biden is very concerned about this possibility and his Secretary of State, Antony J. Blinken, has been travelling in the region to prevent such an escalation and to secure some sort of a cease-fire. The much-delayed United Nations Security Council resolution of an immediate ceasefire, adopted on March 25, and made possible because of American abstention and supported by all the other 14 members, does not amount to much. It demands a pause in fighting only until the end of the Muslim holy month of Ramadan. Thereafter, the resolution, in effect, expresses the hope that the ceasefire will be extended and become lasting and comprehensive. Mr. Biden was forced to take this step out of domestic political considerations. Domestic politics everywhere increasingly guides and determines foreign policy.

Hamas does not seem to care about the huge loss of innocent lives and the destruction of infrastructure and housing. It might either underestimate Mr. Netanyahu's determination to proceed with the Rafah operation or to agree to its terms for a ceasefire such as the permanent withdrawal of Israeli forces and so on. Hamas is banking on the continued support of the international community for a quick and lasting ceasefire. For his part, Mr. Netanyahu will not stop the war until he accomplishes his objectives

Already, Israel and Hezbollah in Lebanon have been going at one another for some time now, causing casualties on both sides. Hezbollah has thousands of rockets and missiles aimed at Israel It might see the Gaza war as an ideal opportunity to launch a more deadly attack on Israel in support of Hamas.

Wars make strange bedfellows. Here, a staunchly Shia movement is supporting an equally staunch Sunni group! Tens of thousands of Israeli citizens have been evacuated from northern Israel. Given Israel's deadly attacks on Syrian territory including on the Iranian embassy Syria and Iran will surely retaliate, leading to another strong response by Israel. If that were to happen, there would be tremendous pressure on Egypt to join the fray. Egypt is under pressure to permit the people from Rafah to enter Egyptian territory when the IDF invades there. That, combined with the pressure of other Arab states, might make it difficult or even impossible for Egypt to stay out. Iran has missiles with a range that is long enough to hit Israel. All these actors might feel that such a 'golden' opportunity to eradicate Israel might not come again.

If this were to happen, the U.S. will go to Israel's help with whatever it might take. If this happens, can Russia be far behind?

Such a frightening scenario should scare everyone, everywhere. It might appear far-fetched at present, but we would be disregarding its probability at our own peril.

- **Missed Opportunities for Legislative Engagement**
  - Instances of oversight, **such as the failure to raise privilege motions against misleading remarks and missed discussions on critical issues**, underscore missed opportunities for legislative engagement.
  - **For example, the failure to address sensitive issues like student suicides due to competitive exams during the Winter Session, 2023** of the Rajya Sabha highlights a gap in addressing societal concerns through parliamentary channels.
  - **Missed opportunities for legislative engagement diminish the effectiveness of Parliament in addressing pressing issues**, fostering constructive debate, and enacting policies that prioritize the welfare of the nation and its citizens.

- **Way Forward**
  - **Revitalising Legislative Engagement**
    - There is a **pressing need to revitalise legislative engagement to ensure that Parliament effectively addresses pressing issues**, fosters constructive debate, and enacts policies that prioritize the welfare of the nation and its citizens.
    - **This can be achieved by encouraging active participation of MPs in parliamentary proceedings, promoting informed discussions on key issues**, and ensuring that every opportunity is seized to hold the government accountable for its actions.
  - **Enhancing Transparency and Accountability**
    - Parliament **must prioritise enhancing transparency and accountability in governance by strengthening mechanisms for parliamentary oversight** and scrutiny of government actions.
    - This could involve introducing reforms to streamline the processing of questions, ensuring timely responses from the government, and reducing the number of disallowed questions.
  - **Strengthening Parliamentary Committees**
    - **Parliamentary committees play a crucial role in scrutinising government policies and expenditures**, conducting inquiries, and making recommendations for legislative action.
    - There is a **need to strengthen the capacity and effectiveness of parliamentary committees** by providing adequate resources, training, and support to members.
- **Conclusion**
  - **The analysis of the 17th Lok Sabha's performance unveils both promising trends and challenges** in parliamentary functioning.
  - As the nation anticipates the 18th Lok Sabha, **it is imperative to address systemic challenges, revitalise legislative engagement, and ensure balanced utilisation of parliamentary interventions** to foster constructive debate and enact policies for the nation's welfare.

2. <u>There will be no independent, sovereign Palestine</u>

<u>GS 2 (International Relations)</u>

- **Why in News:** The ongoing **Israeli-Palestinian conflict** has drawn international attention due to escalating tensions and the potential for wider regional conflict.
- **Certainty of No Palestinian State:**
  - **Diminished Prospects:** Despite past negotiations and attempts to establish a two-state solution, the likelihood of an independent Palestinian state remains bleak.
  - **Erosion of Support**: Support for a Palestinian state among Israelis has waned, exacerbated by the rising popularity of Hamas, a militant group opposed to Israel's existence.
  - **Credibility Crisis**: The Palestinian Authority's perceived corruption and inefficacy have undermined its legitimacy, making the emergence of a moderate Palestinian government improbable.

India abstains from HRC vote calling Gaza ceasefire

Suhasini Haidar
NEW DELHI

India on Friday abstained on a resolution at the Human Rights Council that called upon Israel for an immediate ceasefire in Gaza, and the states to implement an arms embargo, which was adopted by the 47-member Council. While India's abstention is believed to be in line with previous votes on any HRC resolutions that call for "accountability", it did vote in favour of three other resolutions that criticised Israel for human rights violations against Palestinians, Israel's occupation of Syrian Golan, and called for the Palestinian right to self-determination.

All four resolutions were introduced at the HRC in Geneva by Pakistan on behalf of the Organisation for Islamic Cooperation.

While the Ministry of External Affairs did not issue any explanation for the vote, it is understood to follow previous abstentions on similar resolutions, and also in line with its vote at the UNGA in October 2023, since the HRC resolution (A/HRC/SS/L.30) failed to condemn Hamas, while condemning Israel's killing of more than 33,000 Palestinians, blockade of food and humanitarian aid into the area, and "forcible transfer" of civilians from one part of Gaza to another in the past six months.

The U.S., Germany and four other countries voted against the resolution, titled "Human rights situation in the Occupied Palestinian Territory, including East Jerusalem, and the obligation to ensure accountability and justice" and India joined France and Japan among 13 countries that abstained. However, a significant majority, 28 members, including Bangladesh, China, Maldives, the UAE, Indonesia, Brazil and South Africa, voted in favour.

India voted in favour of three other resolutions that were also adopted with large majorities on "Right of the Palestinian people to self-determination", "Human rights in the occupied Syrian" Golan, and "Israeli settlements in the Occupied Palestinian Territory, including East Jerusalem, and in the occupied Syrian Golan".

- **Probability of Wider Conflict:**

- **Involvement of Regional Actors**: The conflict's complexity is compounded by the involvement of regional actors like Hezbollah in Lebanon, which poses a significant threat to Israel.
- **Escalation Risk**: The conflict's potential to escalate into a broader regional conflict involving Israel, Lebanon, Syria, Iran, and possibly Egypt heightens the risk of instability.
- **Continued Hostilities:** Despite international efforts to secure a ceasefire, ongoing hostilities persist, driven by geopolitical dynamics and entrenched grievances.

3. UPI-based Cash Deposit Facility
GS 3 (Economy)

RBI to enable UPI for cash deposit

The RBI Governor said operational instructions on enabling UPI for cash deposit facility will be issued shortly; the RBI also decided to permit foreign investors in IFSC to invest in green bonds and to launch a mobile app for its Retail Direct scheme

The Hindu Bureau
MUMBAI

The Reserve Bank of India (RBI) has proposed to enable the Unified Payment Interface (UPI) for cash deposits considering the app's popularity and convenience.

RBI Governor Shaktikanta Das, while making a statement on developmental and regulatory policies, said, "Given the popularity and acceptance of UPI, and also the benefits seen from the availability of UPI for card-less cash withdrawal at ATMs, it is now proposed to facilitate cash deposit facility through the use of UPI."

Cash Deposit Machines (CDMs) deployed by banks enhance customer convenience while reducing cash-handling load on bank branches. The facility of cash deposit is presently available only through the use of debit cards.

The Governor said operational instructions on enabling UPI for cash deposit facility will be issued shortly.

In another measure, to facilitate wider non-resident participation in Sovereign Green Bonds (SGrBs), the RBI decided to permit eligible foreign investors in the International Financial Services Centre also to invest in such bonds.

A scheme for investment and trading in SGrBs by eligible foreign investors in IFSC is being notified separately in consultation with the Government and the IFSC Authority.

At present, foreign portfolio investors (FPIs) registered with SEBI are permitted to invest in SGrBs under different routes available for investment by FPIs in government securities.

The RBI also decided to introduce a mobile app for its Retail Direct scheme, introduced in November 2021. The scheme gives access to individual investors to maintain gilt accounts with RBI and invest in government securities. The scheme enables investors to buy securities in primary auctions and buy/sell securities through the NDS-OM platform.

More choice: The facility of cash deposit is presently available only through the use of debit cards. PTI

- **Why in News:** The **Reserve Bank of India** announced a proposal for a new **UPI-based cash deposit facility**.
- **More on News:**
  - UPI has primarily been used for peer-to-peer transactions, bill payments, merchant transactions and other digital payments.
  - Now, with the latest announcement, cash deposit at **Cash Deposit Machines (CDMs)** using UPI instead of needing an ATM/debit card will be possible.
- **UPI :**
  - Unified Payments Interface is a real-time payment system developed by the **National Payments Corporation of India (NPCI).**
  - It facilitates instant fund transfers between two bank accounts on a mobile platform, without requiring details of the beneficiary's bank account.

4. India abstains from UNHRC Gaza ceasefire resolution
GS 2 (International Relations)

- **Why in News:** India abstained in the **UN Human Rights Council** on a resolution that called for **an immediate ceasefire in Gaza** and also demanded that Israel immediately lift its illegal blockade on the strip.
- **The Resolution**
  - The resolution demanded that **Israel, the occupying Power, end its occupation of the Palestinian territory occupied since 1967, including East Jerusalem.**
  - It stressed that all efforts to end the Israeli-Palestinian conflict must be grounded in respect for international humanitarian law and international human rights law and relevant United Nations resolutions.
  - The resolution also called for an immediate ceasefire in Gaza, for immediate emergency humanitarian access and assistance and for the urgent restoration of basic necessities to the Palestinian population in Gaza.
- **United Nations Human Rights Council (UNHRC):**
  - The Human Rights Council is **an inter-governmental body** within the **United Nations system** responsible for strengthening the promotion and protection of human rights around the world.
  - **Formation:**
    - The Council was created by the **United Nations General Assembly in 2006**. It replaced the former United Nations Commission on Human Rights.
    - The **Office of the High Commissioner for Human Rights (OHCHR)** serves as the Secretariat of the Human Rights Council.
    - OHCHR is headquartered in **Geneva, Switzerland**.
  - **Members:** It is made up of **47 United Nations Member States** which are elected by the **UN General Assembly (UNGA).**
    - The Council's Membership is based on equitable geographical distribution. Seats are distributed as follows:
    i. **African States**: 13 seats
    ii. **Asia-Pacific States:** 13 seats

iii. **Latin American and Caribbean States**: 8 seats

iv. **Western European and other States**: 7 seats

v. **Eastern European States**: 6 seats

- Members of the Council serve for a **period of three years** and are not eligible for immediate re-election after serving two consecutive terms.

5. RBI Monetary Policy
GS 3 (Economy)

- **Why in News:** The Reserve Bank of India's Monetary Policy Committee unanimously decided to keep the key interest rates unchanged at 6.50 per cent for the seventh consecutive time. The policy stance is also maintained at 'withdrawal of accommodation'.

7TH TIME REPO RATE UNCHANGED AT 6.5%

RBI holds repo rate, says it's waiting for inflation 'elephant' to walk away

Bank retains FY25 projections for real GDP at 7% and inflation at 4.5%; projects inflation dip in Q2 below 4%

HITESH VYAS
MUMBAI APRIL 5

THE SIX-MEMBER Monetary Policy Committee (MPC) of the Reserve Bank of India (RBI) Friday kept the repo rate — the rate at which RBI lends money to banks to meet their short-term funding needs — unchanged for the seventh consecutive time at 6.5 per cent.

RBI Governor Shaktikanta Das with his deputies at the RBI headquarters in Mumbai, Friday. *Pradip Das*

It also indicated the possibility of retail inflation coming below the crucial level of four per cent in the second quarter (July-September) of FY 2025 raising expectations of a rate cut this fiscal.

The RBI last cut the repo rate by 40 basis points to 4 per cent

CONTINUED ON PAGE 2

- **Key Highlights**
  - **Inflation is moving closer to targets**. Retail inflation is projected for the current year at 4.5%. The RBI has been mandated by the government to maintain retail inflation at 4% with a 2% margin on either side.
  - **Core inflation** has declined steadily over the last nine months while fuel component remained in deflation for six straight months.
  - **Indian economy is projected to grow 7% this financial year**.
  - **Forex Reserve**: India continues to remain the largest receiver of remittances with the country's **foreign portfolio investment** seeing a significant turnaround.
  - The global economy has remained resilient and global trade is expected to grow faster in 2024.
- **Impact of the move**
  - An unchanged repo rate means the loan interest rates too are likely to remain unchanged.

Key-terms in the monetary policy review	
Repo rate	• Repo rate is an interest rate at which the RBI provides liquidity under the liquidity adjustment facility (LAF) to banks against the collateral of government and other approved securities. • **Currently, the repo rate is at 6.50 percent.**
Standing Deposit Facility (SDF) Rate	• SDF rate is a rate at which the RBI accepts uncollateralised deposits, on an overnight basis, from banks. • The SDF is also a financial stability tool in addition to its role in liquidity management. The SDF rate is placed at 25 basis points below the policy repo rate. • **Currently, SDF rate is at 6.25 percent.**
Marginal Standing Facility (MSF) Rate	• The penal rate at which banks can borrow, on an overnight basis, from the central bank by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a predefined limit (2 per cent). • **MSF rate currently stands at 6.75 percent.**
Fine Tuning Operations	• The main liquidity operation is supported by fine-tuning operations, overnight and/or longer tenor, to tide over any unanticipated liquidity changes during the reserve maintenance period. • In addition, the RBI conducts, if needed, longer-term variable rate repo/reverse repo auctions of more than 14 days.

Monetary policy stance	There are various stances: • **Accommodative Stance**, which means the central bank is prepared to expand the money supply to boost economic growth. • **Neutral stance** suggests that the central bank can either cut rate or increase rate. This stance is typically adopted when the policy priority is equal on both inflation and growth. • **Hawkish stance** indicates that the central bank's top priority is to keep the inflation low. During such a phase, the central bank is willing to hike interest rates to curb money supply and thus reduce the demand. • **Calibrated tightening** means during the current rate cycle, a cut in the repo rate is off the table.
CPI Inflation	• Consumer Price Index (CPI) based Inflation is a measure of changes in the price levels of goods and services purchased by households.

6. India's Green Hydrogen Push in the Transportation Sector
GS 3 (Energy)

- **Why in News:**
  - The Ministry of New and Renewable Energy (MNRE) has announced (in February, 2024) the '**Scheme Guidelines for implementation of Pilot Projects for use of Green Hydrogen in the Transport Sector'.**
  - The Scheme, which falls under the National Green Hydrogen Mission, would be implemented with a total budgetary outlay of Rs. 496 Crores till the financial year 2025-26.

The green hydrogen push

The Govt has announced a scheme to support efforts to test the viability of green hydrogen as a fuel for cars and heavy vehicles. Green hydrogen presents both a big opportunity and some major challenges

AGGAM WALIA & SUKALP SHARMA
NEW DELHI, APRIL 5

THE MINISTRY of New and Renewable Energy (MNRE) has announced a Rs 496-crore (until 2025-26) scheme to support pilot projects that either test the viability of green hydrogen as a vehicle fuel or develop secure supporting infrastructure such as refuelling stations.

Indian energy companies too are trying to develop hydrogen-powered trucks and buses by ramping up research and development, and building manufacturing capacities.

Indian energy companies too are trying to develop hydrogen-powered trucks and buses by ramping up research and development, and building manufacturing capacities. Ashok Leyland are doubling down on efforts to develop hydrogen-powered trucks and buses by ramping up research and development, and building manufacturing capacities.

Green hydrogen promises significant reductions of emissions to help slow global warming and climate change. India sees advantages ranging from curbing pollution and meeting its climate goals to reducing costly fossil fuel imports, and it has the potential opportunity to become a global hub for the production and export of green hydrogen.

Green and grey hydrogen

Hydrogen is colourless, and green hydrogen is 'green' only by virtue of the way it is produced, and the source of the energy used to manufacture it. Green hydrogen refers to hydrogen that is produced from the electrolysis of water — splitting it into hydrogen and oxygen — using an electrolyser powered by renewable energy. This is considered to be a virtually emissions-free pathway for hydrogen production. If the electricity to power electrolysis is provided by green energy, uses water as feedstock, and emits no carbon on consumption.

Currently, most hydrogen produced for industrial consumption and applications is 'grey' hydrogen, which is produced from natural gas. Although this is a relatively low-emission and high-carbon emissions. Except for a difference in the production pathway and emissions, green hydrogen is essentially the same as grey — or hydrogen categorised by any other colour.

Transport sector scheme

The major objectives of the MNRE scheme, guidelines for which were issued in February, include (i) validation of technical feasibility and performance of green hydrogen as a transportation fuel, (ii) evaluation of the economic viability of green hydrogen-powered vehicles, and (iii) demonstration of safe operation of hydrogen-powered vehicles and refuelling stations.

The Ministry of Road Transport & Highways will appoint a scheme implementation agency that will invite proposals for pilot projects. The selected company or consortium will be the project's executing agency.

Based on the recommendation of a Project Appraisal Committee, MNRE will approve viability gap funding (VGF) for the project. The VGF amount will be finalised after considering "specific needs, merits, and feasibility of each project". The executing agency will be required to complete the pilot project within two years.

Hydrogen fuel cell vehicles

A hydrogen internal combustion engine (ICE) vehicle utilises hydrogen through combustion — which is similar to cars running on diesel and petrol, except there are no carbon emissions.

An October 2020 file photo of a hydrogen fuel pump in Torrance, California. Shell has now shut down its hydrogen refuelling stations for cars in the state. The New York Times

THE COLOURS OF HYDROGEN

GREY hydrogen constitutes the bulk of India's production currently. It is extracted from hydrocarbons (fossil fuels and natural gas), and carbon dioxide is the byproduct of consumption.

BLUE hydrogen is also sourced from fossil fuels, but byproducts such as carbon monoxide and carbon dioxide are captured and stored, so it is better than grey hydrogen.

GREEN HYDROGEN is an 'end-to-end' green fuel. Electricity generated from renewable sources such as wind or solar is used to electrolyse water. Byproducts are water or water vapour.

A number of challenges

There are significant challenges to the large-scale use of green hydrogen in the transportation sector. The foremost among these is the prohibitive cost of production, followed by the lack of availability of electrolysers at scale. With more innovation in technology and scaling-up of production though, costs are likely to come down in a few years.

Green hydrogen powered vehicles are not yet commercially available in India. Global OEMs that have challenges arising from fuel costs and building supporting infrastructure. Shell, a pioneer in hydrogen refuelling technology, last month announced it was shutting all its hydrogen refuelling stations for cars in California due to "supply complications and weak demand". It will continue to operate filling stations for heavy-duty vehicles, however, and continue to remain operational there.

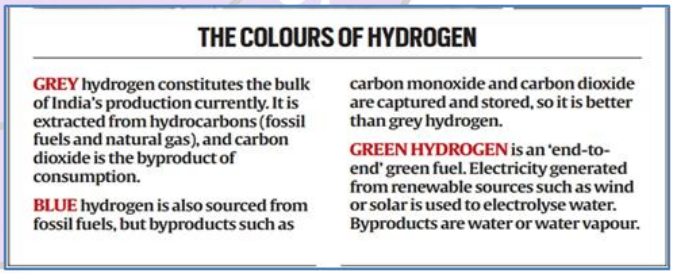
For hydrogen FCEVs to compete with BEVs, green hydrogen needs to cost between $3 and $5.5 per kilogram by 2030. For perspective, retail green hydrogen prices in California touched $36 per kilogram in 2022, according to the California Transportation Commission, an estimate that building a hydrogen truck fuelling station costs up to 72% more than the cost of building a battery electric truck fuelling station.

The MNRE plans to convene a meeting with stakeholders to discuss the development of a framework for the production of green hydrogen after manufacturers of commercial vehicles flagged challenges related to high-pressure storage cylinders.

Currently, most cylinders manufactured in India are designed to carry compressed natural gas (CNG). But hydrogen is stored at much higher pressures — CNG cylinders cannot carry hydrogen. For cylinders to carry a high mass of hydrogen, the carbon fibre needs to be stronger, which makes high-pressure hydrogen cylinders expensive. This is a key barrier to the adoption of hydrogen as a transport fuel. For the same reason, the cost of building hydrogen refuelling infrastructure is also not seen as viable.

Hydrogen is extremely flammable, which means that special care would be needed in handling the fuel at retail stations compared to diesel, CNG, or even CNG. Robust and foolproof refuelling and safety standards need to be developed before pushing large-scale adoption.

Finally, as advancements in battery technologies continue to reduce the overall weight of EV batteries, the long-term viability of green hydrogen powered heavy duty commercial vehicles could also come under pressure.



- **What is Green Hydrogen?**
  - Hydrogen is colourless and **green hydrogen is 'green' only by virtue of the way it is produced/** the source of the energy used to manufacture it.
  - Green hydrogen refers to hydrogen that is produced from the electrolysis of water (splitting it into hydrogen and oxygen) **using an electrolyser powered by renewable energy**.
  - **It is 'end-to-end' green** since it is powered by renewable energy, uses water as a feedstock, emits no carbon when consumed.
  - This means, except for a difference in the production pathway and emissions, green hydrogen is essentially the same as grey or any other colour hydrogen.
- **What is the Scheme for Use of Green Hydrogen in the Transport Sector?**
  - The major objectives of the MNRE scheme include –
    - **Validation of technical feasibility** and performance of green hydrogen as a transportation fuel,
    - **Evaluation of the economic viability** of green hydrogen-powered vehicles, and
    - **Demonstration of safe** operation of hydrogen-powered vehicles and refuelling stations.
  - **The Ministry of Road Transport & Highways** will appoint a scheme implementation agency that will invite proposals for pilot projects.
  - The selected company or consortium will be the project's executing agency and **will be required to complete the pilot project within two years.**

- Based on the recommendation of a **Project Appraisal Committee**, the MNRE will approve viability gap funding (**VGF**) for the project.
- **The VGF amount will be finalised** after considering "specific needs, merits, and feasibility of each project".

- **Advantages of Green Hydrogen in the Transportation Sector:**
  - **A hydrogen internal combustion engine (ICE)** vehicle utilises hydrogen through combustion - which is similar to cars running on diesel and petrol, except there are **no carbon emissions**.
  - **A hydrogen fuel cell electric vehicle (FCEV)** utilises hydrogen electrochemically by converting hydrogen stored in a high-pressure tank into electricity, **leaving water as the byproduct**.
  - Even though hydrogen ICE vehicles do not emit carbon, research suggests that **burning hydrogen is far less energy efficient than converting it into electricity in a fuel cell**.
  - Compared to battery electric vehicles (BEVs), in which the battery is the heaviest part, **hydrogen FCEVs are typically much lighter because hydrogen is a light element**.
    - This makes hydrogen fuel cell technology **a viable alternative to EV battery technology**, especially for heavy-duty trucks.
  - Given the need to cut carbon emissions in the transportation sector while ensuring there is no loss in revenue-generating payload capacity, **green hydrogen holds promise**.
  - **India's Green Hydrogen Push in the Transportation Sector:**
    - Big Indian commercial vehicle manufacturers such as Tata Motors, Volvo Eicher and Ashok Leyland are **doubling down on efforts to develop hydrogen-powered trucks and buses.**
    - **Indian energy companies** too are trying to scale up production of green hydrogen and bring down costs to make it affordable enough to compete with other fuels.
    - As a large and growing market for both vehicles and energy, **India stands to gain significantly from the large-scale adoption of green hydrogen as vehicular fuel**.
    - India sees advantages ranging –
    - From **curbing pollution** and meeting its climate goals to **reducing costly fossil fuel imports,**
    - As well as a business opportunity to become **a global hub for the production and export of green hydrogen.**

- **Significant Challenges to the Large-Scale Use of Green Hydrogen in the Transportation Sector:**
  - **The prohibitive cost of production:**
    - Green hydrogen-powered vehicles are not yet seen as a suitable alternative to four-wheel BEVs due to **challenges arising from fuel costs.**
    - For hydrogen FCEVs to compete with BEVs, green hydrogen needs to cost between $3 and $6.5 per kilogram by 2030.
    - For perspective, retail green hydrogen prices in California touched **$30 per kilogram in 2023.**
    - With more innovation in technology and scaling-up of production, costs are likely to come down in a few years.
  - **Inadequate supporting infrastructure:**
    - According to the California Transportation Commission, building a hydrogen truck **fuelling station costs up to 72% more** than the cost of building a battery electric truck fuelling station.
    - Shell, a pioneer in hydrogen refuelling technology, last month announced it was shutting all its hydrogen refuelling stations for cars in California due to **supply complications and other external market factors**.
  - **Challenges of storage and transportation at scale:**
    - **Hydrogen is stored at a much higher pressure, and CNG cylinders cannot carry hydrogen.**
    - For cylinders to carry a high mass of hydrogen, the carbon fibre needs to be stronger, which makes high-pressure hydrogen cylinders **expensive**.

- This is a key barrier to the adoption of hydrogen as a transport fuel. For the same reason, the existing natural gas pipeline infrastructure is also not seen as viable.
- The MNRE plans to convene a meeting with stakeholders to discuss the development of **specialised cylinders to store green hydrogen**.

- **Challenges in handling hydrogen:**
  - **Hydrogen is extremely flammable,** which means that special care would be needed in handling the fuel at retail stations compared to diesel, petrol, or even CNG.
  - Robust and fool-proof handling and safety standards need to be developed before pushing large-scale adoption.
- **Long-term viability of green hydrogen-powered vehicles:**
  - The advancements in battery technologies continue to reduce the overall weight of EV batteries.
  - Therefore, the long-term viability of green hydrogen-powered heavy duty commercial vehicles could also come under pressure.

7. Why is Bengaluru's Water Crisis Compared to Cape Town's?
Recent events of importance

- **Why in News:** With Bengaluru facing severe water shortage, many have compared the city's predicament to Cape Town's in 2015-18.
- **What Exactly Happened During the Cape Town Water Crisis?**
  - In Cape Town, the water scarcity was such that the prospect of "**Day Zero**" (municipal authorities would cut water supply and residents would queue up for a daily ration of water) defined life in the city. **This would have made Cape Town the first major city in the world to "run out" of water.**
- **What was the Reason Behind the Cape Town Water Crisis?**
  - A prolonged period of **below-average rainfall**, resulted in the water levels in Cape Town's reservoirs dropping significantly. A rapidly **growing population, unplanned urbanisation, and inefficient water-use practices** further strained the city's water supply.
- **How Severe is Bengaluru's Water Crisis?**
  - According to Karnataka Deputy CM, of the city's 13,900 public bore-wells, 6,900 have gone dry. If Bengaluru continues to "mismanage" its water supply, it can soon face a situation worse than South Africa's legislative capital a few years ago.
- **What is Behind the Bengaluru Water Crisis?**
  - The crisis in Bengaluru is caused by **scanty rainfall in the Cauvery basin** (accounts for 60% of the city's water supply) and the **depletion of its groundwater reserves**. Beyond low rainfall, **rapid, unplanned urbanisation** has played a significant role in the crisis in Bengaluru.
- **Why is Unplanned Urbanisation the Main Culprit in Both Cape Town and Bengaluru?**
  - As the **cities expanded, existing water infrastructure** (reservoirs, pipelines) **struggled to keep up with demand, resulting in leaks and inefficient water use**. Also, as concrete covered larger areas of land, groundwater levels plummeted, with replenishment failing to keep up with demand.

Bengaluru and Cape Town: A tale of two cities hit by water scarcity

SANATHK PRASAD
BENGALURU, APRIL 5

WITH BENGALURU facing severe water shortage, many have compared the city's predicament to Cape Town's in 2015-18.
Dr TV Ramachandra, Coordinator, Energy and Wetlands Research Group in Bengaluru's Indian Institute of Science, was asked about this comparison in a recent interview with The Indian Express. He noted that if the city continues to "mismanage" its water supply, it can soon face a situation worse than South Africa's legislative capital a few years ago.

EXPLAINED CLIMATE

The Cape Town water crisis

Cape Town faced a serious water shortage between 2015 and 2018, which peaked around 2017. It was characterised by critically low levels of water in the city's reservoirs, threatening to completely exhaust the city's water supply, and forcing authorities to implement strict water-rationing measures.
The scarcity was such that the prospect of "Day Zero" – the day when municipal authorities would effectively cut water supply due to empty reservoirs, and residents would have to queue up for a daily ration of water – defined life in the city. This would have made Cape Town the first major city in the world to "run out" of water.
The crisis was caused by a prolonged period of below-average rainfall, resulting in a drought across the Western Cape. This resulted in the water levels in Cape Town's reservoirs dropping significantly. A rapidly growing population, unplanned urbanisation, and inefficient water-use practices further strained the city's water supply.
Fortunately, by September 2018 the scarcity had started to ease, and by 2020, things were back to normal.

Low rainfall a key reason

The crisis in Bengaluru is caused by scanty rainfall in the Cauvery basin — which accounts for 60% of the city's water supply — and the depletion of its groundwater reserves.
Like in Cape Town, Bengaluru's water reservoirs have fallen to critically low levels due to this. For example, at the peak of the crisis, Cape Town's Theewaterskloof Dam, the single largest source of water in the city, was filled to only 11.2% of its capacity. Currently, Bengaluru's 6085 Dams is filled to under 20% of its capacity.
According to Karnataka Deputy Chief Minister D K Shivakumar, of the city's 13,900 public bore wells, 6,900 have gone dry. Areas like Varthur, Marathahalli, Bellandur, Byrathi, Hoodi, Whitefield, and Kadugodi are completely dependent on water tankers to meet daily water needs.

Urbanisation also to blame

Beyond low rainfall, rapid, unplanned urbanisation has played a significant role in the crisis in both Cape Town and Bengaluru.
In Cape Town, as the city expanded, existing water infrastructure (reservoirs, pipelines and treatment plants) struggled to keep up with demand. This strain then resulted in leaks and other problems, and led to inefficient water use. Moreover, as concrete covered increasing swathes of land, groundwater levels fell drastically, with replenishment not keeping up with consumption.
Bengaluru too has seen something similar. In the 1800s, the city had 1,452 water bodies, with roughly 80% of its area covered in greenery. Now, only 193 water bodies remain, and green cover is below 4%.
This is especially bad for East Bengaluru, which is dependent on groundwater. With tech parks, gated communities, and high-rise apartments covering the once green stretch of land, simply not enough water is percolating underground.

Residents collect water from a tanker in Bengaluru last month. PTI In 2018, scenes of people queueing up before springs in Cape Town were common. REUTERS

Drastic impact on daily lives

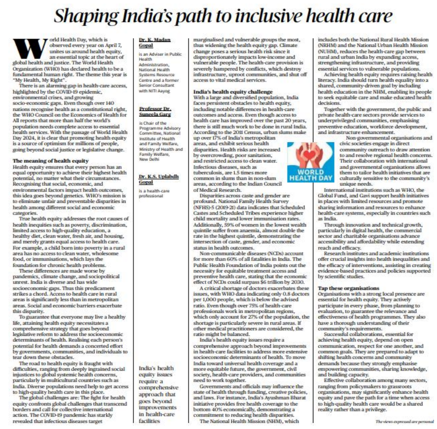
Water scarcity has drastically impacted the daily lives of citizens in Bengaluru, like it did in Cape Town. Restrictions have been imposed on water usage.
At the peak of Cape Town's water crisis, citizens were allowed to use no more than 50 litres of water daily. The use of drinking water to wash vehicles, hose down paved areas, fill up private swimming pools, and water gardens was also declared illegal.
The Bengaluru Water Supply and Sewerage Board (BWSSB) has imposed similar rules, banning the use of potable water for washing cars, gardening, swimming pools, construction activities, road maintenance, entertainment, etc. The board has announced a penalty of Rs 5,000 for violations.
Like in Cape Town, Bengaluru's poor are the worst hit in the crisis, with increased health risks arising due to the lack of water for sanitation and hygiene purposes. Images of residents queuing up to collect water from public taps and tankers have dominated news in Bengaluru this year, just as they had during the Cape Town crisis.

Not a crisis, say authorities

BWSSB chairman Ram Prasath Manohar, however, said that Bengaluru is only facing a shortage of water, not a "crisis". He said the situation would improve in the "next 15 days". Measures have been taken to conserve water and reduce wastage, and only treated water is being used in construction, he said.

8th April, 2024

1. <u>Shaping India's path to inclusive health care</u>
<u>GS 2 (Health)</u>



Shaping India's path to inclusive health care

World Health Day, which is observed every year on April 7, unites us around health equity, an essential topic at the heart of global health and justice. The World Health Organization (WHO) has declared health to be a fundamental human right. The theme this year is "My Health, My Right".

There is an alarming gap in health-care access, highlighted by the COVID-19 epidemic, environmental crises, and growing socio-economic gaps. Even though over 140 nations recognise health as a constitutional right, the WHO Council on the Economics of Health for All reports that more than half the world's population needs complete access to essential health services. With the passage of World Health Day 2024, it is clear that promoting health equity is a source of optimism for millions of people, going beyond social justice or legislative change.

The meaning of health equity

Health equity ensures that every person has an equal opportunity to achieve their highest health potential, no matter what their circumstances. Recognising that social, economic, and environmental factors impact health outcomes, this idea goes beyond genetics. WHO's mission is to eliminate unfair and preventable disparities in health among different social and economic categories.

True health equity addresses the root causes of health inequities such as poverty, discrimination, limited access to high-quality education, a healthy diet, clean water, fresh air, and housing, and merely grants equal access to health care. For example, a child born into poverty in a rural area has no access to clean water, wholesome food, or immunisations, which lays the foundation for chronic health problems.

These differences are made worse by pandemics, climate change, and sociopolitical unrest. India is diverse and has wide socioeconomic gaps. Thus this predicament strikes a chord. Access to health care in rural areas is significantly less than in metropolitan areas. Social and economic barriers exacerbate this disparity.

To guarantee that everyone may live a healthy life, attaining health equity necessitates a comprehensive strategy that goes beyond legislative reform to address the socioeconomic determinants of health. Realising each person's potential for health demands a concerted effort by governments, communities, and individuals to tear down these obstacles.

The road to health equity is fraught with difficulties, ranging from deeply ingrained social injustices to global systemic health concerns, particularly in multicultural countries such as India. Diverse populations need help to get access to high-quality health care in this place.

The global challenges are: The fight for health equity confronts global challenges that transcend borders and call for collective international action. The COVID-19 pandemic has starkly revealed that infectious diseases target marginalised and vulnerable groups the most, thus widening the health equity gap. Climate change poses a serious health risk since it disproportionately impacts low-income and vulnerable people. The health-care provision is severely hampered by conflicts, which destroy infrastructure, uproot communities, and shut off access to vital medical services.

India's health equity challenge

With a large and diversified population, India faces persistent obstacles to health equity, including notable differences in health-care outcomes and access. Even though access to health care has improved over the past 20 years, there is still much work to be done in rural India. According to the 2011 Census, urban slums make up over 17% of India's metropolitan areas, and exhibit serious health disparities. Health risks are increased by overcrowding, poor sanitation, and restricted access to clean water. Infectious diseases, such as tuberculosis, are 1.5 times more common in slums than in non-slum areas, according to the Indian Council of Medical Research.

Disparities across caste and gender are profound. National Family Health Survey (NFHS)-5 (2019-21) data indicates that Scheduled Castes and Scheduled Tribes experience higher child mortality and lower immunisation rates. Additionally, 59% of women in the lowest wealth quintile suffer from anaemia, almost double the rate in the highest quintile, demonstrating the intersection of caste, gender, and economic status in health outcomes.

Non-communicable diseases (NCDs) account for more than 60% of all fatalities in India. The Public Health Foundation of India points out the necessity for equitable treatment access and preventive health care, stating that the economic effect of NCDs could surpass $6 trillion by 2030.

A critical shortage of doctors exacerbates these issues, with WHO data indicating only 0.8 doctors per 1,000 people, which is below the advised ratio. Even though over 75% of health-care professionals work in metropolitan regions, which only account for 27% of the population, the shortage is particularly severe in rural areas. If other medical practitioners are considered, the ratio might be balanced.

India's health equity issues require a comprehensive approach beyond improvements in health-care facilities to address more extensive socioeconomic determinants of health. To move India toward universal health coverage and a more equitable future, the government, civil society, health-care providers, and communities need to work together.

Governments and officials may influence the state of health through funding, creative policies, and laws. For instance, India's Ayushman Bharat initiative provides free health coverage to the bottom 40% economically, demonstrating a commitment to reducing health disparities.

The National Health Mission (NHM), which includes both the National Rural Health Mission (NRHM) and the National Urban Health Mission (NUHM), reduces the health-care gap between rural and urban India by expanding access, strengthening infrastructure, and providing essential services to vulnerable populations.

Achieving health equity requires raising health literacy. India should turn health equality into a shared, community-driven goal by including health education in the NHM, enabling its people to seek equitable care and make educated health decisions.

Together with the government, the public and private health-care sectors provide services to underprivileged communities, emphasising preventive education, workforce development, and infrastructure enhancement.

Non-governmental organisations and civic societies engage in direct community outreach to draw attention to and resolve regional health concerns. Their collaboration with international and governmental organisations allows them to tailor health initiatives that are culturally sensitive to the community's unique needs.

International institutions such as WHO, the Global Fund, and Gavi support health initiatives in places with limited resources and promote sharing information and resources to enhance health-care systems, especially in countries such as India.

Through innovation and technical growth, particularly in digital health, the commercial sector and charitable organisations advance accessibility and affordability while extending reach and efficacy.

Research institutes and academic institutions offer crucial insights into health inequalities and the efficacy of interventions, assisting in creating evidence-based practices and policies supported by scientific studies.

Tap these organisations

Organisations with a strong local presence are essential for health equity. They actively participate in every phase, from planning to evaluation, to guarantee the relevance and effectiveness of health programmes. They also have a thorough understanding of their community's requirements.

Successful collaborations, essential for achieving health equity, depend on open communication, respect for one another, and common goals. They are prepared to adapt to shifting health concerns and community demands because they strongly emphasise empowering communities, sharing knowledge, and building capacity.

Effective collaboration among many sectors, ranging from policymakers to grassroots organisations, may significantly enhance health equity and pave the path for a time when access to high-quality health care would be a shared reality rather than a privilege.

India's health equity issues require a comprehensive approach that goes beyond improvements in health-care facilities

WORLD HEALTH DAY

Dr. K. Madan Gopal is an Adviser in Public Health Administration, National Health Systems Resource Centre and a former Senior Consultant with NITI Aayog

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Dr. K.S. Uplabdh Gopal is a health-care professional

The views expressed are personal

- **Why in News: World Health Day**, observed annually on **April 7,** focuses on health equity, emphasizing its importance in global health and justice. The World Health Organization (WHO) highlights health as a fundamental human right under the theme **"My Health, My Right."**
- **Health Equity and its Significance:**
    - **Defining Health Equity**: Health equity ensures equal opportunity for individuals to achieve their highest health potential, irrespective of their circumstances. It addresses social, economic and environmental factors impacting health outcomes, aiming to eliminate preventable disparities.
    - **Challenges and Root Causes**: Root causes of health inequities include poverty, discrimination, limited access to education, clean water, and healthcare. Pandemics, climate change, and socio-political unrest exacerbate these disparities, particularly in diverse countries like India.
    - **Global Efforts and Challenges**: The fight for health equity faces global challenges, including pandemics, climate change, and conflicts, requiring collective international action. COVID-19 has highlighted the disproportionate impact on marginalized groups, widening the health equity gap.
- **India's Health Equity Challenges and Initiatives:**
    - **Persistent Obstacles:** India faces challenges in health equity, with notable differences in healthcare outcomes and access, especially in rural areas and urban slums. Disparities across caste, gender, and economic status contribute to varied health outcomes.
    - **Need for Comprehensive Approach**: Addressing health equity in India requires a comprehensive strategy beyond healthcare facility improvements. Initiatives like **Ayushman Bharat and National Health Mission** aim to reduce disparities by expanding access and strengthening infrastructure.
    - **Role of Stakeholders**: Governments, civil society, healthcare providers, and communities must collaborate to address socioeconomic determinants of health. Health literacy, community-driven initiatives, NGO involvement, and international support play crucial roles in achieving health equity.

2. <u>Semiconductor Chip</u>
<u>GS 3 (Economy)</u>

What is the technology behind manufacturing a semiconductor chip?

What has been the role of the transistor in the semiconductor revolution? What happens at an assembly and test plant? How has the semiconductor become smaller and smaller? What does India's current semiconductor ecosystem look like?

Sandeep Rao

The story so far:

Semiconductor chip manufacturing capabilities are currently limited to very few regions in the world. With supply chain disruptions during the pandemic and recent geopolitical tensions, many companies and countries, including India, have realised the importance of investing in chip manufacturing infrastructure. The TATA group has partnered with Taiwan's Powerchip Semiconductor Manufacturing Corporation (PSMC) to set-up a 300mm wafer fabrication plant in Gujarat. It will roll out its first 28nm chip in 2026. Two assembly and test plants in Gujarat and Assam have also been recently approved by the Government of India.

What is a semiconductor chip? How is it manufactured?

A semiconductor has properties between a conductor (which conducts electricity) and an insulator (which does not). In its purest form a semiconductor is a very weak conductor of electricity. However, its electrical properties can be changed by adding small amounts of certain substances called 'dopants'. By taking a pure semiconductor and carefully injecting certain parts with specific dopants, complex circuits can be 'printed' on the semiconductor.

The process is crudely analogous to creating an intricate work of art on a paper or a wall, by using a bunch of stencils and spray paints of different colours. The stencils are called 'masks' in the industry and the paint is analogous to the dopant.

What is a transistor?

The transistor, one of the earliest electronic components to be built using a semiconductor, is an extremely versatile device. In its most popular form it can function as an electronic switch. A typical semiconductor chip can have millions/billions of these interconnected switches that work together to perform various logical and computational operations.

A transistor can also function as an amplifier (to amplify the weak signal received by your cell phone) and is an integral part of circuits that generate and process high frequency signals (such as those required in wireless communication technologies). Today all these different avatars of the transistor are routinely packed into a single semiconductor chip (such as the WiFi chip in your mobile).

The transistor demonstrated how a single device could be built out of a piece of a semiconductor. 'Printing' multiple devices onto a single piece of a semiconductor to create entire circuits was the next leap. Both these breakthroughs laid the foundation for the semiconductor revolution and have been aptly recognised by Nobel Prizes (in 1956 and 2000).

What is fabrication technology?

Technology has progressed at a relentless pace since the semiconductor chip was first conceptualised more than six decades ago. Newer manufacturing technologies have been introduced at a regular cadence. The level of miniaturisation of the semiconductor has increased by orders of magnitude. Sticking with the stencil analogy this is mainly due to the stencils being able to etch smaller and more intricate patterns. There have been equally impressive gains in the switching capability of the transistors. They are able to switch on-and-off faster (more computations per second) and with lesser power consumption (longer battery life and lesser heat dissipation).

The industry has used labels like '45nm', '28nm' and '16nm' to introduce each new manufacturing technology. 'nm' is short for nano-meter and refers to an extremely small unit of length equal to one billionth of a meter. These numbers convey the level of miniaturisation that is achievable using a particular technology (so smaller is better). Though not always accurate, you can think of this number as representing the dimensions of single transistor. While traditionally electronic circuits have been laid out flat on the semiconductor, researchers are increasing looking to capitalise on the third dimension (height). As the length and breadth of a transistor switch decreases, increasing its height can help ensure reliable performance. Stacking entire circuits on top of one another is another way to continue to shrink semiconductor chip sizes.

What is known as a wafer?

A semiconductor chip is manufactured much like a postage stamp. A sheet of stamps is printed on a piece of paper and then each individual stamp is cut out. Similarly, an array (typically 300-400) of chips are printed on a circular piece of semiconductor (called a wafer in industry parlance). This is then diced to create individual chips. A larger wafer size allows more chips to be printed on a single wafer which makes chip production faster and cheaper. Wafer sizes used in the industry have constantly been increasing. The current state of art is 300mm which is approximately 12 inches (this refers to the diameter of the wafer). Efforts are ongoing to move to a 450mm wafer size. While moving to a larger wafer size has its technical challenges and capital expenses, it has proven to be economical in the long run.

Once the wafer has been diced into chips, each individual chip has to be packaged in a protective covering. Tiny wires have to be routed from the device to the boundary of the package. Some of these wires supply power, while other are used for feeding in and reading out signals and data. A chip also has to be tested – this includes verifying its functionality and stress testing (subjecting the chip to high temperature and voltages) – to ensure reliability during its lifetime. All this is performed in an assembly and test plant.

What does India's semiconductor ecosystem look like?

India has had a thriving chip design industry since the 1990s. Due to the magic of computer aided design it is possible to design a semiconductor chip entirely in software. The process of specifying the functionality of a chip, translating this functionality to electronic circuits, validating the circuits, optimising for speed, power consumption and size, can be done by a team of skilled engineers sitting at their desktops. The final design is abstracted into a file and sent to a fabrication plant for manufacturing. It's a bit like designing an entire graphic novel on your laptop and then sending the pdf to your publisher for printing.

India's foray into semiconductor manufacturing will benefit from the existing ecosystem for chip design which was fuelled by a steady supply of electronics and computer engineers. Semiconductor manufacturing being an essentially inter-disciplinary endeavour, could present opportunities to a wider array of professionals such as process and control engineers, data scientists, material scientists, physicists and chemical engineers to contribute meaningfully to this industry.

The author is with Texas Instruments

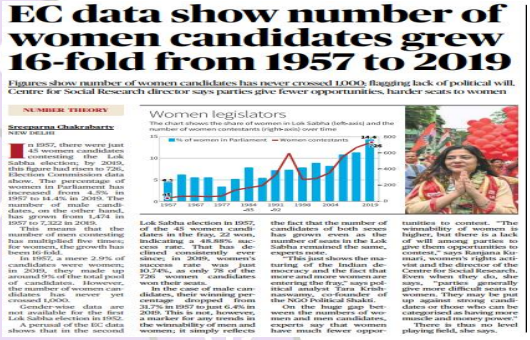
- **Why in News:** Semiconductor chip manufacturing capabilities are currently limited to very few regions in the world. Due to limited manufacturing and threat of supply chain disruptions, India has realised the importance of investing in chip manufacturing infrastructure.
- **What is a semiconductor?**
    - Semiconductors are materials that possess properties between those of conductors (such as metals) and insulators (such as glass or plastic).
        - The most commonly used semiconductor material is **silicon (Si).**
    - The conductivity component of semiconductors can be altered by introducing impurities through a process called "**doping**." By adding specific impurities, the semiconductor's electrical properties can be controlled.
    - **Application:** Microprocessors, memory chips, commodity integrated circuits, microcontrollers, transistors and others.
- **How is semiconductor chip manufactured?**
    - A semiconductor chip is manufactured much like a **postage stamp.**
    - A sheet of stamps is printed on a piece of paper and then each individual stamp is cut out.
    - Similarly, an array (typically 300-400) of chips are printed on a circular piece of semiconductor (called a wafer in industry parlance).

- This is then diced to create individual chips.

- **Recent Government Initiatives**
  - **Semicon India Programme** was approved in 2021 for the development of semiconductors and display manufacturing ecosystems over the next six years.
  - **India Semiconductor Mission (ISM)** was set up within **Digital India Corporation** to drive India's strategies for developing semiconductors and display ecosystem.
  - **Plant**: The TATA group has partnered with Taiwan's Powerchip Semiconductor Manufacturing Corporation (PSMC) to set-up a **300mm wafer fabrication plant in Gujarat**
    - **Two assembly and test plants** in Gujarat and Assam have also been recently approved by the Government of India

3. Women candidates grew from 1957: ECI
GS 2 (Elections)

- **Why in News:** The number of women candidates grew 16-fold from 1957 to 2019, as per latest ECI data.
- **Key-highlights of the Data**
  - In 1957, there were just 45 women candidates contesting the Lok Sabha election; by 2019, this figure had risen to 726.
  - The percentage of women in Parliament has increased from 4.5% in 1957 to 14.4% in 2019.
  - The number of **male candidates** has grown from 1,474 in 1957 to 7,322 in 2019.
  - This means that the number of men contesting has multiplied by five times; for women, the growth has been 16-fold.
  - In 1957, a mere 2.9% of candidates were women; in 2019, they make up around 9% of the total pool of candidates.
  - However, the number of women candidates has never yet crossed 1,000.


EC data show number of women candidates grew 16-fold from 1957 to 2019

Figures show number of women candidates has never crossed 1,000, flagging lack of political will, Centre for Social Research director says parties give fewer opportunities, harder seats to women

NUMBER THEORY

Sreeparna Chakrabarty
NEW DELHI

In 1957, there were just 45 women candidates contesting the Lok Sabha election; by 2019, this figure had risen to 726. The percentage of women in Parliament has increased from 4.5% in 1957 to 14.4% in 2019. The number of male candidates, on the other hand, has grown from 1,474 in 1957 to 7,322 in 2019.

This means that the number of men contesting has multiplied five times; for women, the growth has been 16-fold.

In 1957, a mere 2.9% of candidates were women; in 2019, they make up around 9% of the total pool of candidates. However, the number of women candidates has never yet crossed 1,000.

A perusal of the EC data shows that in the second Lok Sabha election in 1962, the fact that the number of candidates of both sexes has grown even as the number of seats in the Lok Sabha remained the same, explains the trend.

"This just shows the maturing of the Indian democracy and the fact that more and more women are entering the fray," says political analyst Yogendra Kishi, also co-founder of the NGO Political Shakti.

On the huge gap between the numbers of women and men candidates, experts say that women have much fewer opportunities to contest. "The winnability of women is higher, but there is a lack of will among parties to give tickets to women candidates," says Anupama Kotwani, women's rights activist and the director of the Centre for Social Research. Even when they do, she says, "parties generally give women tickets in those constituencies they may be put up against strong candidates or those who can be categorised as having more muscle and money power."

There is thus no level playing field, she says.

Women legislators

The chart shows the share of women in Lok Sabha (left-axis) and the number of women contestants (right-axis) over time

% of women in Parliament — Women contestants

4. AUKUS
GS 2 (International Relations)

- **Why in News:** The U.S., Britain and Australia are set to begin talks on bringing new members into their AUKUS security pact.
- **About AUKUS:**
  - It is a **trilateral security partnership** between the **United Kingdom, the United States of America** and **Australia** agreed in 2021.
  - It is intended to strengthen the ability of each government to support security and defense interests, building on longstanding and ongoing bilateral ties.
  - It consists of **two key pillars.**
  - i. **Pillar 1** focuses on **supporting Australia to acquire its first conventionally armed, nuclear-powered submarine** (It does not involve the transfer of nuclear weapons to Australia.)
  - ii. **Pillar 2** focuses on **cooperation in eight advanced military capability areas:** artificial intelligence (AI), quantum technologies, innovation, information sharing, and cyber, undersea, hypersonic and counter-hypersonic and electronic warfare domains.

'U.S., Britain, Australia mulling expansion of AUKUS security pact to counter China'

Reuters
LONDON

The U.S., Britain and Australia are set to begin talks on bringing new members into their AUKUS security pact as Washington pushes for Japan to be involved as a deterrent against China, the *Financial Times* reported.

The countries' Defence Ministers will announce discussions on Monday on "Pillar Two" of the pact, which commits the members to jointly developing quantum computing, undersea, hypersonic, artificial intelligence and cyber technology, the newspaper reported on Saturday.

They are not considering expanding the first pillar, which is designed to deliver nuclear-powered attack submarines to Australia.

AUKUS, formed by the three countries in 2021, is part of their efforts to push back against China's growing power in the Indo-Pacific region.

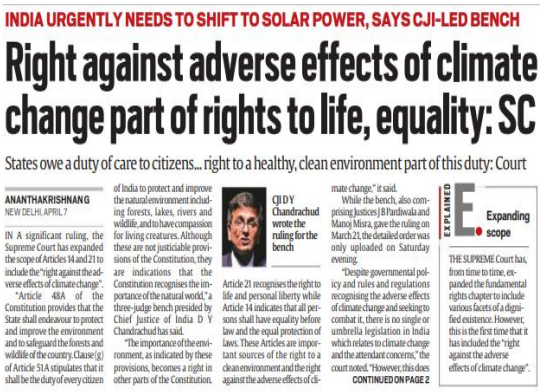
Rahm Emanuel, the U.S. Ambassador in Tokyo, wrote in an opinion piece in the *Wall Street Journal* on Wednesday that Japan was "about to become the first additional Pillar II partner".

U.S. President Joe Biden and Japanese Prime Minister Fumio Kishida will likely discuss expanding AUKUS to include Japan when the President hosts the Prime Minister in Washington on Wednesday, a source said.

Wild card: Joe Biden and Fumio Kishida may discuss Japan's inclusion into the AUKUS when the two meet this week. REUTERS

- **Submarine Component:**
  - It is designed to **equip Australia with nuclear-powered attack submarines** (SSNs). In total, Australia will end up with eight of the new nuclear submarines, called **SSN-AUKUS.**
  - These submarines will be **based on a British design but have American technology** or an American combat system.
  - AUKUS will **make Australia** the **seventh country** in the world to be **armed with nuclear-powered submarines** and the second, after the United Kingdom, with whom the United States has shared this technology.
  - These countries, however, made it clear that their aim is not to arm the new submarines with nuclear weapons. This is because Australia is a signatory to the Nuclear Non-proliferation Treaty (NPT), which bans it from acquiring or deploying nuclear weapons.

5. Climate crisis impacts citizens' right to life: SC
GS 3 (Environment)


INDIA URGENTLY NEEDS TO SHIFT TO SOLAR POWER, SAYS CJI-LED BENCH

Right against adverse effects of climate change part of rights to life, equality: SC

States owe a duty of care to citizens... right to a healthy, clean environment part of this duty: Court

ANANTHAKRISHNAN G
NEW DELHI, APRIL 7

IN A significant ruling, the Supreme Court has expanded the scope of Articles 14 and 21 to include the "right against the adverse effects of climate change".

"Article 48A of the Constitution provides that the State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country. Clause (g) of Article 51A stipulates that it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures. Although these are not justiciable provisions of the Constitution, they are indications that the Constitution recognises the importance of the natural world," a three-judge bench presided by Chief Justice of India D Y Chandrachud has said.

"The importance of the environment, as indicated by these provisions, becomes a right in other parts of the Constitution.

CJI D Y Chandrachud wrote the ruling for the bench

Article 21 recognises the right to life and personal liberty while Article 14 indicates that all persons shall have equality before law and the equal protection of laws. These Articles are important sources of the right to a clean environment and the right against the adverse effects of climate change," it said.

While the bench, also comprising Justices J B Pardiwala and Manoj Misra, gave the ruling on March 21, the detailed order was only uploaded on Saturday evening.

"Despite governmental policy and rules and regulations recognising the adverse effects of climate change and seeking to combat it, there is no single or umbrella legislation in India which relates to climate change and the attendant concerns," the court noted. "However, this does

CONTINUED ON PAGE 2

EXPLAINED
Expanding scope

THE SUPREME Court has, from time to time, expanded the fundamental rights chapter to include various facets of a dignified existence. However, this is the first time that it has included the "right against the adverse effects of climate change".

- **Why in News:** The landmark judgment by the **Supreme Court of India** sheds light on the **critical intersection between climate change and human rights.** It emphasizes the **constitutional guarantee of the right to life** and the imperative for India to prioritize **clean energy initiatives**, particularly solar power, to mitigate the adverse effects of the climate crisis.
- **Constitutional Right to Life and Health:**
  - The **Supreme Court** underscores the impact of climate change on the fundamental right to life, stating that without a **clean and stable environment**, this right cannot be fully realized.
  - **Factors** such as **air pollution, rising temperatures, and natural disasters like floods and droughts** directly affect citizens' health and well-being. The judgment highlights the need for citizens to be free from the adverse effects of climate change to uphold their constitutional rights.
  - **Case Study:** The judgment references the petition to protect the **critically endangered Great Indian Bustard (GIB),** illustrating the **tangible impact** of climate change on wildlife conservation efforts.
- **Impact on Tribal Rights and Equality**
  - Climate change disproportionately affects **indigenous communities**, threatening their lands, forests, and cultural heritage.
  - The court acknowledges that the **destruction of tribal lands and displacement** from their homes can impact the constitutional guarantee of the right to equality.
  - **Case Study:** The court discusses the plight of tribals in the **Andaman and Nicobar Islands**, highlighting how their relationship with nature is intertwined with their cultural and religious practices.
    - The **right to health** (which is a part of the right to life under **Article 21)** is impacted due to factors such as **air pollution, shifts in vector-borne diseases, rising temperatures, droughts, shortages in food supplies due to crop failure, storms and flooding.**
    - The inability of underserved communities to adapt to climate change or cope with its effects violates the **right to life (Article 21)** as well as the **right to equality (Article 14).**
- **Unequal Energy Access**
  - Despite the potential of clean energy initiatives to address energy inequality, challenges remain in terms of infrastructure, financing, and policy frameworks**. Women spend an average of 1.4 hours a day collecting firewood and an average four hours cooking**.
    - **Unequal energy access** disproportionately affects women and girls due to their gender roles and responsibilities such as through time spent on domestic chores and unpaid care work.
  - **Case Study:** The success of initiatives like the **Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya)** in electrifying rural households demonstrates the effectiveness of targeted policies in expanding energy access to marginalized communities.
- **India's Renewable Energy**
  - India's goal to achieve **500 GW of non-fossil-based electricity generation capacity** by 2030 aligns with its efforts to be **net zero by 2070.**
  - In 2023-24, out of the total generation capacity of 9,943 MW added, **8,269 was from non-fossil fuel sources.**
  - According to the **Renewable Energy Statistics 2023,** India has the 4th largest installed capacity of renewables.
- **Great Indian Bustard**
  - The GIB is listed as critically endangered by the International Union for Conservation of Nature.
  - They are protected under the **Wildlife (Protection) Act, 1972.**
- **Constitutional Provisions recognising Environmental rights**

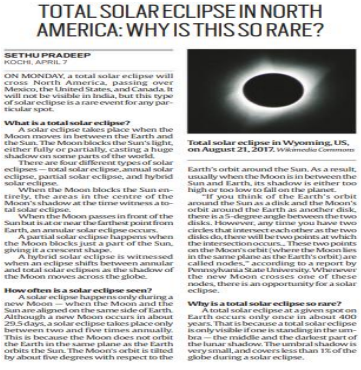
- **Article 48A** of the Constitution provides that the State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.
- **Clause (g) of Article 51A** stipulates that it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures.
  - **Article 21** recognises the right to life and personal liberty while **Article 14** indicates that all persons shall have equality before law and the equal protection of laws. These Articles are important sources of the right to a clean environment and the right against the adverse effects of climate change

6. Road to peace in Myanmar
GS 2 (International relations)

ROAD TO PEACE IN MYANMAR
For reconciliation between warring groups, neighbours must mediate, including India
RAJIV BHATIA
MYANMAR HAS BEEN at war with itself for the past three years. The military coup in February 2021 unleashed a chain of violent conflicts in many parts of the country, resulting in its de facto division into a section where the military government called the State Administration Council (SAC) still rules and another where the Resistance is in charge. The latter projects that the tide is now turning in its favour. What is the ground reality? On a recent visit to Bangkok, this writer interacted with a group of regional experts on Myanmar.
The starting point is the assessment by UN Secretary-General Antonio Guterres who, on March 18, expressed deep concern about "the deteriorating situation and escalation of conflict" that has put civilians at serious risk. He highlighted two alarming trends. First, the expansion of conflict in the Rakhine State known for its "pre-existing vulnerabilities and discrimination" creates the danger of further incitement of communal tensions. Second, the forcible recruitment of youth into the military under the new conscription law in various regions and states is bound to aggravate the crisis.
Another reality check was provided by Tom Andrews, UN special rapporteur on the human rights situation in Myanmar. He spoke of a fivefold increase in air strikes by the military on its people in the past five months. He estimated that 2.7 million people stand displaced, with another 1 million likely to enter this category by the end of 2024 and asserted that 18.6 million people, including six million children, need humanitarian assistance. As against these vast needs, the flow of aid is minimal, with aid donors facing logistical challenges in a nation ravaged by conflict.
The SAC and the Resistance are much too locked into a hostile frame to agree on a modus operandi to relieve people's suffering. They need external help which can only come from Myanmar's ASEAN partners and willing neighbours such as China, India, and possibly Bangladesh. The internal and external players, therefore, need to create a mechanism for crafting a programme that helps alleviate people's hardship.
Experts agree that given the prevailing animosities, Myanmar's stakeholders are incapable of finding ways through which de-escalation of violence and delivery and distribution of humanitarian assistance may take place smoothly. The SAC and the Resistance are much too locked into a hostile frame to agree on a modus operandi to relieve people's suffering. They need external help which can only come from Myanmar's ASEAN partners and willing neighbours such as China, India, and possibly Bangladesh. The internal and external players, therefore, need to create a mechanism for crafting a programme that helps alleviate people's hardship. One neighbour, Thailand under the new government, is ready to take concrete measures such as the creation of a "humanitarian corridor" inside Myanmar as a pilot project.
Going beyond the imperative need for an early cessation of the fighting, Myanmar's friends should also suggest a pathway to the nation's return to normalcy. For this purpose, they need to discover a via media between two contrasting positions — the SAC's insistence on retaining the 2008 constitution and restoration of limited democracy after "controlled" elections, and the Resistance's vision of a fully federal democratic union with an apolitical military under a new constitution. Even before a peace formula is conceived, a pressing need exists to create an innovative mechanism for dialogue among all relevant players. ASEAN's Five Point Consensus (FPC), agreed in April 2021, has failed to deliver, despite its best endeavours.
Some experts have argued that Myanmar presents "a regional problem." Indeed, it does so, but only in terms of its consequences, not causes which are essentially internal. The SAC, the initiator of conflict, is now in decline and faces "an existential threat", claim some observers. Others assert that despite its failures and setbacks, it remains a tenacious entity. The Resistance reveals a triumphant spirit, although internal divergences and lack of cohesion are viewed as its Achilles heel. An outright victory of one party against the other seems unlikely. Perhaps neither side can prevail over the other with the help of guns, planes and drones. Both need to internalise that they are part of a single nation, and it is their combined duty to work for reconciliation.
Ironically enough, Aung San Suu Kyi, serving a 33-year long imprisonment, and the National League for Democracy, which secured a landslide victory in the last elections (November 2020), hardly figure in the current discourse. Yet, in many ways, she holds the key to a possible political solution.
As a major, interested, and affected neighbour, India can and should certainly help. India's Myanmar experts need to develop a set of practical and pragmatic proposals, infused with an accurate reading of power dynamics, geopolitical play and the country's history. They have a role in advising policymakers in New Delhi as well as shaping the regional approach to resolving the crisis in Myanmar. Its aggravation will inevitably threaten regional peace and progress. India's eastern neighbourhood can ill afford that calamity.
The writer is Distinguished Fellow, Gateway House and a former ambassador to Myanmar and the author of India-Myanmar Relations: Changing Contours

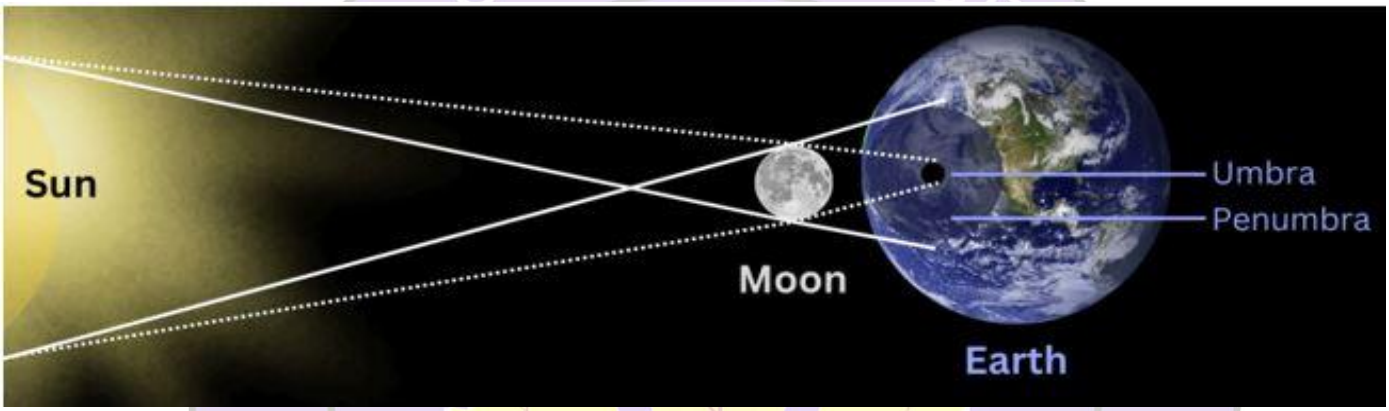
- **Why in News:** Myanmar has been embroiled in internal conflict since the **military coup** in February 2021, resulting in a ***de facto*** division between the military government and the Resistance. The situation has escalated, posing serious risks to civilians and prompting concern from the UN Secretary-General and other experts.
- **Ground Reality and Humanitarian Crisis:**
  - **Escalating Conflict: The** expansion of conflict in Rakhine State and the forcible recruitment of youth into the military is worrying. Furthermore, there is a significant increase in air strikes by the military and estimated millions displaced, with dire humanitarian needs.
  - **Challenges in Aid Distribution**: Despite vast humanitarian needs, the flow of aid remains minimal due to logistical challenges. Myanmar's internal stakeholders, including the **SAC** and the Resistance, are unable to de-escalate violence or facilitate **humanitarian assistance,** necessitating external help from regional partners like **ASEAN, China, India, and Bangladesh.**
  - **Need for External Assistance and Dialogue**: Myanmar's friends must push for an early cessation of fighting and suggest pathways for the nation's return to normalcy. ASEAN's efforts, like the **Five Point Consensus**, have fallen short, underscoring the need for innovative dialogue mechanisms.
- **India's Role and Regional Implications:**
  - **India's Potential Contribution**: India, as a major neighbor, possesses the capacity to aid Myanmar's resolution process. Indian experts should develop practical proposals considering power dynamics and regional geopolitics to advise policymakers and shape the regional approach.
  - **Threat to Regional Peace**: The crisis in Myanmar not only affects its internal stability but also poses a threat to regional peace and progress. India's engagement is crucial to prevent further escalation and ensure stability in its eastern neighborhood.
  - **Call for Pragmatic Solutions**: Indian experts can play a vital role in crafting pragmatic solutions that address Myanmar's complex dynamics, considering historical context and regional implications. India's proactive involvement can mitigate the risk of regional destabilization stemming from Myanmar's prolonged crisis.

7. Total Solar Eclipse
GS 1 (Geography)


TOTAL SOLAR ECLIPSE IN NORTH AMERICA: WHY IS THIS SO RARE?
SETHU PRADEEP
KOCHI, APRIL 7
ON MONDAY, a total solar eclipse will cross North America, passing over Mexico, the United States, and Canada. It will not be visible in India, but this type of solar eclipse is a rare event for any particular spot.
What is a total solar eclipse?
A solar eclipse takes place when the Moon comes in between the Earth and the Sun. It appears as the Sun's light, either fully or partially, is blocked by the shadow on some parts of the world.
There are four different types of solar eclipses — total solar eclipse, annual solar eclipse, partial solar eclipse, and hybrid solar eclipse.
When the Moon blocks the Sun entirely, the areas in the centre of the Moon's shadow at the time witness a total solar eclipse.
When the Moon passes in front of the Sun but is at or near the farthest point from Earth, an annular solar eclipse occurs.
A partial solar eclipse happens when the Moon blocks just a part of the Sun, giving it a crescent shape.
A hybrid solar eclipse is witnessed when an eclipse shifts between annular and total solar eclipses as the shadow of the Moon moves across the globe.
How often is a solar eclipse seen?
A solar eclipse happens only during a new Moon — when the Moon and the Sun are aligned on the same side of Earth. Although a new Moon occurs in about 29.5 days, a solar eclipse takes place only between two and five times annually. This is because the Moon does not orbit the Earth in the same plane as the Earth orbits the Sun. The Moon's orbit is tilted by about five degrees with respect to the
Total solar eclipse in Wyoming, US, on August 21, 2017. Wikimedia Commons
Earth's orbit around the Sun. As a result, usually when the Moon is in between the Sun and Earth, its shadow is either too high or too low to fall on the planet.
"If you think of the Earth's orbit around the Sun as a disk and the Moon's orbit around the Earth as another disk, there is a 5-degree angle between the two disks. However, any time you have two circles that intersect each other as the two disks do, there will be two points at which the intersection occurs... These two points on the Moon's orbit (where the Moon lies in the same plane as the Earth's orbit) are called nodes," according to a report by Pennsylvania State University. Whenever the new Moon crosses one of these nodes, there is an opportunity for a solar eclipse.
Why is a total solar eclipse so rare?
A total solar eclipse at a given spot on Earth occurs only once in about 400 years. That is because a total solar eclipse is only visible if one is standing in the umbra — the middle and the darkest part of the lunar shadow. The umbral shadow is very small, and covers less than 1% of the globe during a solar eclipse.

- **Why in News:** The world is set to witness the **first solar eclipse of 2024** that crossed **North America**, passing over **Mexico, the United States, and Canada.**
- **More on News:**
  - A solar eclipse occurs when the moon "eclipses" the sun.
  - This means that the moon, as it orbits the Earth, comes in between the sun and the Earth, thereby blocking the sun and preventing any sunlight from reaching Earth.
  - **During the eclipse, the environment undergoes dramatic changes**. Temperatures drop, wind pattern changes, stars appear, and diurnal animals may alter their behaviour in response to the sudden darkness.
  - There are **four types** of solar eclipses:

Partial solar eclipse:	The moon partially covers the sun, creating a crescent shape. In this case, observers will notice a reduction in sunlight.
Annular solar eclipse	It occurs when the moon is too far away from the Earth to completely cover the sun's disk. This results in a ring of sunlight, or an annulus, around the dark silhouette of the moon. The unobscured and glowing ring, or "annulus," around the sun is also popularly known as the "ring of fire."
Total solar eclipse:	The moon totally blocks out the sun for a few minutes, leading to a period of darkness -- and the resulting eclipse is called a **total solar eclipse. Solar corona can be witnessed during this.**
Hybrid solar eclipse	A hybrid solar eclipse is when the type of eclipse changes between annular and total as the moon's shadow moves across the curved surface of the Earth.



9th April, 2024

1. SC cautions against Centre-State's disputes
GS 2 (Governance)

Several States are coming to court against Centre: SC

Krishnadas Rajagopal
NEW DELHI

The Supreme Court said a steady stream of States are compelled to approach it against the Centre while cautioning the Union government against entering into a "contest" with water-starved Karnataka over its request for drought relief.

"Let there be no contest here between the Union and the State... We are seeing various State governments having to appear in court," Justice B.R. Gavai, heading the Bench, addressed Attorney-General R. Venkataramani and Solicitor-General Tushar Mehta, both appearing for the Union government.

Recently, the Tamil Nadu government accused the Centre in the Supreme Court of treating the people of the State in a "step-motherly" fashion by delaying the release of disaster relief funds to the tune of nearly ₹38,000 crore to help tide over the twin calamities of cyclone Michaung and unprecedented floods in the State's southern districts. Likewise, Kerala filed a first-of-its-kind suit directly in the top court, blaming the Centre for arbitrarily interfering in its net borrowing limits, pushing the State to the brink of a financial emergency.

Let there be no contest here between the Union and the State... JUSTICE B.R. GAVAI

CONTINUED ON » PAGE 10

- **Why in News:** A division bench of **Supreme Court** verbally observed that various state governments are directly approaching the top court seeking similar reliefs while there should be no contest between the Centre and states.
- **Reason behind increasing tussle**
  - **Encroaching interesting areas**: Areas of governance which are essentially local in nature are being encroached upon by Union as electoral compulsions require greater connect with the people.
    - ❖ **Example:** Health being a state subject, the recent announcement by the Centre to provide free **food grains** to nearly 80 crore people is clearly part of this trend.
  - **Gradual encroachment** by the Centre on the states' domain through direct funding and policy implementation, leading to challenges in service delivery and credit attribution. The Government in India is more involved directly in these state's subjects.
    - Take **education and health**, both primarily responsibility of the states and both encroached upon by the Centre.
  - **Fiscal centralization:** The unequal distribution of financial resources between the Centre and the states, coupled with the Centre's increasing control over tax revenues, has fueled disputes over fiscal autonomy.
    - ❖ **Example:** Goods and Services Tax (GST), leading to tensions between the Centre and the states.
  - **Policy conflicts**: Divergent political ideologies and policy priorities between the Centre and various states often result in disagreements over the implementation of national policies at the regional level.
- **Required Measures**
  - **Minding one's work:** The Centre must maintain the **monopoly of the national agenda**. It must though let the States do their own work. The **Concurrent List** must be dismantled or at least shrunk and a new list that empowers local governments be instituted.
  - **Decentralisation:** The phraseology of and the need for decentralisation, delegation and devolution have appeared repeatedly in committees and commissions-including the **Rajamanar (Centre-State Relations Inquiry) Committee, the Sarkaria Commission, the Administrative Reforms Commission** and the 2010 report of the **Inter-State Council** on centre-state relations.
  - **Modern approach**: Indian Polity demands a modern approach to transformation-the induction of efficiency, accountability and outcome orientation
- **Constitutional Provision**
  - In a **federal structure** it is critical that **Union government** responds to the **needs of states** and there is complete **transparency and accountability** in the functioning of both these organs.
  - However, the framers of the Constitution envisioned differences between the Centre and States owing to this **quasi-federal structure** and **dual polity**. And so they added the **original and exclusive jurisdiction of the Supreme Court** for the resolution of such issues.
  - **Article 131** deals with the 'original jurisdiction' of the Supreme Court of India in any dispute that involves a 'question of law or fact on which the existence of legal right depends'.
  - The **National Development Council** set up in 1952 and the **Inter-State Council** set up in 1990 under **Article 263** are the two major arrangements to resolve Centre-State disputes and enhance cooperation.
- **Schedule VII of the Constitution**
  - **Central List:** The Union government could legislate on items given in the Central List
  - **State List:** State could legislate for items in the State List.
  - **Concurrent List:** In the Concurrent List both could legislate but the Central legislation had overriding powers. Increasingly, the powers of the Centre have increased, with restriction on the state's power to frame laws.
  - Under the **42nd amendment to the Constitution**, five subjects including education and forests were transferred to the Concurrent List from the State List, thereby restricting the power of the state.

2. <u>Innovation in Traditional Practices of Agriculture</u>
<u>GS 3 (Agriculture)</u>

- **Why in News:** In **Rajasthan's Shekhawati region,** farmers are opting for **innovations in traditional practices** and adopted new techniques to turn their land into a profitable venture amid the decline in the **groundwater level and erratic rainfall.**
- **Adopted techniques**:
  - Solar power panel running pumps, slim polyethylene hoses for drip irrigation, uniformly spaced trees, jets shoot water mixed with fertilizer directly at the roots; climate-controlled greenhouses, rainwater harvesting techniques, establishment of climate-controlled polyhouse for growing vegetables, organic farming with the help of **vermicompost**

Innovations in traditional methods revolutionising farming in Rajasthan's parched Shekhawati

SPECIAL

Mohammed Iqbal
SIKAR

Neat rows of vegetable and fruit plants in a portion of the 4.50-hectare agricultural land, a 3.3-KV solar power panel running pumps and other electrical appliances, slim polyethylene hoses for drip irrigation, and uniformly spaced trees form part of some innovative practices adopted by farmer Bhanwar Lal Meel at Lalasi village in Rajasthan's Sikar district.

Mr. Meel, 41, who has studied till Class 12, has made innovations in traditional practices and adopted new techniques to turn farming on his ancestral land into a profitable venture amid the decline in the groundwater level and erratic rainfall. A pond constructed in his field last year, utilising the subsidy under the Prime Minister's Krishi Sinchayee Yojana, provides an additional support to farming by storing rainwater.

Mr. Meel is among a bunch of farmers in Shekhawati region who have adopted new techniques for optimum utilisation of water and getting remunerative prices for agricultural produce. The expertise at the farmland has led to significant expansion in the sowing area for crops and vegetables, higher yield, and enhanced annual income per hectare of land.

A major concern

The decline in the groundwater level is a major issue for agriculturists in all four districts of Shekhawati – Sikar, Jhunjhunu, Churu, and Neem Ka Thana.

As the production of crops has declined, farmers have started cultivating vegetables, as they can get eight times the yield with just 25% labour compared with traditional farming. The sowing area of vegetables has almost doubled in the last 10 years.

Farmer Mahesh Pachar in Sikar tehsil's Jheegar Bari village has adopted rainwater harvesting techniques on his seven-acre land and established a climate-controlled polyhouse in an area measuring 1,000 square metres for growing vegetables. "The polyhouse remains vacant only from April to June. The rest of the year, I grow a good quantity of fruits, vegetables, and flowers," he said.

Sundaram Verma of Danta village has developed techniques to grow crops with less water and conserve water in the arid regions. He was awarded the Padma Shri in 2020 for developing 'dryland agroforestry', a method to help tree plantation efforts.

Bhanwar Lal of Sarwari village in Sikar's Dhod block has established a processing plant for gooseberries grown in his fields and started producing candy, powder, and *murabba* (sweet fruit preserve), which fetch him an annual profit of ₹15 lakh. Similarly, Dharampal Singh in Jhunjhunu district's Bharu village has taken up organic farming with the help of vermicompost produced in his 19-acre field.

Increase in income

Agricultural expert Chiranji Lal Maharia, who owns a 10-hectare land in Sikar's Kudan village, pointed out that the average income of farmers in the region, which was earlier about ₹1 lakh per hectare in a year, has touched about ₹8 lakh a year as a result of the innovative practices and hi-tech applications.

The sowing area of crops has also increased by one-and-a-half times. Besides, the separate agriculture budget started by the previous Congress regime in the State had introduced subsidies for horticulture and farm mechanisation through the purchase of agricultural equipment.

Faced with paucity of water, Mr. Maharia had to take up animal husbandry as an avocation. He also encouraged other villagers to rear sheep and goats.

"I am getting the services of a veterinarian to ensure proper growth of my animals, whose number has crossed 60," he added. The 'bakra mandi' (goat market) in Sikar is one of the biggest in the State, where the annual turnover is estimated at ₹600 crore.

For this year, the Agriculture Department has announced a subsidy of up to ₹1.35 lakh for construction of farm ponds, which may be used for collecting rainwater for irrigation.

Mr. Maharia has led a group of farmers to raise the demand for bringing canal waters for irrigation in the parched fields. He said if a provision of 5,000 cusecs of canal water is made for the 50-lakh acre irrigable land in the region, it will solve the problem of water scarcity and also provide enough drinking water to the 85-lakh population in Sikar division.

The Chaudhary Kumbharam Lift Canal, built under the Indira Gandhi Canal Project, supplies 1,500 cusecs of water to some areas. If the Indira Gandhi Canal is repaired on a war footing, the inflow of water may increase to 15,000 cusecs and a portion of the additional quantity may be allocated to Sikar.

If one cusec of water is allotted per 1,000 acres, the drinking water requirement may be met and fruit and vegetable production can be taken up in 50 lakh acres through drip irrigation. The rearing of sheep and goat will provide additional support, Mr. Maharia pointed out, while calling for the appointment of a panel of experts and framing of water allocation rules. These rules may be made on the lines of allocation coming to Sanchore in southwestern Rajasthan from Sardar Sarovar Dam in neighbouring Gujarat.

The Sikar Sambhag Nahar Lao Sangharsh Samiti has also pointed out some anomalies in a memorandum of understanding signed between the Haryana and the Rajasthan governments last month for ensuring the supply of the latter's entire share of water as per the 1994 Yamuna Water Agreement.

Sangharsh Samiti chief Bhola Ram said the Rajasthan government should make an attempt to get its full share of water from Tajewala Head and arrange for its supply to Sikar division through pipelines.

In the midst of the demands for bringing water to Shekhawati, Sikar Collector Qummer-ul-Zaman Choudhary said he is encouraging farmers to adopt new cropping patterns. "The establishment of farmer-producer organisations, linkages with cooperatives, and ensuring market accessibility will enhance their income," Mr. Choudhary said.

Green shoots: Mahesh Pachar at the polyhouse in his field in Jheegar Bari village in Sikar tehsil. SPECIAL ARRANGEMENT

    - ❖ **Sundaram Verma of Danta village** has developed techniques to grow crops with less water and conserve water in the arid regions. He was awarded the **Padma Shri in 2020** for developing **'dryland agroforestry'**, a method to help tree plantation efforts.
  - **Technology in Agriculture:** Sensor Data Used for Smart Farming, Climate Smart Agriculture Mechanization Using Robotics, GPS Technology for Climate-Smart Agriculture, Drones for Climate-Smart Agriculture, Precision Agriculture
- **Benefits for the farmers**
  - **Increased income**: The average income of farmers in the region, which was earlier about Rs 1 lakh per hectare in a year, has touched about Rs 8 lakh a year.
  - **Increased sowing area**: The expertise at the farmland has led to significant expansion in the sowing area for crops and vegetables, higher yield, and enhanced annual income per hectare of land.
- **Agriculture Statistics**
  - Rajasthan is **India's largest state** with 61% arid or semi-arid climate.
  - Rajasthan is **India's largest producer of mustard**, with a 48% share in national output.
  - Despite being mostly arid, it is also the **country's largest producer of bajra** (pearl millet), guar (cluster beans) and coarse cereals, apart from spices.
- **Steps taken by the Government in the Direction**
  - **AgriStack:** AgriStack is a government initiative to build an ecosystem that facilitates the delivery of digital agriculture services, including responsible advisories and access to quality inputs.
  - **Digital Agriculture Mission**: This has been initiated for 2021 -2025 by the government for projects based on new technologies like artificial intelligence, block chain, remote sensing and GIS technology, use of drones and robots etc.
  - **Sub-Mission on Agricultural Mechanization (SMAM):** Under this Scheme, subsidies are provided for purchase of various types of agricultural equipment and machinery.
  - **Other Digital Initiatives:** Kisan Call Centres, Kisan Suvidha App, Agri Market App, Soil Health Card (SHC) Portal, etc.

3. <u>Indian Aviation, A Case of Air Safety at a Discount</u>
<u>GS 3 (Economy)</u>

- **Why in News:**
  - **The aviation sector in India is at a crossroads**, grappling with the juxtaposition of rapid growth and critical safety concerns.
  - **The statements of Union Minister and the DGCA, emphasising the paramount importance of safety, appear contradictory** when juxtaposed with the ongoing safety lapses.
  - Considering the safety measures, it is **important to analyse the safety protocols, parameters, challenges, and regulatory failures.**
- **A Case Study of Safety Concerns and Regulatory Failures at Karipur Airport (Kozhikode, Kerala)**
  - In June 2023, Union Minister addressed the non-provision of the Runway End Safety

Indian aviation, a case of air safety at a discount

The oft-repeated statements by the Union Minister for Civil Aviation, Jyotiraditya Scindia, and the Directorate General of Civil Aviation (DGCA), that, first, 'safety is paramount' and, second, 'India has one of the fastest growing aviation sectors', are ones that are at complete variance with each other when there are two very serious safety issues staring at aviation in India.

In June 2023, the Minister had written to the Kerala government implying that the safety of passengers was being gravely compromised due to the non-provision of the Runway End Safety Area at Kozhikode's Karipur airport. The provision of this safety feature was explicitly recommended by the Aircraft Accident Investigation Bureau (AAIB) after its investigation and recommendations following an air crash at the airport on August 7, 2020. The Minister said that the Ministry would be "left with no choice but to proceed with the necessary action of curtailing the runway length for safe aircraft operations at Calicut airport from 01.08.2023 unless the land is handed over to the AAI [Airports Authority of India] immediately".

We are now in April 2024 and just a couple of weeks and months away from the southwest monsoon, and, later, the northeast monsoon. Yet, no land has been made available and flights continue at the airport without restrictions.

In January 2024, Mr. Scindia, in a post on X, had said: "... After in-depth analysis of pilot rosters, fatigue-related reports and direct feedback from pilots, we have introduced revised "FDTL Regulations" [Flight Duty Time Limitations] that include, increased rest periods, redefining night duty, and regular fatigue reports to be shared by airlines." The deadline for their implementation was June 1, 2024. But airline owners in India went rushing to the Ministry and the DGCA stating that they would need additional crew to meet these requirements and hence flights would need to be curtailed. In March 2024, the DGCA deferred the "deadline" of June 1 indefinitely.

All this raises the question. Is safety paramount for the Minister and the DGCA? Or are the commercial requirements of airlines taking priority over passenger safety? Going by the actions so far, air passengers should be aware that they are flying 'purely on a horoscope'. The authorities and the airlines are clueless on safety standards.

Systems overseas

Why has the International Civil Aviation Organisation (ICAO) introduced the Fatigue Risk Management System (FRMS) as a mandatory requirement? It is with good reason. The study of various accidents and serious incidents due to fatigue, has shown sleep deprivation and impaired reaction times to be identified as a major cause. Countries such as Japan, Singapore and the United Kingdom lay a lot of stress on fatigue management and also rest periods for flight crew. They follow a system where pilots get two days off every week to reset their body clock and recover from cumulative fatigue. For long haul flights, they are provided augmented rest on return to their home base.

The common refrain one hears is that pilots are overpaid for the work they do, when even senior executives in airlines earn less! In 1985 when I was part of the Central Executive of the Indian Commercial Pilots Association, this was the argument put forth by the Director of Personnel and Director Finance of the airline, that is Indian Airlines (IA), to deny pilots an increase in emoluments. I highlighted the huge difference between the working conditions of pilots and ground personnel. Pilots got just 30 days of annual leave and a day off every week due to FDTL limits. Contrast this with ground personnel who got weekends off, which is 104 days, all public holidays and their annual leave. I told the IA management that pilots would forego the increase and would also work the same number of days that ground personnel did in office.

People fail to understand that a pilot is a human being and not a machine. He or she needs time with their family too. Two days off in a week is a must to be with family.

The human factor is distant

Airline rosters never take the human factor in account. The limits laid down by the DGCA do not mean that a good airline system cannot utilise pilots to a lesser number of flight time and duty hours. When airlines place orders for aircraft, airline owners go by the DGCA Civil Aviation Requirements (C.A.R.) for scheduled transport which lays down the minimum crew requirement. If it is compared with the FDTL C.A.R., the requirement of crew would be more than double, depending on the type of operations. So, does the DGCA monitor crew numbers based on the requirements in the FDTL C.A.R.? The answer is no. After all, it would affect the news headline grabbing effect of a large aircraft order and downplay the hype around the country being the "fastest growing" in aviation.

Financial stress can have a very adverse result on a pilot. The United States National Transportation Safety Board (NTSB) report on a Silkair crash on December 19, 1997, which claimed 104 lives, identified the issue of the captain's gambling debts and pilot suicide. In the Egyptair crash on October 31, 1999, too, there were similar findings.

I refer to the two accidents as in addition to pilot fatigue, the authorities in India do not pay heed to the dangers of financial stress. It is shocking to have reports that the copilots of Vistara, the only flourishing airline under the Tatas were given an ultimatum to 'sign their new pay structure contract by the end of the day or else lose their command position' when Vistara is eventually merged with Air India. It would have meant a drop in income by almost 50% for a young pilot who has invested over a crore of rupees to obtain his licence to fly and who is up to the neck paying equated monthly instalments towards the loan. Does Vistara's management consider it safe to subject a young mind to such thoughtless pressure? Will the flight be safe when the pilot's mind is worrying about his loan? The Tatas are known to care for the welfare of their employees. It is surprising, therefore, that when it is an issue that concerns pilots, the issue takes a back seat.

Why are airlines looking at copilots as only an occupant on the flight deck? They are the airline's future captains and are a long-term investment in an airline's growth. The human resource departments of airlines have failed. Airlines are bound to lose even their captains who will move to an airline that operates with human values. Airline owners may call this 'illegal poaching' but in a country where lawmakers switch sides for handouts, blaming pilots is unfair. After all, these airline-friendly rules and recommendations made by DGCA cannot be the result of a mere "over the table" approach. The electoral bond issue is a tale that has exposed many, and aviation is not an exception to this.

Some solutions

To meet pilot shortage, there is an immediate solution. India should adopt the ICAO Annex 1 Standard which allows a member state to recognise another ICAO licence and issue an Indian licence on the basis of only an Air Law examination and a Class I medical. There will be hundreds of qualified and experienced Indian captains working abroad who will return to India if the hurdles that the corrupt system uses to prevent them from returning are demolished.

The DGCA, in collusion with airline management pilots, has a rule that makes it mandatory for an instructor or an examiner to be an active pilot. However, they will accept a retired pilot working in a training centre abroad to carry out the mandatory checks on Indian pilots. Retired pilots can be utilised for simulator training. Such a step will also release a large number of trained pilots for active flying.

Hanging on to rules that were drafted in 1937 and a system that has large-scale corruption will never result in Indian aviation shining. As for the Tatas, if they want to make their merger of four airlines result in a trouble-free world class airline system, they need to introspect deeply over the importance of the human factor in aviation. Finding excuses such as 'Air Traffic Control delays' for large-scale flight disruption – as Vistara cited – will cut no ice. It is transparency and building brand loyalty that will help them regain their past glory in aviation.

Captain A. (Mohan) Ranganathan is a former airline instructor pilot and aviation safety adviser. He is also a former member of the Civil Aviation Safety Advisory Council (CASAC), India

With airline managements in India appearing to prioritise commercial needs over passenger safety, the Civil Aviation Ministry and the regulator need to act

Area, a crucial safety feature recommended by the Aircraft Accident Investigation Bureau (AAIB) following an air crash in August 2020.
  - **Despite the explicit recommendation and the Minister's warning** of curtailing runway length for safe operations, **no action has been taken to rectify the situation.**
  - Without adequate safety measures in place, **Karipur airport remains vulnerable to potential incidents,** especially as it approaches the southwest and northeast monsoon seasons, known for adverse weather conditions and increased operational challenges.
  - Despite assurances of safety being paramount, **the failure to prioritise and expedite necessary safety enhancements raise questions about the efficacy of regulatory oversight** and the commitment to ensuring passenger well-being.
- **Flight Duty Time Limitations (FDTL) Regulations, Implementation Challenges, and Implications**
  - **FDTL Regulatory Announcement**
    - **The issue of fatigue management** within the aviation sector represents a **critical aspect of ensuring flight safety** and crew well-being.
    - In January 2024, Union Minister announced **revised FDTL regulations** aimed at addressing pilot fatigue.
    - These **regulations included increased rest periods, redefined night duty, and regular fatigue reports** to be shared by airlines.
    - However, **the subsequent deferral of the implementation deadline by the DGCA due to airline concerns highlights a significant regulatory failure** and underscores the challenges in prioritising safety over commercial interests.
  - **Commercial Pressure vs. Safety**
    - The **deferral of the FDTL regulations' implementation deadline due to airline owners' concerns** about the need for additional crew to meet the new requirements **reveals a prioritisation of commercial interests over safety considerations.**
    - While the **revised regulations were intended to mitigate the risks associated with pilot fatigue,** the deferment indicates a reluctance to invest in crew welfare and safety measures that may impact operational costs and flight schedules.
  - **Impact on Pilot Well-being**
    - **Pilot fatigue** is a well-documented risk factor in aviation safety, **with sleep deprivation and impaired reaction times identified as major contributors to accidents** and incidents.
    - **By deferring the implementation of fatigue management regulations, the authorities not only compromise flight safety** but also exacerbate the stress and strain experienced by pilots.
    - The inability to enforce adequate rest periods and duty limitations not only jeopardises passenger safety but also undermines the health and well-being of flight crew members.
  - **Regulatory Oversight and Accountability**
    - Despite the Minister's assertions regarding the paramount importance of safety, **the decision to delay implementation in response to industry pressure raises questions** about the independence and effectiveness of regulatory bodies such as the DGCA.
    - Moreover, **it underscores the challenges of balancing safety imperatives with industry demands** and commercial considerations.
- **International Standards and Comparative Analysis**
  - **Comparative Analysis**
    - **Countries like Japan, Singapore, and the United Kingdom are known for their rigorous approach to aviation safety** and adherence to international standards.
    - These countries **prioritise fatigue management and invest in comprehensive regulatory frameworks** to ensure crew well-being and operational safety.
    - **For instance, Japan and Singapore emphasise fatigue management through regular rest periods** and stringent duty limitations for flight crew members.
    - Similarly, **the United Kingdom emphasises the importance of fatigue risk assessment and mitigation strategies** to prevent fatigue-related incidents.
  - **Two Days Off Every Week**
    - **One notable practice** observed in these countries is **the provision of two days off every week for pilots to reset their body clock** and recuperate from cumulative fatigue.
    - By mandating regular rest periods, **these countries prioritise crew well-being and enhance overall flight safety**
  - **Augmented Rest for Long-Haul Flights**
    - Moreover, countries like Japan, Singapore, and the United Kingdom provide **augmented rest periods for pilots involved in long-haul flights.**
    - This **practice acknowledges the unique challenges posed by extended flight durations** and emphasises the need for additional rest to mitigate the risks of fatigue accumulation.
    - **By incorporating augmented rest into their regulatory frameworks, these countries demonstrate a proactive approach** to addressing fatigue-related risks and ensuring the safety of long-haul operations.
- **Way Forward: Comprehensive Regulatory Reforms**
  - **Adoption of ICAO Annex 1 Standards**
    - One key recommendation is for **India to adopt the International Civil Aviation Organisation (ICAO) Annex 1 standards**, which allow **member states to recognise foreign licenses and issue Indian licenses based on specific criteria.**
    - By streamlining the process for recognising foreign licenses, **India can attract experienced pilots who may be deterred by bureaucratic hurdles** and regulatory barriers.
    - This **initiative would help alleviate pilot shortages and enhance the skill and experience levels** within India's aviation workforce.
  - **Utilisation of Retired Pilots for Training**
    - Another recommendation involves **leveraging retired pilots for training purposes, particularly in simulator training centres.**
    - Retired pilots possess valuable experience and expertise that can be utilized to train and mentor the next generation of aviators.
    - **By tapping into this resource pool, India can address training gaps**, improve proficiency standards, and enhance overall safety outcomes.

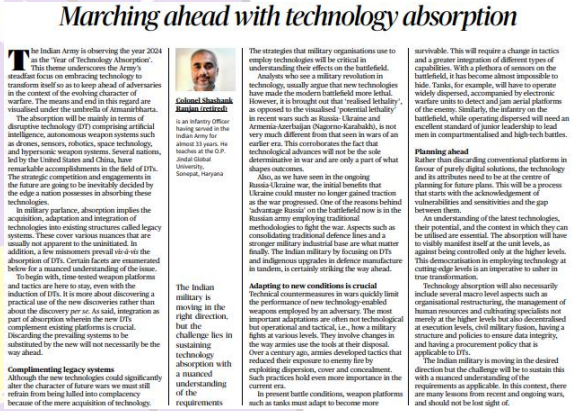
- Additionally**, the utilisation of retired pilots for training roles can help alleviate staffing shortages** and support the professional development of aspiring aviators.

- **Enhanced Monitoring of Crew Numbers**
  - Furthermore, regulatory **authorities such as the Directorate General of Civil Aviation (DGCA) should enhance monitoring mechanisms** to ensure compliance with FDTL regulations and crew staffing requirements.
  - **By closely monitoring crew numbers based on FDTL standards, the DGCA can identify instances of non-compliance** and take corrective action to mitigate fatigue-related risks.
  - Additionally, the DGCA should collaborate with airlines to develop proactive measures for managing crew fatigue and optimizing crew resources in accordance with operational demands.
- **Promotion of Safety Culture**
  - Moreover, **promoting a culture of safety within the aviation industry is essential for achieving sustainable safety outcomes.**
  - Regulatory authorities, airlines, and other stakeholders should prioritize safety initiatives, invest in safety training programs, and encourage open communication channels for reporting safety concerns.

- **Conclusion**
  - **The deferral of fatigue management regulations highlights the challenges of reconciling safety** imperatives with commercial pressures within India's aviation sector.
  - To ensure flight safety and crew well-being, **regulatory bodies must prioritise the enforcement of stringent fatigue management standards and resist industry pressures** that compromise safety standards.
  - **Only through a concerted effort to address regulatory failures and foster a culture of safety can India's aviation sector uphold the highest standards** of flight safety and operational excellence.

4. Marching ahead with technology absorption
GS 2 (Security)

- **Why in News:** The Indian Army's decision to observe 2024 as the **'Year of Technology Absorption'** underscores its strategic imperative to e**mbrace technological advancements for military modernization and preparedness** in the face of evolving threats and challenges.
- **Strategic Embrace of Disruptive Technologies:**
  - **Potential of technologies:** The 'Year of Technology Absorption' initiative reflects the Indian Army's recognition of the transformative potential of disruptive technologies such as **artificial intelligence, autonomous systems, and space technology.**
  - **Competitive edge**: By prioritizing the absorption of these technologies, the Army aims to maintain a competitive edge over adversaries and enhance its capabilities to effectively counter emerging threats.
  - **Self-reliance:** This strategic focus on technology absorption aligns with the broader vision of Atmanirbharta, emphasizing self-reliance and indigenous development in defense technologies.



Marching ahead with technology absorption

The Indian Army is observing the year 2024 as the 'Year of Technology Absorption'. This theme underscores the Army's steadfast focus on embracing technology to transform itself so as to keep ahead of adversaries in the context of the evolving character of warfare. The means and end in this regard are visualised under the umbrella of Atmanirbharta.

The absorption will be mainly in terms of disruptive technology (DT) comprising artificial intelligence, autonomous weapon systems such as drones, sensors, robotics, space technology, and hypersonic weapon systems. Several nations, led by the United States and China, have remarkable accomplishments in the field of DTs. The strategic competition and engagements in the future are going to be inevitably decided by the edge a nation possesses in absorbing these technologies.

In military parlance, absorption implies the acquisition, adaptation and integration of technologies into existing structures called legacy systems. These cover various nuances that are usually not apparent to the uninitiated. In addition, a few misnomers prevail vis-à-vis the absorption of DTs. Certain facets are enumerated below for a nuanced understanding of the issue.

To begin with, time-tested weapon platforms and tactics are here to stay, even with the induction of DTs. It is more about discovering a practical use of the new discoveries rather than about the discovery *per se*. As said, integration as part of absorption wherein the new DTs complement existing platforms is crucial. Discarding the prevailing systems to be substituted by the new will not necessarily be the way ahead.

Complimenting legacy systems

Although the new technologies could significantly alter the character of future wars we must still refrain from being lulled into complacency because of the mere acquisition of technology.

Colonel Shashank Ranjan (retired)

is an Infantry Officer having served in the Indian Army for almost 33 years. He teaches at the O.P. Jindal Global University, Sonepat, Haryana

The Indian military is moving in the right direction, but the challenge lies in sustaining technology absorption with a nuanced understanding of the requirements

The strategies that military organisations use to employ technologies will be critical in understanding their effects on the battlefield.

Analysts who see a military revolution in technology, usually argue that new technologies have made the modern battlefield more lethal. However, it is brought out that 'realised lethality', as opposed to the visualised 'potential lethality' in recent wars such as Russia- Ukraine and Armenia-Azerbaijan (Nagorno-Karabakh), is not very much different from that seen in wars of an earlier era. This corroborates the fact that technological advances will not be the sole determinative in war and are only a part of what shapes outcomes.

Also, as we have seen in the ongoing Russia-Ukraine war, the initial benefits that Ukraine could muster no longer gained traction as the war progressed. One of the reasons behind 'advantage Russia' on the battlefield now is in the Russian army employing traditional methodologies to fight the war. Aspects such as consolidating traditional defence lines and a stronger military industrial base are what matter finally. The Indian military by focusing on DTs and indigenous upgrades in defence manufacture in tandem, is certainly striking the way ahead.

Adapting to new conditions is crucial

Technical countermeasures in wars quickly limit the performance of new technology-enabled weapons employed by an adversary. The most important adaptations are often not technological but operational and tactical, i.e., how a military fights at various levels. They involve changes in the way armies use the tools at their disposal. Over a century ago, armies developed tactics that reduced their exposure to enemy fire by exploiting dispersion, cover and concealment. Such practices hold even more importance in the current era.

In present battle conditions, weapon platforms such as tanks must adapt to become more survivable. This will require a change in tactics and a greater integration of different types of capabilities. With a plethora of sensors on the battlefield, it has become almost impossible to hide. Tanks, for example, will have to operate widely dispersed, accompanied by electronic warfare units to detect and jam aerial platforms of the enemy. Similarly, the infantry on the battlefield, while operating dispersed will need an excellent standard of junior leadership to lead men in compartmentalised and high-tech battles.

Planning ahead

Rather than discarding conventional platforms in favour of purely digital solutions, the technology and its attributes need to be at the centre of planning for future plans. This will be a process that starts with the acknowledgement of vulnerabilities and sensitivities and the gap between them.

An understanding of the latest technologies, their potential, and the context in which they can be utilised are essential. The absorption will have to visibly manifest itself at the unit levels, as against being controlled only at the higher levels. This democratisation in employing technology at cutting-edge levels is an imperative to usher in true transformation.

Technology absorption will also necessarily include several macro level aspects such as organisational restructuring, the management of human resources and cultivating specialists not merely at the higher levels but also decentralised at execution levels, civil military fusion, having a structure and policies to ensure data integrity, and having a procurement policy that is applicable to DTs.

The Indian military is moving in the desired direction but the challenge will be to sustain this with a nuanced understanding of the requirements as applicable. In this context, there are many lessons from recent and ongoing wars, and should not be lost sight of.

- **Integration with Legacy Systems:**
  - **Integration:** The absorption of disruptive technologies entails the integration of cutting-edge innovations with existing legacy systems and military structures.
  - **Complementing rather than replacing**: Rather than replacing traditional weapon platforms, the emphasis lies on complementing them with new technologies to optimize operational efficiency and strategic effectiveness.
  - **Seamless transition:** This approach ensures continuity and synergy between established military doctrines and emerging technological advancements, facilitating a seamless transition towards a more technologically advanced force.

5. AI Regulation around the globe
GS 3 (Science and Tech)

- **Why in News:** Efforts are being made at global level to formalise AI regulations.
- **AI Regulation:**
  - **United Nations Resolution on Artificial Intelligence:** It is the first global resolution on artificial intelligence to encourage the protection of personal data, the monitoring of AI for risks, and the safeguarding of human rights.
  - **EU's AI Act:** TheEU recently passed the AI Act, the foremost law establishing rules and regulation.

- **U.K.'s framework:** The UK has adopted a principled and context-based approach in its ongoing efforts to regulate AI systems. The approach requires mandatory consultations with regulatory bodies, expanding its technical know-how and expertise in better regulating complex technologies while bridging regulatory gaps, if any.

Different approaches to AI regulation

Amid the global movement towards regulating AI systems, India's response would be crucial, with the nation currently catering to one of the largest consumer bases and labour forces for technology companies. India's path must align with its SDGs while also ensuring that economic growth is maintained

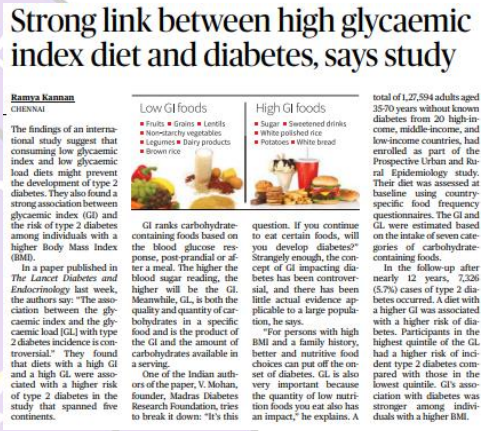
G. S. Bajpai

THE GIST

- **India's position**
  - **India AI mission:** A Rs. 10,300 crore allocation was approved for the India AI mission to further its AI ecosystem through enhanced public-private partnerships and promote the start-up ecosystem.
  - Amongst other initiatives, the allocation would be used to deploy 10,000 **Graphic Processing Units**, **Large Multi-Models (LMMs)** and other AI-based research collaboration and efficient and innovative projects.

6. Glycaemic Index (GI)
GS 3 (Science and Tech)

- **Why in News:** The findings of an international study suggest that consuming **low glycaemic index and low glycaemic load diets** might prevent the development of **type 2 diabetes**. They also found a strong association between glycaemic index (GI) and the risk of type 2 diabetes among individuals with a higher **Body Mass Index (BMI).**
- **What is the glycaemic index (GI)?**
  - GI ranks carbohydrate-containing foods based on the blood glucose response, post-prandial or after a meal. The higher the blood sugar reading, the higher will be the GI.
  - **Glycaemic load (GL),** on the other hand, is both the quality and quantity of carbohydrate in a specific food, and is the product of the GI and the amount of carbohydrate available in a serving.
    - **High GI foods**: sugar and sugary foods, sugary soft drinks, white bread, potatoes, white rice
    - **Low and medium GI foods:** some fruit and vegetables, pulses, wholegrain foods, such as porridge oats


Strong link between high glycaemic index diet and diabetes, says study

Kamya Kannan
CHENNAI

The findings of an international study suggest that consuming low glycaemic index and low glycaemic load diets might prevent the development of type 2 diabetes. They also found a strong association between glycaemic index (GI) and the risk of type 2 diabetes among individuals with a higher Body Mass Index (BMI).

In a paper published in *The Lancet Diabetes and Endocrinology* last week, the authors say: "The association between the glycaemic index and the glycaemic load [GL] with type 2 diabetes incidence is controversial." They found that diets with a high GI and a high GL were associated with a higher risk of type 2 diabetes in the study that spanned five continents.

Low GI foods
- Fruits
- Grains
- Lentils
- Non-starchy vegetables
- Legumes
- Dairy products
- Brown rice

High GI foods
- Sugar
- Sweetened drinks
- White polished rice
- Potatoes
- White bread

GI ranks carbohydrate-containing foods based on the blood glucose response, post-prandial or after a meal. The higher the blood sugar reading, the higher will be the GI. Meanwhile, GL, is both the quality and quantity of carbohydrates in a specific food and is the product of the GI and the amount of carbohydrates available in a serving.

One of the Indian authors of the paper, V. Mohan, founder, Madras Diabetes Research Foundation, tries to break it down: "It's this question. If you continue to eat certain foods, will you develop diabetes?" Strangely enough, the concept of GI impacting diabetes has been controversial, and there has been little actual evidence applicable to a large population, he says.

"For persons with high BMI and a family history, better and nutritive food choices can put off the onset of diabetes. GL is also very important because the quantity of low nutrition foods you eat also has an impact," he explains. A total of 1,27,594 adults aged 35-70 years without known diabetes from 20 high-income, middle-income, and low-income countries, had enrolled as part of the Prospective Urban and Rural Epidemiology study. Their diet was assessed at baseline using country-specific food frequency questionnaires. The GI and GL were estimated based on the intake of seven categories of carbohydrate-containing foods.

In the follow-up after nearly 12 years, 7,326 (5.7%) cases of type 2 diabetes occurred. A diet with a higher GI was associated with a higher risk of diabetes. Participants in the highest quintile of the GL had a higher risk of incident type 2 diabetes compared with those in the lowest quintile. GI's association with diabetes was stronger among individuals with a higher BMI.

- **Diabetes**
  - Diabetes is a ***Non-Communicable Disease (NCD)*** that occurs either when the pancreas does not produce enough insulin (a hormone that regulates blood sugar, or glucose), or when the body cannot effectively use the insulin, it produces.
  - **Insulin** is a peptide hormone produced by beta cells of the pancreatic islets;
  - It is considered to be the main ***anabolic hormone*** of the body.
  - **Type 2 diabetes** is age-related; it often develops at the age of 45 and beyond.
  - **Type 1 diabetes** is largely genetic in nature, while Type 2 depends on the lifestyle of the individual.

7. What's Behind the Latest US-China Trade Fight?
GS 3 (Economy)

- **Why in News:** According to the Treasury Secretary Janet Yellen (during her five-day visit to China), China's burgeoning production of electric cars and other green technologies has become a flashpoint in a new U.S.-China trade fight.
- **What's Behind the New Trade Fight between the US-China?**
  - According to the International Energy Agency (IEA), after more than a decade of subsidising its automakers, **China has built a substantial car industry that accounts for 60% of global electric vehicle (EV) sales**.
  - Chinese companies are producing as many as **10 million more EVs** annually than they can sell domestically, driving them to **sell more cars overseas**.
  - Similar dynamics exist in other industries, such as **solar panels, batteries, and more traditional areas such as steel.**
  - As the Chinese are building up a lot of capacity in many industries, **they are going to be looking for markets outside the country,** if domestic demand does not pick up**.**

What's behind the latest US-China trade fight?

ASSOCIATED PRESS
WASHINGTON, APRIL 8

CHINA'S BURGEONING production of electric cars and other green technologies has become a flashpoint in a new US-China trade fight, highlighted by US Treasury Secretary Janet Yellen during her five-day visit to China and seized on by former US President Donald Trump in incendiary remarks on the campaign trail. China has sharply ramped up its production of cheap electric vehicles, solar panels, and batteries just as the Biden administration has pushed through legislation supporting many of those same industries in the United States.

Concerns are growing not just in the US but also in Europe and Mexico that China will seek to bolster its own struggling economy with a wave of exports that could undercut factories overseas. AUS trade group, the Alliance for American Manufacturing, noted in a February report that leading Chinese automaker BYD had recently introduced an electric SUV at the "astonishingly low" price of $14,000. China's auto industry poses an "existential threat" to US carmakers, the report argued.

Trump, at a rally late last month in Ohio, charged that China would seek to export cars into the US through Mexico. The US currently has a 25 per cent tariff on cars from China that has largely blocked vehicles from that country, but Mexico has a free trade agreement with the US. Trump promised to block such imports with new tariffs, but suggested if Biden were re-elected it would be a "bloodbath" for the auto industry. So what's behind this new trade fight between the US and China? Here are some questions and answers on the issue:

What is the threat?

After more than a decade of subsidising its automakers, China has built a substantial car industry that accounts for 60 per cent of global electric vehicle sales, according to the Paris-based International Energy Agency.

Yet by some estimates, Chinese companies are producing as many as 10 million more electric vehicles annually than they can sell domestically, according to the AAM. That is driving them to sell more cars overseas. Similar dynamics exist in other industries, such as solar panels, batteries, and more areas such as steel.

CHINA MINISTER LAUNCHES EU TRIP

Beijing/Paris: China's commerce minister began a trip to Europe by telling his nation's top carmakers that US and European assertions of Chinese excess EV capacity were baseless and that innovation and "perfect" supply chains were behind their performance. Wang Wentao held a roundtable meeting in Paris on Sunday with representatives of 10 Chinese EV firms including BYD, GEELand Geely, ahead of talks on a European probe into whether Chinese EVs have benefited from unfair subsidies. Wang reiterated Beijing's stance that Chinese EV makers did not depend on subsidies. REUTERS

Is it different from previous trade fights?

It's pretty similar, American officials say they have seen this movie before.

In remarks on Saturday in Guangzhou, China, Yellen highlighted the Biden administration's concerns by recalling a visit a week earlier to Sunrui, a solar cell manufacturer in Norcross, Georgia.

The company "was once forced to close down, like other companies across a number of industries, because it could not compete against large quantities of goods that China was exporting at artificially depressed prices," Yellen said. "It's important that this doesn't happen again." China is now the world's largest producer of solar cells. Sunrui closed in 2017, but is restarting production with the help of subsidies from the Biden administration's Inflation Reduction Act.

Steel and aluminum imports surged into the United States roughly a decade ago, after China's government supported increased production after the 2008-2009 global financial crisis. Those imports were hit with tariffs in 2017 during the Trump administration. Biden has kept the tariffs.

"What's new is that the concerns around overcapacity in some cutting-edge sectors have become acute," said Brad Setser, a senior fellow at the Council on Foreign Relations and former Treasury Department official in the Obama administration. "China's clearly built an insane amount of capacity to produce solar cells, and similarly large amounts of battery production. And now it's starting to export autos."

US also subsidising these industries?

Yes, the Biden administration pushed through several pieces of legislation that have provided financial support to clean energy and semiconductor producers.

What's next?

For now, the two sides have mainly agreed to hold talks on the issue. China hasn't committed to any steps to address American concerns, arguing that its cheap solar panels and other green products are helping the world wage the costly battle against climate change. But the government in Beijing has also acknowledged that manufacturing overcapacity and weak consumer spending are challenges it needs to confront to achieve sustainable growth for its own economy.

- **For example,** leading Chinese automaker BYD had recently introduced an electric SUV at the "astonishingly low" price of $14,000, posing an "**existential threat**" to U.S. carmakers.
- The U.S. currently has **25% tariffs on cars from China** that has largely blocked vehicles from that country, **but Mexico has a free trade agreement with the US.**
- The new trade fight is quite similar to the previous one. **What's new is that the concerns around overcapacity in some cutting-edge sectors have become acute.**

- **What are the Concerns Raised by Both the US and China?**
  - According to China, **the Biden administration** pushed through several pieces of legislation that have **provided financial support to clean energy and semiconductor producers**.
  - China has even filed a complaint before the World Trade Organisation (WTO) charging that **some of Biden's subsidies for electric car purchases violate trade rules.**
  - But a 2022 report found that **China's industrial subsidies in 2019 were double** (in dollar terms) the size of U.S. support.
  - **China** subsidises the production of goods with **little spur in consumption** by its own citizens.
  - However, the US supported much higher consumption with several rounds of stimulus checks during the COVID-19 pandemic.
- **What Needs to be Done to Check New US-China Trade Fight?**
  - For now, the two sides have mainly **agreed to hold talks on the issue.**
  - **China hasn't committed to any steps to address American concerns**, arguing that its cheap solar panels and other green products are **helping the world wage the costly battle against climate change.**
  - But the government in Beijing has also **acknowledged that manufacturing overcapacity and weak consumer spending are challenges** it needs to confront to achieve sustainable growth for its own economy.
  - The rapid expansion of EV production **has sparked fierce price wars** that are expected to drive some makers out of business.
  - As a result, **China needs greater policy coordination** to support the development of new technologies without incentivizing every province to push the same industry and companies to overinvest.

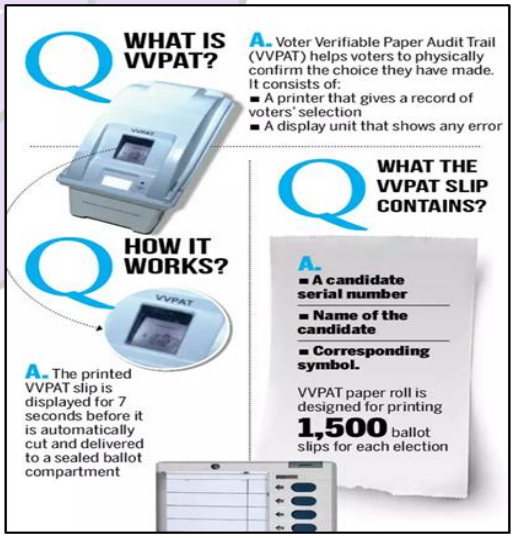
8. Why VVPAT was Introduced in Indian Elections

GS 2 (Elections)

- **Background:**
  - With the first phase of voting set to take place on April 19, the Supreme Court (SC) said that petitions seeking 100% verification of Voter Verified Paper Audit Trail (VVPAT slips would be taken up soon.
  - In March 2023, the Association for Democratic Reforms had filed a petition before the Supreme Court.
  - The petition said that to ensure free and fair elections, the tally from Electronic Voting Machines (EVMs) should be cross verified with the VVPATs.
  - Also, to make sure that this process is carried out as fast as possible, ADR suggested the use of barcodes on VVPAT slips.

Why VVPAT was brought in, why Oppn wants all slips verified

- **What is a VVPAT Machine? How does it Work?**
  - The VVPAT machine is attached to the ballot unit of the EVM and provides visual verification for the vote cast by a voter by printing a slip of paper with the voter's choice on it.
  - This slip of paper, containing the candidate's serial number, name, and party symbol, is displayed in the machine behind a glass window. The voter is given seven seconds to verify her vote.
  - Following this, the slip falls into a compartment underneath.
  - **No voter can take the VVPAT slip back home, as it is later used to verify votes cast in five randomly selected polling booths**.
  - The idea is that by allowing for a physical verification of the electronically cast vote, both voters and political parties have greater faith in the process — that their vote is being recorded correctly.



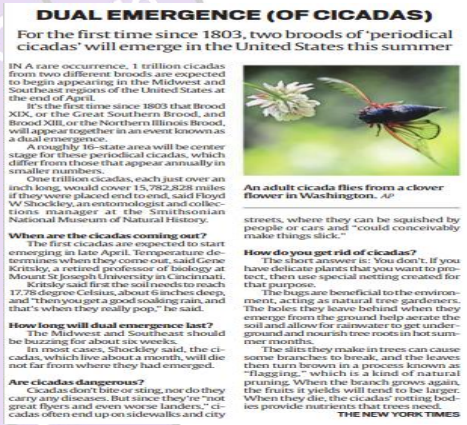
- **Why did the Election Commission Introduce VVPATs?**
  - The idea of the VVPAT machine first emerged in 2010, when the Election Commission of India (EC), held a meeting with political parties to discuss how to make the EVM-based polling process more transparent.
  - After a prototype was prepared, field trials were held in Ladakh, Thiruvananthapuram, Cherrapunjee, East Delhi, and Jaisalmer in July 2011.
  - After fine-tuning the design, holding more trials, and taking feedback from political parties, an EC expert committee approved the design in February 2013.
  - Later that year, the Conduct of Elections Rules, 1961 were amended to allow for a printer with a drop box to be attached to the EVM.
  - The **VVPAT was used for the first time in all 21 polling stations of the Noksen Assembly constituency of Nagaland in 2013**, after which the EC decided to introduce VVPATs in a phased manner.
  - By 2017, there was 100% adoption of VVPATs.
- **Why are VVPAT slips of only five polling booths randomly counted?**
  - The EC determines what percentage of VVPAT machines' slips need to be counted to verify the accuracy of an election.

- In 2018, the EC asked the Indian Statistical Institute (ISI) to come up with a "mathematically sound, statistically robust and practically cogent sample size for the internal audit of the VVPAT slips with electronic result of EVMs".
- In February 2018, the EC mandated the counting of VVPAT slips of one randomly selected polling station per Assembly constituency.
- This was increased to five polling stations per Assembly seat, following a Supreme Court judgment in April 2019 on a petition filed by TDP leader Chandrababu Naidu.
- The **five polling stations are selected by a draw of lots by the Returning Officer concerned**, in the presence of candidates/ their agents.

- **Legality of VVPAT Machines:**
  - The VVPAT has been a subject of multiple legal cases, starting with **Subramanian Swamy vs Election Commission of India (2013)**.
    - In this case, the SC ruled that a paper trail was indispensable for free and fair elections and ordered the government to provide funding for the roll-out of VVPATs.
  - In 2019, Chandrababu Naidu moved the SC asking for a minimum 50% randomized VVPAT slips to be counted.
    - The EC, however, argued that if this were to happen, results would be delayed by five to six days
    - The EC claims that it takes about an hour for election officers to match VVPAT slips with the EVM count in one polling station.
    - The EC has also highlighted infrastructure challenges, including the availability of manpower, as obstacles to increasing the number of polling booths where VVPAT slips are counted.
  - Nonetheless, the court ordered the EC to count VVPATS in five polling stations instead.
- **Why are Political Parties demanding Widened Verification of VVPAT Slips?**
  - Opposition parties continue to call for verification of more polling booths to make voting more transparent.
  - They argue that the sanctity of a fair election outweighs the concern of delay in the declaration of results.
  - Parties have called for anything from 50% to 100% verification of VVPAT slips.
  - However, the EC has, thus far, been reluctant to do so. As per EC sources, the EVM and VVPAT concerns have been litigated and addressed by the Commission many times.

9. Cicada (Cicadoidea)
GS 3 (Science and Tech)

- **Why in News:** In a rare double-emergence of cicada broods, **Brood 13**, which emerges every 17 years, and **Brood 19,** which emerges every 13, are going to join together for the first time since 1803, in eastern United States.
- **What is a cicada?**
  - Cicadas are large, robust insects, with transparent wings and large compound eyes.
  - They are known for their **loud chirping** and tendency to leave behind mounds of exoskeleton
  - They have a distinctive corrugated exoskeletal structure on the sides of their abdomen called a **'tymbal',** and it's this organ that produces the **loud buzzing sound.**
  - There are more than 3,000 species of cicada worldwide, which fall into roughly two categories:
    i. **Annual cicadas**, which are spotted every year
    ii. **Periodical cicadas**, which spend most of their lives underground and only emerge once every decade or two.


DUAL EMERGENCE (OF CICADAS)

For the first time since 1803, two broods of 'periodical cicadas' will emerge in the United States this summer

IN A rare occurrence, 1 trillion cicadas from two different broods are expected to begin appearing in the Midwest and Southeast regions of the United States at the end of April.

It's the first time since 1803 that Brood XIX, or the Great Southern Brood, and Brood XIII, or the Northern Illinois Brood, will appear together in an event known as a dual emergence.

A roughly 16-state area will be center stage for these periodical cicadas, which differ from those that appear annually in smaller numbers.

One trillion cicadas, each just over an inch long, would cover 15,782,828 miles if they were placed end to end, said Floyd W Shockley, an entomologist and collections manager at the Smithsonian National Museum of Natural History.

When are the cicadas coming out?

The first cicadas are expected to start emerging in late April. Temperature determines when they come out, said Gene Kritsky, a retired professor of biology at Mount St Joseph University in Cincinnati.

Kritsky said first the soil needs to reach 17.78-degree Celsius, about 6 inches deep, and "then you get a good soaking rain, and that's when they really pop," he said.

How long will dual emergence last?

The Midwest and Southeast should be buzzing for about six weeks.

In most cases, Shockley said, the cicadas, which live about a month, will die not far from where they had emerged.

Are cicadas dangerous?

Cicadas don't bite or sting, nor do they carry any diseases. But since they're "not great flyers and even worse landers," cicadas often end up on sidewalks and city streets, where they can be squished by people or cars and "could conceivably make things slick."

An adult cicada flies from a clover flower in Washington. AP

How do you get rid of cicadas?

The short answer is: You don't. If you have delicate plants that you want to protect, then use special netting created for that purpose.

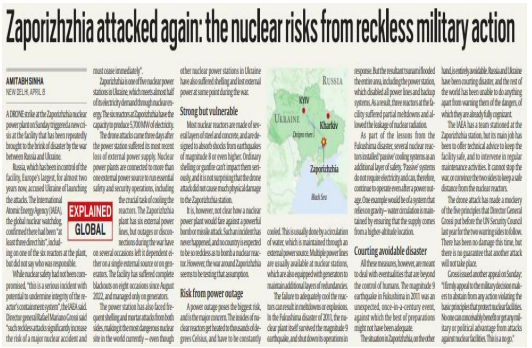
The bugs are beneficial to the environment, acting as natural tree gardeners. The holes they leave behind when they emerge from the ground help aerate the soil and allow for rainwater to get underground and nourish tree roots in hot summer months.

The slits they make in trees can cause some branches to break, and the leaves then turn brown in a process known as "flagging," which is a kind of natural pruning. When the branch grows again, the fruits it yields will tend to be larger. When they die, the cicadas' rotting bodies provide nutrients that trees need.

THE NEW YORK TIMES

10. Risks at Zaporizhzhia nuclear power plant
GS 2 (International events of importance)

- **Why in News:** Russia and Ukraine have each accused the other of launching kamikaze drones at the Zaporizhzhia nuclear power plant.
- **More on News:**
  - The nuclear plant was captured in the early stages of the two-year-long war, and despite occasional efforts to reconnect to the **Russian energy grid** its reactors have gradually been put into shutdown.
  - Five out of six are in cold shutdown, where the reactors are running at a temperature below boiling point.


Zaporizhzhia attacked again: the nuclear risks from reckless military action

AMITABH SINHA
NEW DELHI, APRIL 9

A DRONE strike at the Zaporizhzhia nuclear power plant on Sunday triggered a news crisis at the facility that has been repeatedly thought to be brink of disaster by the war between Russia and Ukraine.

Russia, which has been in control of the facility, Europe's largest, for almost two years now, accused Ukraine of launching the attacks. The International Atomic Energy Agency (IAEA), the global nuclear watchdog, confirmed there had been "at least three direct hits", including one of the six reactors at the plant, but did not say who was responsible.

While nuclear safety had not been compromised, "this is a serious incident with potential to undermine integrity of the reactor's containment system", the IAEA said. Director general Rafael Mariano Grossi said "such incidents must absolutely increase the risk of a major nuclear accident and must cease immediately".

Zaporizhzhia is one of five nuclear power stations in Ukraine, which meets about half of its electricity demand through nuclear energy. The six reactors at Zaporizhzhia have the capacity to produce 5,700 MW of electricity.

The drone attacks came three days after the power station suffered its most severe loss of external power supply. Nuclear power plants are connected to more than one external power source to run essential safety and security operations, including the crucial task of cooling the reactors. The Zaporizhzhia plant has six external power lines, but outages or disconnections during the war have on several occasions left it dependent either on a single external source or on generators. The facility has suffered complete blackouts on eight occasions since August 2022, and managed only on generators.

The power station has also faced frequent shelling and mortar attacks from both sides, making it the most dangerous nuclear site in the world currently — even though other nuclear power stations in Ukraine have also suffered shelling and lost external power at some point during the war.

Strong but vulnerable

Most nuclear reactors are made of several layers of steel and concrete, and designed to absorb shocks from earthquakes of magnitude 8 or even higher. Ordinary shelling or gunfire can't impact them seriously, and it is not surprising that the drone attack did not cause much physical damage to the Zaporizhzhia station.

It is, however, not clear how a nuclear power plant would fare against a powerful bunker-missile attack, but such incidents has never happened, and no country is expected to be so reckless as to bomb a nuclear reactor. However, the war around Zaporizhzhia seems to be testing that assumption.

Risk from power outage

A power outage poses the biggest risk, and is the major concern. The insides of nuclear reactors get heated to thousands of degrees Celsius, and have to be constantly cooled. This is usually done by a circulation of water, which is maintained through an external power source. Multiple power lines are usually available at nuclear stations, which are also equipped with generators to maintain additional layers of redundancies.

The failure to adequately cool the reactors can result in meltdowns or explosions. In the Fukushima disaster of 2011, the nuclear plant itself survived the magnitude-9 earthquake, and shut down its operations in response. But the resultant tsunami flooded the entire area, including the power station, which disabled all power lines and backup systems. As a result, three reactors at the facility suffered partial meltdowns and allowed the leakage of nuclear radiation.

As part of the lessons from the Fukushima disaster, several nuclear reactors installed "passive" cooling systems as an additional layer of safety. "Passive" systems do not require electricity and, as, therefore, continue to operate even after a power outage. One example would be of a system that relies on gravity— water circulation is maintained by ensuring that the supply comes from a higher-altitude location.

Courting avoidable disaster

All these measures, however, are meant to deal with eventualities that are beyond the control of humans. The magnitude-9 earthquake in Fukushima in 2011 was an unexpected, once-in-a-century event, against which the best of preparations might not have been adequate.

The situation in Zaporizhzhia, on the other hand, is entirely avoidable. Russia and Ukraine have been courting disaster, and the rest of the world has been unable to do anything apart from warning them of the dangers, of which they are already fully cognizant.

The IAEA has a team stationed at the Zaporizhzhia station, but its many job has been to offer technical advice to keep the facility safe, and to intervene in regular maintenance activities. It cannot stop the war, or convince the two sides to keep a safe distance from the nuclear reactors.

The drone attack has made a mockery of the five principles that Director General Grossi put before the UN Security Council last year for the two warring sides to follow. There has been no damage this time, but there is no guarantee that another attack will not take place.

Grossi issued another appeal on Sunday: "I firmly appeal to the military decision-makers in Ukraine from any action violating the basic principles that protect nuclear facilities. No one can conceivably benefit or get political, military or political advantage from attacks against nuclear facilities. This is a step."

- **Risks at Zaporizhzhia nuclear power plant after drone attack**

1. **Constant threat:** Fighting a war around a nuclear plant has put nuclear safety and security in constant jeopardy.

2. **Direct risk from crash**: The model of containment structure used in Zaporizhzia "exhibits vulnerabilities to the effects of an aircraft crash" and a fighter jet crashing downwards into the dome, where the **structure is thinner, could penetrate it**, causing **concrete chunks** and **aircraft engine parts** to fall inside.
3. **Potential target:** External power lines essential to **cooling nuclear fuel** in the reactors are a softer potential target. Cooling fuel even in reactors in cold shutdown is necessary to prevent a nuclear meltdown.
4. **Risk of explosion: Pressurised water** is used to transfer heat away from the reactors even when they are shut down, and pumped water is also used to cool down removed spent nuclear fuel from the reactors. Without enough water, or power to pump the water, the fuel could melt down and the **zirconium cladding** could release hydrogen, which can explode.

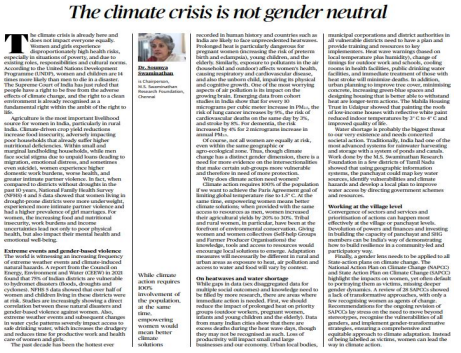
- **Threats to dry spent fuel storage facility**

1. Besides the reactors, there is also a dry spent fuel storage facility at the site for **used nuclear fuel assemblies**, and spent fuel pools at each reactor site that are used to cool down the used nuclear fuel.
2. **Release of radioactive isotopes**: Without water supply to the pools, the water evaporates and the temperatures increase, risking a fire that could release a number of **radioactive isotopes.**
   - ❖ An emission of hydrogen from a spent fuel pool caused an explosion at reactor 4 in **Japan's Fukushima nuclear disaste**rin 2011.
3. **Release of radionuclides**: A meltdown of the fuel could trigger a fire or explosion that could release a **plume of radionuclides** into the air which could then spread over a large area.

- **Zaporizhzhia nuclear power plant**
  - **Location:** Energodar, Ukraine
  - **River:** Dnieper River
  - **Located on reservoir bank:** Kakhovka reservoir
  - The Zaporizhzhya Nuclear Power Plant is located near the town of Enerhodar in Zaporizhzhia Oblast, Ukraine.
  - It is situated on the Dnieper River, approximately 80 kilometers (50 miles) southeast of the city of Zaporizhzhia.
  - **Type:** The Plant consists of six power units, and each unit is equipped with a specific type of reactor. The reactors at Zaporizhzhya are of the **VVER (Water-Water Energetic Reactor) type**, which is a pressurized water reactor (PWR) design.
  - The plant is just 500 km (300 miles) from the site of the world's worst nuclear accident, the 1986 **Chornobyl disaster.**
  - The Chornobyl accident spread **Iodine-131, Caesium-134, Strontium-90 and Caesium-137** across parts of northern **Ukraine, Belarus, Russia, northern and central Europe**.

10th April, 2024

1. The climate crisis is not gender neutral
GS 3 (Environment)


The climate crisis is not gender neutral

- **Why in News:** The impact of climate change on women's health and well-being, as well as the importance of incorporating gender-sensitive approaches into climate action plans, has gained prominence in recent discussions.
- **Disproportionate Health Risks:**
  - **Gender impact of climate-related events:** Women and girls face disproportionately high health risks due to climate change, particularly in impoverished situations and influenced by existing cultural norms. Women and children are significantly more likely than men to die in disasters, emphasizing the gendered impact of climate-related events.
  - **Food insecurity**: Climate-driven factors such as crop yield reductions exacerbate food insecurity, leading to adverse health outcomes for women, especially those in rural areas who heavily depend on agriculture for livelihoods.
  - **Impact on physical health:** Extreme weather events, such as heatwaves, further endanger vulnerable groups like pregnant women, young children, and the elderly, highlighting the need for targeted interventions to mitigate health risks.
- **Empowering Women in Climate Action:**
  - **Gender-sensitive approaches** in climate action are essential for ensuring the effectiveness and inclusivity of mitigation and adaptation measures.
  - **Empowering women with access** to resources and decision-making roles can lead to better climate solutions, increased agricultural yields, and enhanced community resilience.
  - **Local-level interventions**, driven by women collectives and participatory approaches, can facilitate innovative solutions to climate challenges and contribute to sustainable development goals.

2. India Restarts Import Restrictions on Solar Modules
GS 3 (Economy)

The 'import restrictions' on solar PV cells

- **Why in News:** The government recently **re-imposed restrictions on import of solar modules**. The move was taken to boost local manufacturing as domestic capacities are now ready to meet the demand and need to be supported.
- **Need to focus on solar power generation in India**
  - **To meet its targets:** The **government's ambitious target** of **500 GW** of installed capacity from non-fossil fuels by 2030 is the main driver to scale solar power in India.
  - **To cater increasing demand for energy:** India also accounts for the fastest rate of growth for demand of electricity through 2026 among major economies.
    - ❖ This is because of strong economic activity and expanding consumption of products to mitigate extreme weather. Solar power accounted for about one-third of all energy generated from renewables between April 2023 and February 2024.
  - **To tap full potential:** The country has an estimated solar power potential of 748.99 GW. Hence, the potential of solar energy is not fully tapped, so far.
- **Efforts made by India :** To address this over dependence, India made three significant efforts over the past five years.
  - **Notification of the ALMM order (2019**: This list consists of manufacturers who "are eligible for use in Government Projects/Government assisted projects/ projects under Government schemes & programmes, including projects set up for sale of electricity to the Central and State Governments.
  - **PLI Scheme:** The government proposed the **Rs 19,500 crore PLI scheme** in the Union Budget of 2022-23. This was to scale domestic manufacturing of the entire solar supply chain — from polysilicon to solar modules.
  - **Custom duty:** The government also introduced a steep **40% customs duty** on PV modules and 25% on PV cells. These duties were halved as solar capacity additions slowed.
- **Reason behind China's leading position as exporter**

- **Cheap power supply to industries:** China was the most cost-competitive location to manufacture all components of the solar PV supply chains. This is mainly because of the lower cost of power supplied to the industry, as electricity accounts for more than 40% of production costs for polysilicon and almost 20% for ingots and wafers.
- **Recognition as strategic sector:** China's policies prioritised **solar PV as a strategic sector**, and growing domestic demand enabled economies of scale and supported continuous innovation throughout the supply chain.

- **Import restriction vs import substitution**
  - The government's focus to increase local sourcing of solar modules has been widely reported as **'import restrictions'.**
  - However, the government's decision has been premised on the estimation that measures, such as the **Production Linked Incentive (PLI) scheme**, has boosted India's domestic sector's production capacities and bettered price competitiveness to meet local demand. This is an **import substitution effort**, and not an attempt to restrict imports.
- **India's imports**
  - India imported about USD 11.17 billion worth solar cells and modules in the past five years. This is worth 0.4% of India's total exports in the same period.
  - China accounted for 53% of India's solar cell imports, and 63% of solar PV modules.
- **India's solar module manufacturing capacity**
  - As on December 2023, India's cumulative solar module manufacturing capacity has reached **64.5GW**, and solar cell manufacturing capacity totalled 5.8GW.
  - **India's domestic module manufacturing capacity** is projected to surpass 150GW, and cell manufacturing capacity is expected to reach 75GW by 2026.

3. <u>Rights of the Voters' in India</u>
<u>GS 2 (Elections)</u>

Candidates have a right to privacy from voters, rules SC

Krishnadas Rajagopal
NEW DELHI

The Supreme Court on Tuesday held that an election candidate has a right to privacy from voters and need not lay out every bit of his or her personal life and possessions, for the electorate to examine with a magnifying glass.

A Bench of Justices Aniruddha Bose and Sanjay Kumar said a candidate's choice to retain his privacy on matters which were of no concern to the voters or were irrelevant to his candidature for public office did not amount to a "corrupt practice" under Section 123 of the Representation of People Act, 1951. Such non-disclosure would not amount to a "defect of a substantial nature" under Section 36(4) of the 1951 Act.

Justice Kumar, who wrote the judgment, observed there was no compulsion on a candidate to lay his life threadbare for the electorate to prod and scrutinise.

Sizeable asset

"It is not necessary that a candidate declare every item of movable property that he or his dependent family members own, unless these items are of such value as to constitute a sizeable asset in itself or reflect upon his candidature, in terms of his lifestyle, assets and liabilities to be disclosed," Justice Kumar distinguished.

But the Court said every case would turn on its own peculiarities on what would amount to a non-disclosure of assets of a substantial nature. Suppressing information about a collection of expensive watches from voters would be a substantial defect.

The judgment came in a petition filed by Arunachal Pradesh MLA Karikho Kri challenging a Gauhati High Court verdict declaring his election to the 44-Tezu Assembly Constituency of Arunachal Pradesh void for not declaring three vehicles as his assets in his affidavit filed in Form No 26 appended to the Conduct of Elections Rules, 1961.

Mr. Kri had won the elections on May 23, 2019 as an Independent candidate. The vehicles in question were a Kinetic Zing Scooty, a Maruti Omni van used as an ambulance and a TVS Star City motorcycle. The scooter was sold as scrap in 2009. The other two vehicles were also sold.

Ruling in favour of Mr. Kri, the Supreme Court agreed with Mr. Kri's lawyers that vehicles, once sold, could hardly be considered as "assets" of the candidate.

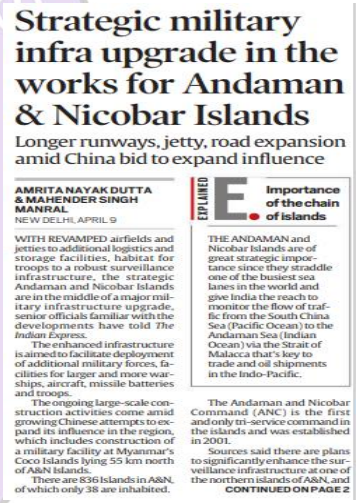
The court said voters have a right to the disclosure of information which was essential for choosing the candidate for whom a vote should be cast.

- **Why in News:** The SC held that an election candidate has a right to privacy from voters and need not lay out every bit of his or her personal life and possessions, for the electorate to examine with a magnifying glass.
- **What is the Background of the Judgement?**
  - The judgement came in a petition filed by an Arunachal Pradesh MLA (Karikho Kri) challenging a Gauhati HC decision. He won the elections as an independent candidate.
  - Last year, the HC declared his election (to the 44-Tezu Assembly Constituency) **void for not declaring 3 vehicles as his assets** in his affidavit filed in Form No 26 appended to the Conduct of Elections Rules, 1961.
  - The vehicles in question were a Kinetic Zing Scooty, a Maruti Omni van used as an ambulance and a TVS Star City motorcycle. The scooter was sold as scrap in 2009. The other two vehicles were also sold.
  - **The Gauhati HC did not examine the statements of the buyers.**
- **What has the Supreme Court Ruled?**
  - According to the apex court,
    - **Voters' Right to Know is not absolute.**
    - **A candidate's choice to retain his privacy** on matters which were of no concern to the voters or were irrelevant to his candidature for public office,
    - **Did not amount to a 'corrupt practice'** under Section 123 of the Representation of People Act (RPA), 1951.
  - Such non-disclosure **would not amount to a "defect of a substantial nature"** under Section 36(4) of the RPA 1951.
  - There was no obligation for a candidate to lay his life exposed for the electorate to probe and scrutinise.
  - **It is not necessary that a candidate declare every item of movable property** that he or his dependent family members own, such as clothing, shoes, crockery, stationery and furniture, etc.
  - But the Court said **every case would turn on its own peculiarities** on what would amount to a non-disclosure of assets of a substantial nature.
    - **For example,** suppressing information about a collection of expensive watches from voters would be a substantial defect.
    - However, if a candidate and his family members each own a simple watch, suppression of the value of such watches may not amount to a defect at all.
- **Rights of the Voters' in India:**
  - The voter's have **certain rights that are bestowed on them by the Election Commission of India (ECI)**.

- These rights are **safeguarded by the Constitution of the country** and are provided to all the citizens of the country. Such Voter rights are –
- **Right to Know**:
  - The voter has the right to know about the candidates contesting the elections.
  - The voters have the right to get the details of the past records of the candidate (criminal records, if any), financial position of the candidate, their election manifesto, etc.
- **Voting rights of NRIs:**
  - **The NRIs are those citizens of the country** that are not present at their place of residence for reasons of employment or any other reasons but are still eligible to vote in the elections of the country.
  - NRIs were not initially allowed to vote in the elections of the country. However, a subsequent amendment allowed the NRIs to vote for elections in India.
- **Voting rights of Prisoners:** The constitution of India and the guidelines of the ECI do not permit a person who is imprisoned to vote in the upcoming elections of the country.
- **NOTA (Right Not to Vote):**
  - None of The Above (NOTA) is another right of the voter where the voter participates in the electoral process but does not vote or choose any of the contesting candidates.
  - This right is exercised when the voter feels that none of the contesting candidates are worthy of his/her vote.
- **Tendered Voting Rights:**
  - This right can be exercised by a voter when he/she realises that another person has wrongly voted on their behalf.
  - Such a person will need to provide a valid identity proof to authenticate their voting right and vote on a separate ballot paper as per ECI.
- **Voting rights of Disabled or Infirm Citizens:** The ECI will provide assistance to such voters to cast their votes by taking their vote with the help of an Electoral Officer.

4. Military infra-upgrade in A&N Islands
GS 2 (Security)

- **Why in News:** With revamped airfields and jetties to additional logistics and storage facilities, habitat for troops to a robust surveillance infrastructure, the strategic **Andaman and Nicobar Islands** are in the middle of a major military infrastructure upgrade.
- **About Andaman and Nicobar Islands**
  - The ANI are two groups of islands—the Andaman Islands and the Nicobar Islands, covering an area of **8,249 sq km.**
  - The entire island chain consists of **836 islands** including islets and rocky outcrops, of which some **38** are permanently inhabited by a population of over 430,000.
  - The islands are governed as a **single Union Territory** by the Central Government of India, through the **Andaman Nicobar Administration.**
  - The **capital city of Port Blair** is the seat of the Administration, headed by the Lieutenant Governor, who serves as direct link with the Central Government.
  - The ANI are also home to **India's only integrated tri-service** command of the armed forces—the **Andaman and Nicobar Command** for maritime surveillance and enhancing India's strategic presence in the eastern Indian Ocean as it merges into the Pacific.


Strategic military infra upgrade in the works for Andaman & Nicobar Islands

Longer runways, jetty, road expansion amid China bid to expand influence

AMRITA NAYAK DUTTA & MAHENDER SINGH MANRAL
NEW DELHI, APRIL 9

WITH REVAMPED airfields and jetties to additional logistics and storage facilities, habitat for troops to a robust surveillance infrastructure, the strategic Andaman and Nicobar Islands are in the middle of a major military infrastructure upgrade, senior officials familiar with the developments have told *The Indian Express*.

The enhanced infrastructure is aimed to facilitate deployment of additional military forces, facilities for larger and more warships, aircraft, missile batteries and troops.

The ongoing large-scale construction activities come amid growing Chinese attempts to expand its influence in the region, which includes construction of a military facility at Myanmar's Coco Islands lying 55 km north of A&N Islands.

There are 836 Islands in A&N, of which only 38 are inhabited.

EXPLAINED

Importance of the chain of islands

THE ANDAMAN and Nicobar Islands are of great strategic importance since they straddle one of the busiest sea lanes in the world and give India the reach to monitor the flow of traffic from the South China Sea (Pacific Ocean) to the Andaman Sea (Indian Ocean) via the Strait of Malacca that's key to trade and oil shipments in the Indo-Pacific.

The Andaman and Nicobar Command (ANC) is the first and only tri-service command in the islands and was established in 2001.

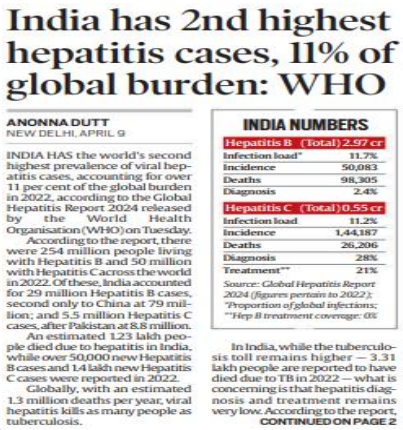
Sources said there are plans to significantly enhance the surveillance infrastructure at one of the northern islands of A&N, and

CONTINUED ON PAGE 2

- **Need of the move**
  - **Monitoring Chinese activities**: India is monitoring the Chinese aided activity in the nearby **Coco Islands of Myanmar.**
    - ❖ Beijing's strategic footprint can be seen Ream national park in Cambodia, **Hambantota port** in Sri Lanka, **Gwadar** in Balochistan, **Chah Bahar** in Iran and at **Khalifa port** in UAE.
  - **Strategic importance of islands:** The Andaman and Nicobar Islands are of great strategic importance as they straddle one of the busiest shipping lanes in the world and give India the reach to monitor the flow of traffic from the **South China Sea (Pacific Ocean) to the Andaman Sea (Indian Ocean)** through the **Strait of Malacca**, which is crucial for trade and oil shipments in the **Indo-Pacific.**
- **Coco Islands**
  - The Coco Islands are a part of **Yangon region of Myanmar**. It is a small, remote island in the **Bay of Bengal.**
  - Great Coco is small at **11km in length**, but its location is **strategically important.**

- It is not only close to the **Strait of Malacca**, one of the **world's busiest shipping lanes,** it also lies 55km from India's Andaman and Nicobar Islands, which host **Indian navy and air force bases.**

5. WHO's 2024 Global Hepatitis Report
GS 2 (Health)



India has 2nd highest hepatitis cases, 11% of global burden: WHO

ANONNA DUTT
NEW DELHI, APRIL 9

INDIA HAS the world's second highest prevalence of viral hepatitis cases, accounting for over 11 per cent of the global burden in 2022, according to the Global Hepatitis Report 2024 released by the World Health Organisation (WHO) on Tuesday. According to the report, there were 254 million people living with Hepatitis B and 50 million with Hepatitis C across the world in 2022. Of these, India accounted for 29 million Hepatitis B cases, second only to China at 79 million; and 5.5 million Hepatitis C cases, after Pakistan at 8.8 million.

An estimated 1.23 lakh people died due to hepatitis in India, while over 50,000 new Hepatitis B cases and 1.4 lakh new Hepatitis C cases were reported in 2022.

Globally, with an estimated 1.3 million deaths per year, viral hepatitis kills as many people as tuberculosis.

INDIA NUMBERS

Hepatitis B (Total)	2.97 cr
Infection load*	11.7%
Incidence	50,083
Deaths	98,305
Diagnosis	2.4%
Hepatitis C (Total)	0.55 cr
Infection load	11.2%
Incidence	1,44,187
Deaths	26,206
Diagnosis	28%
Treatment**	21%

Source: Global Hepatitis Report 2024 (figures pertain to 2022); *Proportion of global infections; **Hep B treatment coverage: 6%

In India, while the tuberculosis toll remains higher — 3.31 lakh people are reported to have died due to TB in 2022 — what is concerning is that hepatitis diagnosis and treatment remains very low. According to the report,

CONTINUED ON PAGE 2

- **Why in News:** India accounted for the second-highest number of cases of **hepatitis B and C** in 2022 after China, with 3.5 crore infections, according to a report by the **World Health Organisation (WHO).**
- **Key-highlights of the Report**
  - **Report:** *WHO's 2024 Global Hepatitis Report*
  - 254 million people lived with hepatitis B and 50 million with hepatitis C in 2022 globally.
  - **India,** which was second only to China in the viral hepatitis burden, registered 2.98 crore hepatitis B cases in 2022 while the number of hepatitis C infections stood at 55 lakh.
  - China registered 8.3 crore cases of hepatitis B and C, representing 27.5 per cent of the total disease burden.
  - With a total of 3.5 crore cases, India accounted for 11.6 per cent of the total disease burden globally that year.
- **About Hepatitis**
  - Hepatitis is an **inflammation of the liver** that can cause a range of health problems and can be fatal.
  - There are five main strains of the hepatitis virus, referred to as types **A, B, C, D and E.**
  - While they all cause liver disease, they differ in important ways including modes of transmission, severity of the illness, geographical distribution and prevention methods.
  - In particular, **types B and C lead to chronic disease** in hundreds of millions of people and together are the most common cause of liver cirrhosis, liver cancer and viral hepatitis-related deaths.
  - **Symptoms**: Hepatitis symptoms include dark urine, yellowing of the eyes and skin, sickness, fatigue, fever, loss of appetite, nausea, vomiting, abdominal pain, light-coloured stools and joint pain.
  - **Treatment:** There is no specific treatment for hepatitis but drugs like steroids can help, as well as medicines to treat the symptoms.

6. Lavender Cultivation
GS 3 (Agriculture)

Lavender cultivation turns farmers into big businessmen in J&K's Doda

ARUN SHARMA
JAMMU, APRIL 9

WHEN LAVENDER cultivation was first introduced to Bhaderwah subdivision in Jammu and Kashmir's Doda district in 2015, most farmers were sceptical and just a handful gave it a go. Today, these early adopters have significantly expanded cultivation, employ 30-40 people each on a full-time basis, have their own distillation units for making lavender oil, and market their products in different parts of the country.

Once a small-scale farmer, Bharat Bhushan from Lehrote village is among the success stories. Having dropped out of school after class 10, he now earns Rs 1-1.5 lakh a month. In 2018, he bought the family's first car – for his son – and later, another one for himself.

Another early adopter, Touqeer Baghan, has studied up to class 11. "Before lavender cultivation, I had a motorcycle. Today, I have a Thar," said Baghan, who is from Vasuki Dera mohalla of Bhaderwah town.

Farmers in several villages of Bhaderwah subdivision are increasingly moving to lavender cultivation from maize crop, bringing with it a marked improvement in livelihood.

According to officials, more than 700 acres of farmland has been brought under lavender cultivation in the area since 2017, and another 100 acres is set to be added. The crop was officially introduced in Bhaderwah by the Council Of Scientific and Industrial Research-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu, in 2015.

Until 2017, no one in Tipri, Lehrote, or Karyan – villages with nearly 200 households – had a four-wheeler, and most of the houses there were kutcha.

In Tipri, former sarpanch Om Parkash started cultivating lavender instead of maize in 2016, and two years later, he became one of the first in the village to own a car, a Maruti Alto.

Now, the entire village cultivates lavender, and around half of the 40 households have a vehicle. The situation is similar in Lehrote and Karyan. Moreover, nearly all houses in the three villages – all in Tipri panchayat – are now pucca. "Earlier, I used to grow a maize crop and earn only Rs 15,000-20,000 from it. After lavender cultivation, I started earning Rs 1-1.5 lakh," said Nek Chand of Tipri.

Lavender, which can be grown in areas that experience snowfall and have a hilly terrain, blossoms and is ready for harvesting two-and-a-half years after it is planted. The same plant can bear flowers for 18-20 years, and does not require the amount of insecticides, pesticides, and other chemicals used in conventional crops like maize and paddy.

Dr Zabeer Ahmed, director of CSIR-IIIM Jammu, said, "In 2014, we tried to persuade farmers to start lavender cultivation, but they were reluctant in view of the risks involved in switching over from their conventional maize crop." In 2015, he said, lavender cultivation was introduced in Bhaderwah under the CSIR's Aroma Mission.

Bharat Bhushan and Touqeer Baghan were among just a handful of farmers to take it up at the time. Now, Ahmed said, they are industrialists. They are not only making oil from lavender flowers, but are also involved in further development of the product, like manufacturing perfumes, soaps, agarbatti, room fresheners, and so on, and selling them in the market. They have even established their own labs for quality testing of the oil, and one of them also has a marketing office in Goa. Both have also formed a cluster of farmers who, too, have started growing lavender on their land.

Ahmed said CSIR plans to distribute lavender plants to farmers in parts of Kathua, Rajouri, Poonch, and the Kashmir Valley, besides Uttrakhand, Himachal Pradesh and the Northeast.

He said that 50 distillation plants, including five mobile units, have been set up across the Union Territory of J&K to help farmers extract oil from the lavender flowers.

CSIR-IIIM, Jammu, provides lavender growers end-to-end support.

A small worry

However, the sharp decline in the price of lavender oil, now around Rs 2,500-3,000 per litre as opposed to Rs 12,000 a few years ago, is a worry. "We have to sustain this prosperity and the subsequent change in the lifestyle of these farmers," Dr Ahmed said. The price drop has been attributed to the import of oil from Bulgaria, France and China by buyers elsewhere in India, he explained.

More than 700 acres of farmland have been brought under lavender cultivation in the area since 2017. Express

- **Why in News:** According to officials, more than 700 acres of farmland has been brought under lavender cultivation in the Jammu and Kashmir area since 2017, and another 100 acres is set to be added.
- **About Lavender Cultivation:**
  - It is a crop **native to Europe** but was introduced in the temperate regions of Jammu & Kashmir state by the CSIR Aroma Mission.
  - It is a small, **perennial aromatic herb shrub** used in the fragrance, specialty food, and alternative medicine industries.
  - Propagation of lavender can be done by **seeds, rooted cuttings, tissue culture, and layering.**
  - **Required climatic conditions**
    - **Soil:** It can grow well in light well-aerated soil rich with organic matter. It grows best in **neutral to alkaline soil** which is free draining. This crop is very sensitive to waterlogging however can go well with poor or eroded soil.
    - **Rainfall:** It can produce well with an annual rainfall **range from 300 to 1400 mm** per year.
    - **Climate:** It is a **hard and temperate plant** that can tolerate drought and frost conditions. The ideal climatic conditions are **cool winters and cool summers**. It requires a good amount of sunlight.
    - It can be grown in areas that experience **snowfall and have a hilly terrain**.
    - **Applications:** Food and flavouring, pharmaceutical and therapeutic, cosmetic, and industrial purposes etc.

7. Why Botswana threatened to send 20,000 elephants to Germany?
GS 2 (International Relations)

Kill elephants, save them: why Botswana wants to gift 20,000 to Germany

ALIND CHAUHAN
NEW DELHI, APRIL 9

BOTSWANA HAS literally an elephantine problem — it has too many elephants. And President Mokgweetsi Masisi has now said he would like to send 20,000 of the animals to Germany, where there is a proposal to make it tougher to import trophies from hunting animals.

Botswana is home to the world's largest elephant population of 1.3 lakh animals. Hunting has helped keep their numbers in check, and brought revenues from trophy-hunting licences issued to rich westerners. Germany is said to be the largest European importer of African elephant trophies.

Why are there so many elephants in Botswana?

Unlike its south-central African neighbours, Botswana has been a safe haven for elephants due to its stable government and small human population. Following conflict-spurred mass poaching in Namibia and Angola, elephants in Botswana stopped crossing the Chobe river, a tributary of the Zambezi that marks Botswana's border with Namibia.

Botswana also implemented strict conservation policies, giving shoot-to-kill orders against suspected poachers in 2013. The following year, the country banned licensed trophy hunting — however, it lifted the ban in 2019.

And why was hunting allowed again?

Successful conservation resulted in a steady increase in Botswana's elephant population over the years. In the early 1960s, the country had fewer than 10,000 elephants; by the mid-1990s, the population had reached 80,000, according to the independent newsroom Conservation Frontlines.

Today, elephants inhabit about 40% of Botswana's land, which has led to increased human-animal conflict. Herds often damage homes in rural communities, diminish water from pipes, feed on or destroy crops, and trample people and cattle to death.

"We are forced to collect our livestock early as we are afraid of the elephants...in the cattle posts, people have deserted...By 4 pm, we have rounded off the animals...so by the time the elephants come, they do not find anyone. We wake up...to find their tracks. There are too many elephants," president of Gubulgango town told *Voice of America*.

A large population of elephants also threatens other species and leads to biodiversity loss and habitat degradation — elephants tear down trees for fodder and consume large amounts of water, which can cause a decline in non-elephant wildlife.

EXPLAINED WILDLIFE

How does elephant hunting help?

Botswana has been donating its elephants — it gave around 8,000 to Angola last year, and 500 to Mozambique in 2022 — but this has not made much of a difference.

Lifting the ban on trophy hunting helps in two ways — it lowers the population, and helps the economy as hunters cough up as much as $50,000 for each animal they kill.

A report in *Morning Brew* said trophy-hunting brought $5 million to local communities in Botswana in 2021, according to government figures. Also, "trophy hunters injected $250 million into South Africa's economy yearly and supported 17,000 jobs, according to one estimate in 2016," the report said.

It has also been argued that regulated trophy-hunting ultimately helps the species as governments pump the money into conservation and share profits with local communities, which can prevent habitat loss.

So what's the problem, then?

Western countries and animal rights advocates deem hunting to be cruel and unethical, and responsible for quickening population decline in imperilled species. "Trophy hunters prefer to kill the largest, strongest animals, whose loss causes population declines," conservation group Humane Society International/HSI says on its website.

According to HSI, the gains in the economy may be overstated. "Even in key African countries, trophy hunters contribute at most 0.03 per cent of GDP and at most 0.76 per cent of overall tourism jobs," it says. It is also alleged that corruption prevents local communities from benefiting from trophy hunting.

Nonetheless, many experts argue that outright banning is not necessary. Conservation researcher Enrico Di Minin of the University of Helsinki told NPR: "If countries want to ban trophy hunting, they need to have an alternative source of revenue worth hundreds of millions of dollars every year... Just banning things without knowing the consequences is actually creating more problems for the species."

- **Why in News:** Germany recently proposed to enact stricter limits on import of hunted trophies (animals are hunted and their remains are kept as trophies). Reacting to this, Botswana President threatened to send 20000 elephants to Germany as it is facing the issue of large elephant population.
- **Why is Botswana Home to World's Largest Elephant Population?**
  - Stable government, human population, strict conservation policies have made Botswana a safe haven for Elephants. Moreover, after conflict-spurred mass poaching in Namibia and Angola, elephants stopped crossing the Choba river and preferred living in Botswana.
- **Why have elephants become an issue for Botswana?**
  - Rising human-animal conflict- as per reports-elephants are regularly damaging rural homes, drinking water from pipes, feeding on or destroying crops, and trampling people and cattle to death. They are also a threat to other species and can lead to significant biodiversity loss and habitat degradation as elephants tear down trees for fodder and consume large amounts of water resulting in a decline in non-elephant wildlife.
- **How is Botswana Dealing with this Problem?**
  - It has donated elephants to other countries like Angola and Mozambique, lifted ban on trophy hunting and boost the local economy with hunters as other countries paying as much as $50,000 for each elephant killed.
- **Is Trophy Hunting Good or Bad?**
  - Authorities argue that regulated trophy hunting helps certain species, rich hunters' money can be used for conservation and profits could be shared with local communities resulting in prevention of habitat loss and better protection of other animals. But animal rights advocates deem the practice to be unethical, responsible for exacerbating the population decline. Rampant corruption at various levels of government also gives no benefit to local communities.
- **Is Banning Trophy Hunting an Ideal Move?**
  - Banning the practice completely can lead to increased poaching and illegal activities and loss of income.

11th April, 2024

1. The advent of a holistic approach to 'one health'
GS 2 (Health)

The advent of a holistic approach to 'one health'

The interdependence between humans, animals and environment has been made increasingly evident with the emergence of pandemics such as COVID-19. It is not just humans who are affected by pandemics but also livestock – an example being the outbreak of lumpy skin disease that has spread across countries.

The recent decision on the 'National One Health Mission' by the cabinet marks a milestone.

In July 2022, the Prime Minister's Science, Technology, and Innovation Advisory Council (PM-STIAC) endorsed the setting up of the 'National One Health Mission'. Since then, 13 Ministries and Departments as well as science funding agencies – this includes the Department Of Science and Technology, the Department of Biotechnology (DBT), the Council of Scientific and Industrial Research (CSIR), the Department of Pharmaceuticals, and AYUSH, or Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy – the Ministries of Health, Animal Husbandry and Environment as well as Defence came together to shape the mission, taking one of the most holistic approaches to one health and pandemic preparedness in the world. There was consensus among the leadership of these Ministries to have a National Institute for One Health. Based in Nagpur, it is to be the anchor in coordinating activities nationally, and the nodal agency to coordinate international activities across the space of one health. The foundation stone of this institute was laid by the Prime Minister Narendra Modi on December 11, 2022.

More a journey

The goals of the 'National One Health Mission' are to develop strategies for integrated disease surveillance, joint outbreak response, coordinated research and development (R&D) and ensure seamless information sharing for better control of routine diseases as well as those of a pandemic nature. While diseases that affect humans such as COVID-19 are well known, diseases that affect animals such as foot and mouth disease or lumpy skin disease can hit productivity and trade. Similarly, these and other diseases such as canine distemper affect wild animals and their conservation. Only a coordinated approach will ensure that we are better prepared for such diseases as well as those that can cause the next pandemic such as avian influenza or Nipah.

Pandemic preparedness is incomplete without there being a focus on strong R&D. Focussed R&D can ensure that we are better prepared for emerging diseases through the development of tools such as vaccines, therapeutics, and diagnostics, that is critical for India and the world. This is where all the participating departments such as the DBT, CSIR, the Indian Council of Medical Research, the Indian Council of Agricultural Research and the Department of Pharmaceuticals will play a role. It is not just government departments but also our academic centres and the private sector that will be the critical stakeholders in making this a reality. All these efforts can become effective only when there is close coordination between the Centre and States. Therefore, working with States will not only help them in introducing this approach in a much better way at the ground level, but the lessons also learned in the process of implementation will help in evolving an effective strategy – the approach to One Health is more a journey than a destination.

A network of laboratories

Under the mission, a national network of high-risk pathogen (biosafety level or BSL 3 and BSL 4) laboratories has been created. Bringing such laboratories that are managed by different departments together will serve to address the disease outbreak response better regardless of human, animal and environmental sectors. There will be better resource utilization of expensive but much-needed infrastructure but also good linking from across sectors better to tackle diseases such as Nipah that involve bats, pigs, and humans, for example.

Further, India has to augment its epidemiology and data analytic capability. Under the mission, efforts are being made to apply artificial intelligence (AI) and machine learning and disease modelling to address these issues and coordinate capacity building in epidemiology across sectors. Emerging approaches such as genomic surveillance from wastewater showed promise during the COVID-19 pandemic. This will be expanded to other sentinels such as places where animals (livestock or wildlife) congregate for a broader set of diseases to be taken up so that we mainstream these approaches to be a part of routine surveillance across human, livestock and environmental sectors.

A global subject

'One Health' is a global topic. During India's presidency of the G-20, this approach was highlighted and widely endorsed by all the members to work together in specific areas such as building better surveillance capacity, analytic capability and setting up an international network of 'One Health' institutes.

'One Health' is not just limited to diseases. It concerns wider aspects such as antimicrobial resistance, food safety, plant diseases and the impact of climate change on all of these. Intersectoral topics such as 'One Health' require close engagement of not just different governmental agencies but also non-governmental organisations, academia, the private sector and also citizens. Such an approach focused on an actionable framework will further the goal of moving closer to the clarion call of 'One Earth, One Health' and 'Health for All'.

Ajay Kumar Sood is the Principal Scientific Adviser to the Government of India

The 'National One Health Mission' is the result of recognition that only a coordinated approach will ensure a better response to disease outbreaks

- **Why in News:** The recent decision by the cabinet on the **'National One Health Mission'** marks a significant step in addressing the **interdependence between humans, animals, and the environment**, especially in light of the emergence of pandemics like COVID-19.
- **Goals of the National One Health Mission:**
  - **Integrated disease surveillance**: The mission aims to develop strategies for integrated disease surveillance, joint outbreak response, coordinated research and development (R&D), and seamless information sharing to control routine and pandemic diseases affecting humans, animals, and the environment.
  - **Addressing diseases** affecting not only humans but also **livestock and wildlife** (**foot and mouth disease**, **lumpy skin disease)**, is important, which can impact productivity, trade, and conservation efforts.
  - **Pandemic preparedness** is emphasized, highlighting the need for **strong R&D** to develop tools like **vaccines, therapeutics, and diagnostics**, with participation from all sectors.
- **Creation of a Network of Laboratories:**
  - **National network:** Under the mission, a national network of high-risk pathogen laboratories (Biosafety level 3 and 4) has been established to facilitate better disease outbreak response across human, animal, and environmental sectors.
  - **Resource optimization and collaboration:** This initiative enables resource optimization and collaboration between different departments, enhancing the response to diseases like **Nipah** that involve multiple species.
  - **'One Health'** is recognized as a global topic, endorsed by organizations like the G-20 during India's presidency, emphasizing collaboration in areas like surveillance capacity building and setting up international networks of 'One Health' institutes.

2. DGCA's Flight Duty Time Limitation Rules
GS 3 (Economy)

DGCA asks airlines to set timeline for new flight duty norms

Jagriti Chandra
NEW DELHI

The Directorate General of Civil Aviation has asked airlines to inform it when they will be willing to implement the new duty and rest norms for pilots which were delayed at their behest.

"You may kindly indicate the timeline required to prepare a roadmap for implementation of the revised FDTL norms and the timeline for subsequent implementation of the same," the Directorate General of Civil Aviation wrote in a notice to airlines on Wednesday.

The regulator has sought this information after the Delhi High Court gave the DGCA until May 8 to indicate the tentative date for implementation of the new norms.

These rules, which provide enhanced rest to pilots who have complained of mounting levels of fatigue, were earlier set to be implemented on June 1.

These rules were earlier set to be implemented on June 1.

But after intense pressure from airlines, the regulator in March quietly inserted a revised clause in the rules that effectively delayed their implementation indefinitely. Airlines had sought their postponement on the grounds that implementing them would increase their requirement for pilots, in the absence of which they would have to cancel 15% to 20% of flights.

The rules were announced on January 8 and increased the weekly rest period for pilots from 36 hours to 48 hours as well as curtailed night flying.

- **Why in News:** The Directorate General of Civil Aviation has written to Indian airlines, asking them to indicate when they would be in a position to implement the new Flight Duty Time Limitation (FDTL) rules.
- **Directorate General of Civil Aviation (DGCA):**
  - DGCA is the regulatory body in the field of Civil Aviation, primarily dealing with safety issues.
  - It was accorded a statutory status under the **Aircraft (Amendment) Bill, 2020**.
  - It is responsible for regulation of air transport services to/from/within India and for enforcement of civil air regulations, air safety and airworthiness standards.
  - It also co-ordinates all regulatory functions with International Civil Aviation Organisation.
  - **Headquarters**: New Delhi
- **Flight Duty Time Limitation Rules:**
  - Flight crew fatigue and exhaustion are seen as major factors contributing to human errors in aircraft operations, which can lead to catastrophic accidents.
  - Also, fatigue and exhaustion can be dangerous for the health of the crew.
  - Across airlines, pilots have been expressing concerns over growing fatigue and stress due to:
    - Being stretched to their limits in terms of flying hours,
    - Haphazard and ill-planned rostering, and
    - Unusually high crew utilisation levels as carriers compete to rapidly expand their networks.
  - The International Civil Aviation Organization (ICAO) mandates that the country where an aircraft operator or airline is based shall establish regulations for the purpose of managing fatigue.
  - The DGCA, in 2019, had issued the Flight Duty Time Limitation (FDTL) Rules, accordingly.
  - **Key Rules include**:
    - Different categories of maximum flight duty periods per day based on maximum permitted landings and flight time.
    - Mandatory rest periods between flight duty periods,
    - In-flight rest periods for long-haul flights,
    - Guidelines for scheduling night operations,

- Maximum cumulative flight time and duty period limitations per week, two weeks, four weeks, 90 days, and one year.
- The rules also include special norms for ultra-long-haul flights.
- FDTL rules prohibit airlines from asking flight crew to operate a flight if the prescribed time limitations are exceeded

- According to the DGCA, airlines are required to establish their own limitations on these counts within the regulator's framework of fatigue management regulations.

- **Background of DGCA Letter:**
  - Recently, the Directorate General of Civil Aviation has written to Indian airlines, asking them to indicate when they would be in a position to implement the new Flight Duty Time Limitation (FDTL) rules.
  - The communication from the DGCA follows a hearing in the Delhi High Court earlier this month.
  - The High Court had asked the DGCA to indicate the tentative date for the implementation of the new FDTL regulations that were initially supposed to be enforced from June 1.
  - However, the date was deferred due to stiff resistance from airlines. The DGCA was asked to indicate the likely implementation date in the next hearing scheduled for May 8.
  - The decision to postpone was in line with directions issued to the DGCA by the Ministry of Civil Aviation (MoCA) in March
- **Major Airlines' Concerns:**
  - In February, the **Federation of Indian Airlines (FIA)**, which comprises **IndiGo**, **Air India**, and **SpiceJet**—had written to the DGCA seeking postponement of the new rules by a year.
  - Airlines had been voicing concerns that implementation of the new rule would result in a requirement of around 20-25 per cent more pilots, whom they would not be able to hire and train in such a short period.
    - As per the new rules, among other changes, mandatory weekly rest period for pilots shall increase to 48 hours from the current 36.
    - Also, their night flying shall also come down through a combination of extension of definition of 'night' by an hour and curtailing the number of night landings allowed to be made by the same crew.
  - Clearly, these rules would require airlines to either hire and train more pilots in order to maintain their existing scale of operations. The alternative would be to scale back operations.
  - The FIA had said that carriers would have to cut capacity by 15-20 per cent if the new rules, notified in January, were implemented from June 1.
  - Hence, the DGCA has written to airlines, asking them to indicate when they would be in a position to implement the new rules.

3. <u>India posts defence attaché to expand strategic presence</u>
<u>GS 2 (Security)</u>

- **Why in News:** For the first time, India will post **defence attaches** in several countries including **Ethiopia, Mozambique, Ivory Coast, Philippines, Armenia and Poland** in line with its broader policy initiative to **expand strategic ties with key regions**, a move that comes amid renewed geopolitical rivalries.
- **Key-highlights**
  - After a gap of several decades, India will also post a defence attaché in Ethiopia.
  - A new military attaché is also being posted to Djibouti and will be only the second officer to hold the post.
  - **Djibouti** serves as a major maritime gateway around the **Red Seaand Gulf of Aden**, and is considered as a **prized location for military bases.**
  - New Delhi is also planning to rationalise the strength of its teams of military officials in its embassy in Moscow and high commission in London.
  - Last year, the **European Union (EU)** posted a military attache to its mission in India for the first time.
  - A total of 16 defence attaches from the Indian Army, the Navy and the Indian Air Force will shortly assume their new position.

India to send new defence attachés to several missions in Africa

Kallol Bhattacherjee
NEW DELHI

In a sign of expanding focus on military diplomacy, India is set to send defence attachés (DA) to a number of its missions in Africa for the first time, sources here have confirmed. The move is part of a larger adjustment of the DA in Indian missions scattered across continents and regions and is being implemented as India deals with dynamic situations in Indo-Pacific, Red Sea-Indian Ocean and Eurasia.

A source privy to the internal discussion said that out of all the continents, it is Africa that is expected to get four new DA. Out of that, one DA is likely to be sent to the Francophone western Africa, and three others are expected to be sent to three countries in eastern and southeastern Africa.

Indian missions in countries such as Ivory Coast, Mozambique, Ethiopia, and Djibouti are being discussed as part of the process. In the meanwhile, a number of DA posted to Indian missions abroad underwent a three-day predeployment training programme at the Sushma Swaraj Institute of Foreign Service this week.

A pre-deployment training programme for Defence Attaches at the Sushma Swaraj Institute of Foreign Service. @SSIFS_MEA/ X

Apart from the four countries in Africa, the Indian embassy in Poland is scheduled to get a new DA. At present the DA in the Indian embassy in the Czech Republic concurrently serves for the Indian mission in Warsaw.

The readjustment in the post of DA in multiple regions is part of India's evolving requirements that stretch from defence production and cooperation, to dealing with crisis situations that hinge on urgent mobilisation. The crises in Gaza and Ukraine have both highlighted the need for finding a more effective management of the DA in East Europe and Eurasia and in the East African region that is crucial for guarding Indian interests in the Red Sea and the western Indian Ocean.

In March, Indian marine commandos captured 35 Somalian pirates who had hijacked a bulk carrier and taken hostages. The pirates were brought to Mumbai in *INS Kolkata*. The operation took place in the backdrop of continued attacks on western ships by the Houthi rebels of Yemen which has increased the necessity of maintaining a ready defence posture in and around the Red Sea-western Indian Ocean region for safeguarding Indian assets and manpower.

Similar new appointments and changes in the post of DA are also expected to take place in the Indian missions in the United Kingdom, Russia, Philippines, Armenia. While Philippines and Armenia will host Indian DA for the first time, in case of Russia, the number of attachés is expected to be reduced. Sources maintained that it is being done as part of "rationalisation" as several India-Russia defence projects have been completed, therefore, calling for adjustments in the Indian embassy in Moscow.

- **Objective of the move**
  - The decision to appoint defence attaches in African countries is in sync with New Delhi's priority to **expand its strategic engagement** with the African continent.
  - In the last few years, India has been positioning itself as a **leading voice**, flagging concerns, challenges and aspirations of the Global South or the developing nations, especially the **African continent.**
  - **India-Africa**: India's ties with the African continent have witnessed a major uptick amid China's persistent efforts to expand its influence in the African countries.
    - The induction of the **55-nation African Union** as a **permanent member of the G20** was seen as major milestones of India's presidency of G20.

- **India- Philippines**: India is also looking at further expanding defence ties with the Philippines against the backdrop of growing global concerns over China's increasing military assertiveness in the South China Sea.
  - The defence and strategic ties between India and the Philippines have been on an upswing in the last few years.
  - In January 2022, India sealed a USD 375 million deal with the Philippines for supplying three batteries of the missile.

- **Role of Defence attachés**
  - Defence attachés play a crucial role in several spheres.
  - **In friendly nations** such as Russia and the US, they are closely involved in efforts to acquire new weapons systems and military hardware and also help shape military-to-military cooperation in areas such as joint exercises and training.
  - **In adversarial nations** such as China and Pakistan, they are involved in gathering information and keeping a close eye on the latest developments in military and security issues.

4. Two Years to Save the World: Urgent Action Needed to Avert Climate Catastrophe
GS 3 (Environment)

- **Why in News:** The urgency of the climate crisis has been underscored by Simon Steill, the UN climate chief, who emphasized the need for immediate action to avert a climate catastrophe. The upcoming COP29 international climate summit in Baku, Azerbaijan, presents a crucial opportunity for nations to strengthen their commitments to mitigate climate change.

UN climate chief says next two years are 'essential in saving our planet'

Reuters
LONDON/BRUSSELS

Governments, business leaders and development banks have two years to take action to avert far worse climate change, the UN's climate chief said on Wednesday, in a speech that warned global warming is slipping down politicians' agendas.

Scientists say halving climate-damaging greenhouse gas emissions by 2030 is crucial to stop a rise in temperatures of more than 1.5°C that would unleash more extreme weather and heat.

Simon Steill also warns that global warming is slipping down politicians' agendas

Yet last year, the world's energy-related CO2 emissions increased to a record high. Current commitments to fight climate change would barely cut global emissions at all by 2030.

Simon Steill, Executive Secretary of the United Nations Framework Convention on Climate Change said the next two years are "essential in saving our planet". "We still have a chance to make greenhouse gas emissions tumble, with a new generation of national climate plans. But we need these stronger plans, now," he said.

'G-20 culprits'

Speaking at an event at the Chatham House think-tank in London, Mr. Steill said the Group of 20 leading economic powers – together, responsible for 80% of global emissions – urgently needed to step up.

Nearly 84,000 people attended last year's COP-28 summit in Dubai, drawing criticism from campaigners after more than 2,000 fossil fuel lobbyists registered to attend.

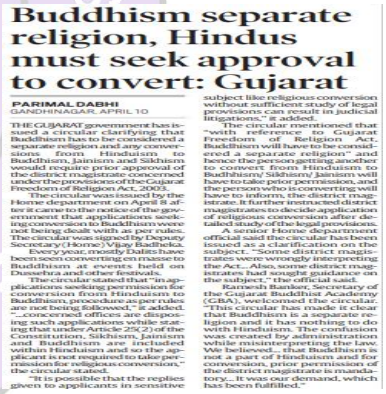
Mr. Steill said he would like to see future COP meetings reduced in size, while prioritising strong negotiation outcomes. He said he was in talks with Azerbaijan and Brazil – host of the next two UN climate summits – about this.

- **Urgent Need for Decisive Action**
  - **Stark Reality of Climate Crisis**: The current trajectory of climate change presents a dire situation, with global temperature records consistently being broken and carbon emissions continuing unabated. Scientists warn that the world is at risk of surpassing critical climate tipping points, leading to irreversible consequences.
  - **Inadequacy of Current Commitments**: Despite international efforts, the current commitments to reduce greenhouse gas emissions fall significantly short of what is required to limit global warming to safe levels. The Nationally Determined Contributions (NDCs) set forth by nations are insufficient to meet the targets outlined by the IPCC.
  - **Role of G20 Nations**: Steill emphasizes the pivotal role of G20 countries, particularly the US, EU, China, and India, in accelerating decarbonization efforts. These nations account for the majority of global emissions and must lead the way in adopting stringent emission reduction measures.
- **Escalating Climate Impacts**
  - **Rising Global Temperatures**: The past decade has seen a relentless increase in global temperatures, with records being shattered month after month. This trend not only threatens ecosystems but also exacerbates extreme weather events and disrupts livelihoods.
  - **India's Heatwave Crisis**: India, in particular, is experiencing the severe consequences of climate change, with heatwaves becoming more frequent and intense. The India Meteorological Department reports alarming trends, including a significant rise in the average number of heatwave days per year.
  - **Antarctic Tipping Point**: Scientists warn of potential tipping points, such as the destabilization of Antarctica's ice sheets, which could lead to catastrophic sea level rise. Recent research indicates rapid changes in Antarctica, signaling the urgency of addressing climate change before irreversible damage occurs.
- **Imperative for Immediate Action**
  - **Enhanced Climate Commitments**: The upcoming COP29 summit provides a crucial opportunity for nations to enhance their climate commitments and align with the IPCC's targets. This includes ambitious targets for emission reduction, investment in renewable energy, and adaptation measures.

- **Global Cooperation and Climate Finance**: Addressing climate change requires coordinated efforts and substantial financial resources. Wealthier nations must fulfill their commitments to provide climate finance to developing countries, enabling them to mitigate and adapt to climate impacts.
- **Public Awareness and Political Will**: It is essential to raise public awareness about the urgency of climate action and hold political leaders accountable for implementing effective policies. The absence of climate issues from electoral agendas highlights the need for greater advocacy and mobilization at all levels of society.

- **India's Renewable Energy**
  - India's goal to achieve **500 GW of non-fossil-based electricity generation capacity** by 2030 aligns with its efforts to be **net zero by 2070.**
  - In 2023-24, out of the total generation capacity of 9,943 MW added, **8,269 was from non-fossil fuel sources.**
  - According to the **Renewable Energy Statistics 2023,** India has the 4th largest installed capacity of renewables.
- **Constitutional Provisions recognising Environmental rights**
  - **Article 48A** of the Constitution provides that the State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.
  - **Clause (g) of Article 51A** stipulates that it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures.
  - **Article 21** recognises the right to life and personal liberty while **Article 14** indicates that all persons shall have equality before law and the equal protection of laws. These Articles are important sources of the right to a clean environment and the right against the adverse effects of climate change

5. Why Lower Castes Embrace Buddhism?
Recent events of importance


Buddhism separate religion, Hindus must seek approval to convert: Gujarat

PARIMAL DABHI
GANDHINAGAR, APRIL 10

THE GUJARAT government has issued a circular clarifying that Buddhism has to be considered a separate religion and any conversions from Hinduism to Buddhism, Jainism and Sikhism would require prior approval of the district magistrate concerned under the provisions of the Gujarat Freedom of Religion Act, 2003.

The circular was issued by the Home department on April 8 after it came to the notice of the government that applications seeking conversion to Buddhism were not being dealt with as per rules. The circular was signed by Deputy Secretary (Home) Vijay Badheka.

Every year, mostly Dalits have been seen converting en masse to Buddhism at events held on Dussehra and other festivals.

The circular stated that "in applications seeking permission for conversion from Hinduism to Buddhism, procedure as per rules are not being followed," it added. "...concerned offices are disposing such applications while stating that under Article 25(2) of the Constitution, Sikhism, Jainism and Buddhism are included within Hinduism and so the applicant is not required to take permission for religious conversion," the circular stated.

"It is possible that the replies given to applicants in insensitive subject like religious conversion without sufficient study of legal provisions can result in judicial litigations," it added.

The circular mentioned that "with reference to Gujarat Freedom of Religion Act, Buddhism will have to be considered a separate religion" and hence the person getting another to convert from Hinduism to Buddhism/ Sikhism/ Jainism will have to take prior permission, and the person who is converting will have to inform, the district magistrate. It further instructed district magistrates to decide application of religious conversion after detailed study of the legal provisions.

A senior Home department official said the circular has been issued as a clarification on the subject. "Some district magistrates were wrongly interpreting the Act... Also, some district magistrates had sought guidance on the subject," the official said.

Ramesh Bankar, Secretary of the Gujarat Buddhist Academy (GBA), welcomed the circular. "This circular has made it clear that Buddhism is a separate religion and it has nothing to do with Hinduism. The confusion was created by administration while misinterpreting the law. We believed... that Buddhism is not a part of Hinduism and for conversion, prior permission of the district magistrate is mandatory... It was our demand, which has been fulfilled."

- **Why in News:** The Gujarat government recently said that conversions from Hinduism to Buddhism will require prior approval from the district magistrate under provisions of the Gujarat Freedom of Religion Act, 2003 (GFRA).
- **How did Buddhism Evolve and grew popular?**
  - It emerged in the fifth century BCE, out of the teachings of Siddhartha Gautama, in present-day Nepal, who became a wandering ascetic after becoming disillusioned with the world around him. After his death, his followers created a congregation to pass down the novel doctrine preached by Gautam Buddha and thus, a new religion Buddhism evolved. It started off as a non-ritualistic religion, rejected the elaborate varna system, customs and animal sacrifices of Vedic religion, was more accessible to ordinary people and open to people from all sections of society, including the so-called "untouchables".
- **Why did Lower Castes Convert to Buddhism?**
  - Radical intellectuals from oppressed castes in the 19th and 20th centuries like Iyothee Thasar in the Tamil region, Mitavadi Krishnan and Sahodaran Ayyappan from Malayalam speaking regions and B.R. Ambedkar turned towards Buddhism **in their bid to challenge the Brahmanical hegemony and to negotiate the rights of lower castes.** Dr Ambedkar once told a gathering of Mahars that- "Religion is for man and not man for religion. To get human treatment, convert yourselves." Since then, the practice of lower castes converting to Buddhism has become prevalent across the country, not only seen as an avenue for emancipation, but also as the path taken by Dr Ambedkar.
- **Was there any Effect of Conversion on Society?**
  - Yes, in the early 20th century, the threat of conversion resulted in negotiations for rights such as temple entry, right of way, anti-untouchability legislation, and the promotion of inter-dining and inter-caste marriages.

6. QS World University Rankings
GS 2 (Education)

- **Why in News: Quacquarelli Symonds (QS) World University Rankings** by Subject has been released recently.
- **Key-highlights of the Rankings**
  - **Indian Institute of Management (IIM) Ahmedabad** has been ranked among the top 25 institutions globally for **business and management studies**.
  - **IIM-Bangalore** and **IIM-Calcutta** have been ranked among the top 50.

- **Indian Institute of Technology (IIT) Guwahati** has secured a global ranking of 51-70 in data science, and 51-100 in petroleum engineering.
- **Jawaharlal Nehru University (JNU) in Delhi** is the **highest-ranked university in India**. JNU is in the 20th position globally for **development studies.**
- **Expanding research:** India stands as one of the world's most rapidly expanding research centres. From 2017 to 2022, its research output surged by an impressive 54 per cent.
  - ❖ In terms of volume, India is now the **world's fourth-largest producer of research**, generating 1.3 million academic papers in this period, trailing only behind China's 4.5 million, the United States' 4.4 million, and slightly less than the United Kingdom's 1.4 million.
- **Challenge for India:** Providing high-quality tertiary education in the face of exploding demand. Though this challenge was recognised by **2020's NEP (National Education Policy),** which set the ambitious target of a 50 per cent gross enrolment ratio by 2035.

11 of 18 IISc subjects see drop in QS ranking

JNU's 'development studies' best in India; DU improves in 12 of 30 entries, IIT-B climbs in 17 of 28

R RADHIKA
NEW DELHI, APRIL 10

IN THE latest edition of the Quacquarelli Symonds (QS) World University Rankings by Subject released on Wednesday, several programmes offered by the Indian Institute of Sciences (IISc) saw a significant drop from last year.

The chemistry programme at India's most prominent Institute of Eminence (IoE) fell 31 places, from 77th to 108th. The institute's physics and astronomy programme was ranked 134 this year, down from 110 the previous year. In a similar vein, the institute's mathematics rankings dropped by 18 spots, ending up at 134 from 116th in 2023.

Out of the total 18 entries from the IISc, just three programmes gained in rankings while 11 programmes declined. The decline in ranks, however, does not indicate "deterioration in academic excellence", according to QS officials. A drop in its H-index that measures productivity and impact of research done by scholars and scientists has been the primary reason for the drop in rankings, a spokesperson said.

"The slight shifts observed in the IISc's standings in certain subjects do not necessarily signify a deterioration in academic excellence. Rather, they reflect the evolving landscape of global education, where other institutions may be advancing at a faster pace in specific metrics," QS said in a written response to questions sent by The Indian Express. "...these changes are mostly attributable to a declining performance in research indicators such as Citations per Paper, H-Index, and International Research Network," it said.

Attempts to reach IISc via email and phone did not elicit a response.

Meanwhile, overall rankings showed that a majority of the higher educational institutions have shown either improved ranks or remained stable from last year. A total of 69 Indian universities made it to the rankings with 424 entries, which marks a 19.4% rise from the previous year's 355 entries.

University of Delhi, with 30 subject entries this year, showed improvement in 12 subjects such as anthropology, developmental studies and environmental sciences.

IIT Bombay's chemistry programme broke into the global top-100 by obtaining 94th rank up from previous year's 116th spot. Overall with 28 entries, IIT Bombay showed improvement in 17 of its entries this year. Programmes like chemical engineering (64th rank, up by 13 ranks), mineral and mining engineering (25th rank, up by 12 ranks) gained in global 100 ranks.

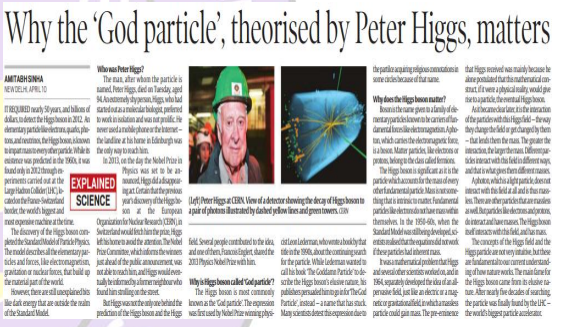
Some of the other most represented Indian universities in this edition include IIT Kharagpur with 27 entries, IIT Madras with 22 entries, and IIT Delhi with 19 entries. The Computer Science Engineering programme at IIT Delhi rose to the 63rd rank from the 67th position the previous year.

A newcomer in the field, Jawaharlal Nehru University's development studies is the highest-ranked in India. The university also bagged 11th rank in the 'academic reputation' category. However, the sociology programme at JNU which was ranked 68 last year has dropped to 91st spot this year. O P Jindal Global University has made significant strides by ascending to the 74th position globally in law from 84th position.

FULL REPORT ON www.indianexpress.com

- **QS World University Rankings**
  - QS World University Ranking is released by **Quacquarelli Symonds (QS)**, the London-based higher education analytics firm.
  - Quacquarelli Symonds Limited subject rankings, published annually, are designed to help prospective students find the leading schools in their field of interest.
    - Rankings are based on **research quality and accomplishments, academic reputation, and graduate employment.**

7. Higgs Boson
GS 3 (Science and Tech)



Why the 'God particle', theorised by Peter Higgs, matters

AMITABH SINHA
NEW DELHI, APRIL 10

IT REQUIRED nearly 50 years, and billions of dollars, to detect the Higgs boson in 2012. An elementary particle like electrons, quarks, photons, and neutrinos, the Higgs boson, is known to impart mass to every other particle. While its existence was predicted in the 1960s, it was found only in 2012 through experiments carried out at the Large Hadron Collider (LHC), located on the Franco-Switzerland border, the world's biggest and most expensive machine at the time.

The discovery of the Higgs boson completes the Standard Model of Particle Physics. The model describes all the elementary particles and forces, like electromagnetism, gravitation or nuclear forces, that build up the material part of the world.

However, there are still unexplained holes like dark energy that are outside the realm of the Standard Model.

EXPLAINED SCIENCE

Who was Peter Higgs?

The man, after whom the particle is named, Peter Higgs, died on Tuesday, aged 94. An extremely shy person, Higgs, who had started out as a molecular biologist, preferred to work in isolation and was not prolific. He never used a mobile phone or the Internet — the landline at his home in Edinburgh was the only way to reach him.

In 2013, on the day the Nobel Prize in Physics was set to be announced, Higgs did a disappearing act. Certain that the previous year's discovery of the Higgs boson at the European Organization for Nuclear Research (CERN), in Switzerland would fetch him the prize, Higgs left his home to avoid the attention. The Nobel Prize Committee, which informs the winners just ahead of the public announcement, was not able to reach him, and Higgs would eventually be informed by a former neighbour who found him strolling on the street.

But Higgs was not the only one behind the prediction of the Higgs boson and the Higgs field. Several people contributed to the idea, and one of them, Francois Englert, shared the 2013 Physics Nobel Prize with him.

(Left) Peter Higgs at CERN. View of a detector showing the decay of Higgs boson to a pair of photons illustrated by dashed yellow lines and green towers. CERN

Why is Higgs boson called 'God particle'?

The Higgs boson is most commonly known as the 'God particle'. The expression was first used by Nobel Prize winning physicist Leon Lederman, who wrote a book by that title in the 1990s, about the continuing search for the particle. While Lederman wanted to call his book 'The Goddamn Particle' to describe the Higgs boson's elusive nature, his publishers persuaded him to go for 'The God Particle', instead — a name that has stuck. Many scientists detest this expression due to the particle acquiring religious connotations in some circles because of that name.

Why does the Higgs boson matter?

Boson is the name given to a family of elementary particles known to be carriers of fundamental forces like electromagnetism. A photon, which carries the electromagnetic force, is a boson. Matter particles, like electrons or protons, belong to the class called fermions.

The Higgs boson is significant as it is the particle which accounts for the mass of every other fundamental particle. Mass is not something that is intrinsic to matter. Fundamental particles like electrons do not have mass within themselves. In the 1950-60s, when the Standard Model was still being developed, scientists realised that the equations did not work if these particles had inherent mass.

It was a mathematical problem that Higgs and seven other scientists worked on, and in 1964, separately developed the idea of an all-pervasive field, just like an electric or a magnetic or gravitational field, in which massless particle could gain mass. The pre-eminence of the particle acquiring religious connotations in some circles because of that name.

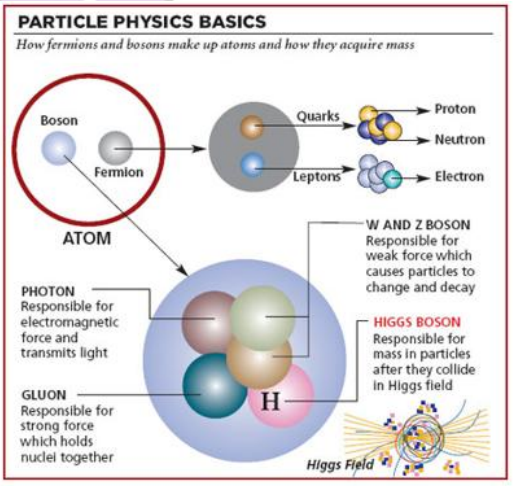
But Higgs received was mainly because he alone postulated that the mathematical construct, if it were a physical reality, would give rise to a particle, the eventual Higgs boson.

And because clear later, it is the interaction of the particles with this Higgs field — the way they change the field or get charged by them — that lends them the mass. The greater the interaction, the larger the mass. Different particles interact with this field in different ways, and that is what gives them different masses.

A photon, which is a light particle, does not interact with the field at all and is thus massless. There are other particles that are massless as well. But particles like electrons and protons, do interact and have masses. The Higgs boson itself interacts with the field, and has mass.

The concepts of the Higgs field and the Higgs particle are not very intuitive, but these are fundamental to our current understanding of how nature works. The mass Gene for the Higgs boson came from its elusive nature. After nearly five decades of searching, the particle was finally found by the LHC — the world's biggest particle accelerator.

- **Higgs' theory**
  - The Higgs boson is the **fundamental force-carrying particle of the Higgs field**, which is responsible for **granting other particles their mass**. This field was first proposed by **Peter Higgs in 1964?.**
  - The particle was finally discoveredon July 4, 2012, by researchers at the **Large Hadron Collider (LHC)** — the **most powerful particle accelerator** in the world.
    - Higgs' theory related to how **subatomic particles** that are the **building blocks of matter** get their mass.
    - The LHC confirmed the existence of the Higgs field and the mechanism that gives rise to mass.
    - This theoretical understanding is a central part of the so-called **Standard Model,** which describes the physics of how the world is constructed.
  - Higgs won the **2013 Nobel Prize in Physics** for his work, alongside Francois Englert of Belgium, who independently came up with the same theory.
  - Higgs' work helps solve one of the most fundamental riddles of the universe: how the **Big Bang** created something out of nothing 13.7 billion years ago.



- **What is Higgs Boson?**
  - The Higgs boson has a mass of**125 billion electron volts** (130 times more massive than a proton).
  - It is also **chargeless with zero spin**?-?a quantum mechanical equivalent to angular momentum. The Higgs Boson is the **only elementary particle with no spin.**
  - The Higgs boson is popularly known as the **"the God Particle".**

- A boson is a "force carrier" particle that comes into play when particles interact with each other, with a boson exchanged during this interaction.
  - For example, when two electrons interact they exchange a photon-the force-carrying particle of **electromagnetic fields.**
- Because quantum field theory describes the microscopic world and the **quantum fields** that fill the universewith wave mechanics, a boson can also be described as a wave in a field.
- So a photon is a particle and a wave that arises from an excited electromagnetic field and the Higgs boson is the particle or "quantized manifestation" that arises from the Higgs field when excited. That field generates mass via its interaction with other particles and the mechanism carried by the Higgs boson called the **Brout-Englert-Higgs mechanism**.

- **Large Hadron Collider (LHC)**
  - **Location:** European particle physics laboratory **CERN, Switzerland.**
  - The Large Hadron Collider (LHC) is the world's largest and most powerful particle accelerator.
  - It first started up on 10 September 2008, and remains the latest addition to **CERN's accelerator complex.**
  - The LHC consists of a **27-kilometre ring of superconducting magnets** with a number of accelerating structures to boost the energy of the particles along the way.

8. Unified standard of time for the moon
GS 3 (Science and Tech)

- **Why in News:** NASA has been directed to establish a **unified standard of time** for the moon **(Coordinated Lunar Time (LTC))** and other celestial bodies, the same way as Earth has.

A time standard for Moon's surface: what is it and why is it needed?

ALIND CHAUHAN
NEW DELHI, APRIL 10

THE WHITE House has directed NASA to create a time standard for the Moon, which international organisations and private companies can use to coordinate activities on the lunar surface. The space agency has been asked to work with other parts of the United States government to finalise by the end of 2026 the strategy to establish a Coordinated Lunar Time (LTC), according to Reuters, which first reported about the project.

First, how does the time standard for Earth work?

Most clocks and time zones are based on Coordinated Universal Time (UTC), which is set by the International Bureau of Weights and Measures in Paris. UTC is essentially an internationally agreed standard for world time.

UTC is tracked by a weighted average of more than 400 atomic clocks placed around the globe. Atomic clocks measure time in terms of the resonant frequencies — the natural frequency of an object where it tends to vibrate at a higher amplitude — of atoms such as cesium-133.

In atomic time, a second is defined as the period in which a cesium atom vibrates 9,192,631,770 times. As the vibration rates at which atoms absorb energy are highly stable and ultra-accurate, atomic clocks are excellent for gauging the passage of time.

To obtain their local time, countries subtract or add a certain number of hours to UTC, depending on how many time zones away from the 0-degree longitude meridian — also known as the Greenwich meridian — they are. If a country is to the west of the Greenwich meridian, it has to subtract from UTC; if a country is to the east of the meridian, it has to add.

So why do we need a time standard for the Moon?

Time flows differently on the Moon, and cannot be determined using UTC.

"A fundamental aspect of nature in the universe is that time is not absolute. That seems crazy to us on Earth as our experience of time is that it just constantly ticks by. But if you travelled to the Moon, your clock would be ticking slightly faster... The Earth," Catherine Heymans, Astronomer Royal for Scotland and a professor of astrophysics at the University of Edinburgh, told The Indian Express by email.

Thus, on the Moon, an Earth-based clock will appear to lose on average 58.7 microseconds per Earth day with "additional periodic variations", according to the memo issued by the White House Office of Science and Technology Policy. This may seem like a tiny discrepancy, but it is enough to create problems for spacecraft trying to dock on the Moon, transfer of data at a specific time, navigation, and communications.

Currently, each lunar mission uses its own timescale that is linked to UTC. "Take the example of two spacecraft, NASA's Lunar Reconnaissance Orbiter (LRO) and ISRO's Chandrayaan-2 Orbiter, which orbit the Moon in roughly similar polar orbits with some overlap. To ensure they do not collide – the probability of this is low, but it can happen – the two mission control teams talk and synchronise their operations standard as needed, based on differences in the way they calculate the orbits and time, etc.," Jatan Mehta, a space exploration writer and author of the Moon Monday newsletter, told The Indian Express.

While this can work for a handful of independent lunar missions, there may be problems with multiple spacecraft working together at the same time — a situation that will soon become reality. Several countries, including India, have lunar missions lined up, NASA's Artemis program aims to send humans back to the Moon after September 2026, and China and India intend to send their own astronauts to the lunar surface by 2030 and 2040 respectively. A long-term human outpost too, is planned on the Moon.

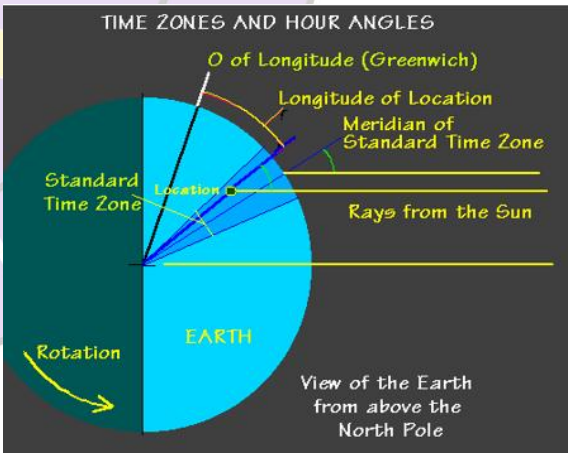
How will the lunar time standard be established?

The specifics are not clear yet. A White House official told Reuters that like on Earth, atomic clocks could be deployed on the Moon. A report by the journal Nature published last year said at least three atomic clocks ticking at the Moon's natural pace would have to be put on the lunar surface, the output from which would be combined by an algorithm to generate a more accurate virtual timepiece.

"These clocks have to be placed... at different locations since the Moon's rotation and even its local lumps of mass, called mascons, beneath the crust of the Moon affect the flow of time slightly," Mehta said. Mascons or mass concentrations are so dense that they alter the Moon's local gravity field. The output from these clocks can be synthesised to give the Moon its own time, which can be tied back to UTC for seamless operations from Earth.

Even on Earth, atomic clocks tick at different rates because the Earth's rotational speed varies from the equator to the poles, which also affects time. The Earth rotates faster at the equator than at the poles as it is wider at the equator.

- **What is a time standard?**
  - A time standard is a specification for measuring time intervals, defining the units of time (e.g., seconds, minutes, hours) and providing a reference for timekeeping.
  - Time standards are not similar to time zones, as a **time zone is a region of the Earth that has the same standard time.**
  - **Need of time standard**: The need for establishing a time standard for the Moon is paramount as several countries plan to send astronauts to the lunar surface in the latter half of the 2020s.
    - The Moon requires a time standard due to factors such as **differing gravitational forces and other celestial influences**, which alter the time compared to Earth.
    - Time on the Moon moves a tad quicker — **7 microseconds every day** — compared to the Earth.



- **Working of Earth's Time Standard**
  - Time Zones are a **geographical world globe division** of 15° each, starting at **Greenwich, in England,** created to help people know what time is it now in another part of the world.
  - The local time within a time zone is defined by its offset (difference) from **Coordinated Universal Time (UTC),** the **world's time standard.**
  - UTC is essentially an internationally agreed upon standard for world time.
  - It is tracked by a weighted average of more than **400 atomic clocks** placed in different parts of the globe.
  - Atomic clocks measure time in terms of the **resonant frequencies** — the natural frequency of an object where it tends to vibrate at a higher amplitude — of atoms such as **cesium-133**.

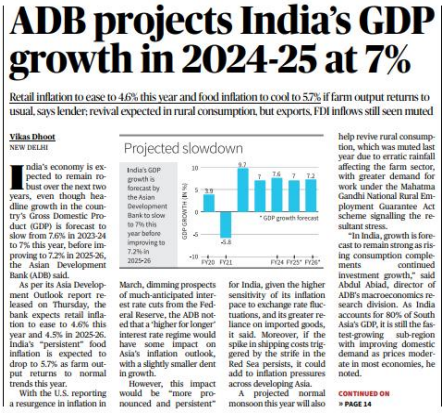
- **In atomic time, a second is defined** as the period in which a caesium atom vibrates 9,192,631,770 times. As the vibration rates at which atoms absorb energy are highly stable and ultra-accurate.

- UTC time changes 1 hour forward and backward corresponding to a 1-hour difference in mean solar time for every 15 degrees east or west of the prime meridian (0° longitude) in **Greenwich, London, United Kingdom**.
  - The offset is expressed as either **UTC- or UTC+** and the number of hours and minutes.

12th April, 2024

1. ADB projects India's GDP growth in 2024-25 at 7%

GS 3 (Economy)



ADB projects India's GDP growth in 2024-25 at 7%

Retail inflation to ease to 4.6% this year and food inflation to cool to 5.7% if farm output returns to usual, says lender; revival expected in rural consumption, but exports, FDI inflows still seen muted

Vikas Dhoot
NEW DELHI

Projected slowdown

India's GDP growth is forecast by the Asian Development Bank to slow to 7% this year before improving to 7.2% in 2025-26

GDP GROWTH (IN %)

10 5 0 -5 -10

9.2 7 7.6 7 7.2 6.3 -5.8

* GDP growth forecast

FY20 FY21 FY24 FY25* FY26*

India's economy is expected to remain robust over the next two years, even though headline growth in the country's Gross Domestic Product (GDP) is forecast to slow from 7.6% in 2023-24 to 7% this year, before improving to 7.2% in 2025-26, the Asian Development Bank (ADB) said.

As per its Asia Development Outlook report released on Thursday, the bank expects retail inflation to ease to 4.6% this year and 4.5% in 2025-26. India's "persistent" food inflation is expected to drop to 5.7% as farm output returns to normal trends this year.

With the U.S. reporting a resurgence in inflation in March, dimming prospects of much-anticipated interest rate cuts from the Federal Reserve, the ADB noted that a 'higher for longer' interest rate regime would have some impact on Asia's inflation outlook, with a slightly smaller dent in growth.

However, this impact would be "more pronounced and persistent" for India, given the higher sensitivity of its inflation pace to exchange rate fluctuations, and its greater reliance on imported goods, it said. Moreover, if the spike in shipping costs triggered by the strife in the Red Sea persists, it could add to inflation pressures across developing Asia.

A projected normal monsoon this year will also help revive rural consumption, which was muted last year due to erratic rainfall affecting the farm sector, with greater demand for work under the Mahatma Gandhi National Rural Employment Guarantee Act scheme signalling the resultant stress.

"In India, growth is forecast to remain strong as rising consumption complements continued investment growth," said Abdul Abiad, director of ADB's macroeconomics research division. As India accounts for 80% of South Asia's GDP, it is still the fastest-growing sub-region with improving domestic demand as prices moderate in most economies, he noted.

CONTINUED ON » PAGE 14

- **Why in News:** India's economic trajectory for the upcoming years is under the spotlight with the Asian Development Bank (ADB) projecting a growth rate of 7% for the fiscal year 2024-25. Despite a slight slowdown from the previous year's 7.6%, the ADB maintains a positive outlook on India's economic performance.
- **Key Highlights of the Report**
  - **Growth Forecast:** ADB predicts India's GDP growth to reach 7.2% in 2025-26, indicating a steady upward trend over the medium term.
  - **Inflation Outlook:** Retail inflation is expected to ease to 4.6% in the current fiscal year, further dropping to 4.5% in 2025-26.
  - **Persistent Food Inflation:** The report notes that India's persistent food inflation is likely to decrease to 5.7% as farm output returns to normal levels, aligning with historical trends.
  - **Impact of Global Factors:** The resurgence of inflation in the United States and the possibility of prolonged higher interest rates could impact Asia's inflation outlook, particularly affecting India due to its sensitivity to exchange rate fluctuations and reliance on imported goods.
  - **Monsoon Factor:** A projected normal monsoon is expected to boost rural consumption, which suffered from erratic rainfall last year. Increased demand for work under schemes like the Mahatma Gandhi National Rural Employment Guarantee Act is anticipated, signaling a potential revival in rural economies.
- **Economic Growth Trends**
  - **Investment in Infrastructure:** The government's emphasis on infrastructure development, including projects in transportation, energy, and digital connectivity, is expected to stimulate investment and drive economic growth.
  - **Export Promotion Strategies:** Initiatives aimed at boosting exports, such as the Production-Linked Incentive (PLI) scheme and trade facilitation measures, are likely to enhance India's competitiveness in global markets and contribute to economic expansion.
  - **Regional Disparities:** Addressing regional disparities in economic development through targeted policies and investments will be crucial to ensure inclusive growth and equitable distribution of benefits across different states and regions.
- **Inflation Dynamics**
  - **Supply Chain Resilience:** Enhancing supply chain resilience through reforms in logistics, warehousing, and distribution networks can help mitigate inflationary pressures arising from disruptions in commodity markets and transportation systems.
  - **Monetary Policy Tools:** The central bank's monetary policy toolkit, including interest rate adjustments and liquidity management measures, will play a pivotal role in stabilizing inflation expectations and supporting economic recovery amidst evolving global economic conditions.
  - **Commodity Price Volatility:** Monitoring and managing volatility in global commodity prices, particularly for essential commodities like crude oil and food grains, are essential to prevent cost-push inflation and ensure macroeconomic stability.
- **Impact of Global Factors**
  - **Trade Policy Reforms:** Pursuing trade policy reforms, including bilateral and multilateral trade agreements, can facilitate market access for Indian exporters and attract foreign investment, thereby stimulating economic growth and job creation.
  - **Global Financial Market Developments:** Monitoring developments in global financial markets, including capital flows, exchange rate movements, and investor sentiment, will be crucial to mitigate risks associated with external volatility and maintain financial stability.
  - **Climate Change and Sustainability:** Integrating climate change mitigation and adaptation strategies into economic planning and development policies can enhance resilience to environmental risks and foster sustainable growth in the long run.
- **Asian Development Bank (ADB):**

- ADB (founded in 1966) is an international development finance institution.
- Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people.
- Headquartered in Manila, ADB is owned and financed by its 68 members, of which **49 are from the region and 19 are from other parts of the globe.**
- The two largest shareholders of the Asian Development Bank are the **United States and Japan.**
- ADB is an official United Nations Observer.
- Voting rights in ADB are distributed in proportion with members' capital subscriptions

2. Apple's Mercenary spyware alert
GS 3 (Science and Tech)

- **Why in News:**
  - Apple recently sent out warnings to iPhone users in India and 91 other countries. The company informed users saying that their iPhones might be under attack by a type of spyware called **mercenary spyware**, including one called Pegasus.
  - In October 2023, they sent similar warnings to politicians from different parties in India, suggesting a possible state-sponsored spyware attack on their iPhones. However, Apple later said they could not pinpoint any specific attacker.

Apple changes hacking alert wording after India 'pressure'

The Hindu Bureau
NEW DELHI

Apple, Inc. is now calling "state-backed attackers" "mercenary" hackers in email alerts to affected customers, and has changed this language on support documentation on its website as well.

This change from the iPhone maker comes months after a report of "pressure" from the Indian government to give authorities deniability for hacking attempts on political leaders, journalists and activists, who have repeatedly been alerted to unauthorised intrusions into their phones from spyware such as Pegasus, which the Intelligence Bureau acquired in 2017.

The change, which now takes direct heat off of any individual nation-states following hacking attempts, coincided with media reports on Thursday morning claiming that a fresh batch of such notifications was sent to users in India and 91 other countries. However, hours after these reports came up, no user in any of these countries has publicly reported receiving such an alert.

Last November, Apple and the Centre misleadingly claimed that users in 150 countries received such hacking alerts, when only users in India reported receiving them that week.

An Apple spokesperson declined to comment on record on the change in language. Three people who have received such alerts previously in India told *The Hindu* that they didn't receive any in the last day. Rights group Amnesty International has opened a digital security helpline for individuals who received the alert.

Last December, *The Washington Post* reported that "senior Modi administration officials called Apple's India representatives to demand that the company help soften the political impact of the warnings", referring to November's alerts. At least two individuals who received the alerts that month — the Congress party's Praveen Chakravarty and news portal *The Wire*'s founder editor Siddharth Varadarajan — found in separate forensic examinations that their phones had traces of the Pegasus spyware.

Media reports claim that a fresh batch of such alerts has been sent to users. REUTERS

- **Spyware and malware**
  - Spyware and malware are types of harmful software designed to infiltrate and damage computers or devices.
  - **Spyware**
    - Spyware specifically focuses on spying on a user's activities, such as browsing habits, keystrokes, or personal information, without their consent.
    - It often aims to gather data for advertising purposes or identity theft.
  - **Malware**
    - Malware, short for malicious software, encompasses a broader range of harmful programs that can include viruses, worms, ransomware, and more.
    - Malware typically aims to disrupt, damage, or gain unauthorized access to a computer system or network.
- **Mercenary spyware attacks**
  - **About**
    - Mercenary spyware attacks are highly complex, targeting specific individuals with exceptional resources, surpassing regular cybercriminal activity and consumer malware.
    - They are difficult to detect & prevent due to their substantial investment & **short lifespan**. They have been targeting some users, but most people are probably safe.
    - These attacks represent some of the most **sophisticated digital threats** globally, prompting Apple to abstain from assigning them to specific attackers or regions.
  - **Aim**
    - Mercenary spyware is designed to remotely infiltrate and compromise smartphones and other devices without the knowledge or consent of the users.
    - These surveillance tools could be used to monitor movements and communications, steal private data, etc.
    - In some cases, governments, intelligence agencies, and law enforcement bodies have reportedly bought mercenary spyware wherein political opponents and activists are often targeted.
  - **Examples**
    - Companies producing mercenary spyware include the NSO Group, FinFisher, and Hacking Team.
      - NSO Group's flagship spyware Pegasus helps infiltrate devices remotely and access calls, emails, messages, and other files.
      - Finfisher's products like FinSpy can capture keystrokes and access data besides activating microphones and cameras without permission.
      - The Hacking Team's Galileo aka Remote Control System (RCS) also can capture keystrokes and record video calls besides accessing the camera and microphone.
- **Pegasus Spyware**
  - Pegasus is a malware/spyware **developed by Israel's NSO Group**.
  - The spyware suite is designed to access any smartphone through **zero-click vulnerabilities**
  - Once a phone is infiltrated, the spyware can access entire data on that particular phone.
  - It also has real-time access to emails, texts, phone calls, as well as the camera and sound recording capabilities of the smartphone.
- **Zero-click exploit**
  - **About**
    - It refers to malicious installed on a device without the device owner's consent.
    - More importantly, it does not require the device owner to perform any actions to initiate or complete the installation.
  - **Specific exploit used in the present case involving Indian journalists**

- The specific exploit allegedly in use on the two devices is called **BLASTPAST** (previously identified as BLASTPASS). It plays out in two phases.
- In the first, the attack attempts to establish a link with the Apple HomeKit - which gives users a way to control multiple smart devices - on the target's device.
  - The purpose of the first phase could be to determine how the device can be exploited or to keep it in sight for further exploitation in the future.
- In the second, some malicious content is sent via the iMessage app to the target.
  - This phase is the one that delivers the full spyware payload.

3. <u>In poll season, the perils of scorching bilateral ties</u>
<u>GS 2 (Elections)</u>

In poll season, the perils of scorching bilateral ties

- **Why in News:** In the run-up to elections, the intersection of domestic politics with foreign policy decisions can have significant repercussions on bilateral relationships. Recent statements by Indian leaders regarding past agreements and policies have highlighted the potential risks of politicizing foreign relations for electoral gains.
- **Perils of Politicizing Bilateral Ties:**
  - **Criticism of Past Agreements:** Statements by Prime Minister Narendra Modi and External Affairs Minister S. Jaishankar questioning the 1974 India-Sri Lanka agreement have stirred controversy. The critique of past decisions, aimed at influencing voter sentiment, risks straining diplomatic relations with Sri Lanka.
  - **Repercussions on International Agreements:** The implications of reopening longstanding agreements extend beyond bilateral relations. Questions arise about India's credibility as an interlocutor and the potential impact on existing and future international agreements, such as the maritime boundary settlement with Bangladesh.
  - **Domestic Policies and Transnational Relations:** The implementation of domestic laws, such as the Citizenship (Amendment) Act (CAA), can affect relations with neighbouring countries. The exclusionary nature of the CAA raises concerns among neighbouring nations and has the potential to strain diplomatic ties, particularly with Bangladesh.
- **Maintaining Discretion in Diplomacy:**
  - **Discreet Resolution of Issues:** Complex foreign policy issues require nuanced and discreet negotiations, away from the public glare of election campaigns. Public statements during elections risk exacerbating tensions and undermining diplomatic efforts.
  - **Sensitivity to Neighbouring Concerns:** India must recognize the sensitivities of immediate neighbours, especially regarding territorial and sovereignty issues. Cartographic disputes and historical grievances can escalate during election seasons, necessitating careful diplomatic navigation.
  - **Long-term Consequences:** While election cycles are temporary, the fallout from politicizing foreign policy can have enduring consequences. Sacrificing bilateral ties for short-term electoral gains may undermine India's strategic interests and regional stability in the long run.

4. <u>A Battle to Save Ladakh and All of Humanity</u>
<u>GS 3 (Environment)</u>

A battle to save Ladakh, and all of humanity

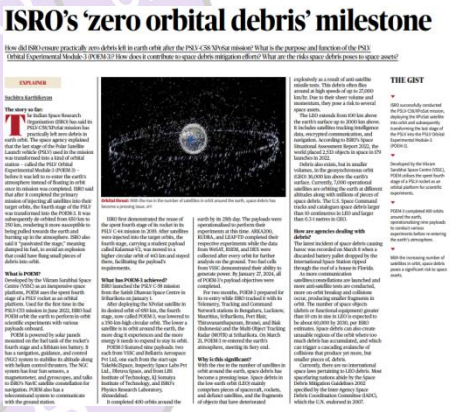
- **Why in News:** Climate activist Sonam Wangchuk's call for a 21-day climate fast in Ladakh highlights the urgent need to address the environmental challenges facing the region and their global implications.
- **Environmental Threats in Ladakh:**
  - **Impact of Climate Change:** Ladakh, situated between Pakistan and China, faces multiple environmental threats, including floods, droughts, landslides, and greenhouse gas emissions. The melting of Himalayan glaciers, crucial for regional hydrology, poses risks to both local communities and downstream populations.
  - **Infrastructure Boom:** Despite initiatives like the National Mission for Sustaining the

Himalayan Ecosystem (NMSHE), rapid infrastructure development in Ladakh, including roads, tunnels, and solar projects, has raised concerns about its environmental sustainability. The emphasis on industrialization and tourism promotion neglects environmental safeguards.

- **History of Disasters:** The Himalayan region has witnessed several disasters in recent years, such as the 2013 Kedarnath flash floods and the 2023 Joshimath incident. Despite warnings from experts, infrastructure projects continue without adequate risk assessment, endangering lives and exacerbating environmental degradation.

- **Addressing Environmental Challenges:**
  - **Policy Reforms:** There is a need for stringent environmental regulations and comprehensive impact assessments for infrastructure projects in mountainous regions. Policies should prioritize sustainability over short-term development goals.
  - **Public Awareness:** Increasing awareness among policymakers and the public about the ecological fragility of mountain ecosystems is crucial. Engaging local communities and environmental activists in decision-making processes can foster sustainable development practices.
  - **International Cooperation:** Given the transboundary nature of climate change, international cooperation is essential for mitigating its impacts. Collaborative efforts among Himalayan countries can facilitate knowledge sharing, resource management, and climate resilience building.

5. ISRO's 'zero orbital debris' milestone
GS 3 (Science and Tech)


ISRO's 'zero orbital debris' milestone

How did ISRO ensure practically zero debris left in earth orbit after the PSLV-C58/XPoSat mission? What is the purpose and function of the PSLV Orbital Experimental Module-3 (POEM-3)? How does it contribute to space debris mitigation efforts? What are the risks space debris poses to space assets?

EXPLAINER

Sachitra Karthikeyan

The story so far:

THE GIST

- **Why in News:** The Indian Space Research Organisation (ISRO) has achieved a significant milestone by practically eliminating orbital debris in Earth's orbit through its PSLV-C58/XPoSat mission. This accomplishment marks a crucial step towards mitigating the growing threat of space debris.
- **Transformation of Fourth Stage:**
  - **POEM-3 Development:** The last stage of the Polar Satellite Launch Vehicle (PSLV) used in the mission was transformed into the PSLV Orbital Experimental Module-3 (POEM-3), serving as an orbital station.
  - **De-Orbiting Strategy:** Instead of leaving the fourth stage to float in orbit after completing its mission, ISRO lowered POEM-3 from 650 km to 350 km, rendering it more susceptible to re-entry into the Earth's atmosphere.
  - **Passivation Measures:** ISRO ensured the safe disposal of the stage by passivating it, meaning that its fuel was dumped to prevent the risk of explosion and the generation of small debris fragments.
- **Significance of POEM:**
  - **Cost-effective Space Platform:** Developed by the Vikram Sarabhai Space Centre (VSSC), POEM utilizes the spent fourth stage of a PSLV rocket as an orbital platform, facilitating scientific experiments and payload operations.
  - **Innovative Technology:** Equipped with solar panels, a lithium-ion battery, and a navigation, guidance, and control (NGC) system, POEM represents a sustainable and resource-efficient approach to space exploration.
  - **Demonstration of Reusability:** ISRO's successful demonstration of reusing the fourth stage of its rocket highlights its commitment to innovation and cost-effectiveness in space missions.
- **Addressing Space Debris Concerns:**
  - **Rising Threat of Space Debris:** With the proliferation of satellites and space missions, space debris has emerged as a critical concern, posing risks to operational spacecraft and future missions.
  - **Environmental Impact:** Space debris, including defunct satellites and fragments of spacecraft, travels at high speeds and can cause collisions, potentially leading to cascading effects and further debris generation.

- **International Mitigation Efforts:** While there are currently no international space laws specifically addressing low Earth orbit (LEO) debris, spacefaring nations adhere to guidelines set forth by organizations like the Inter-Agency Space Debris Coordination Committee (IADC) to mitigate debris-related risks.

- **Technological Advancements**
  - **Space Debris Mitigation Technologies:** ISRO's innovative approach to space debris mitigation underscores the importance of technological advancements in addressing space sustainability challenges.
  - **Reusable Space Platforms:** POEM exemplifies the potential of reusing space hardware components to minimize waste and optimize resource utilization in space missions.
  - **Future Prospects:** Continued investments in research and development of space technologies will be essential to enhance space situational awareness and develop effective debris mitigation strategies.
- **Environmental Conservation**
  - **Preserving Space Environment:** Eliminating orbital debris contributes to preserving the space environment and ensuring the long-term sustainability of space activities.
  - **Mitigating Risks:** By actively addressing the risks associated with space debris, space agencies play a crucial role in safeguarding critical space assets and reducing the likelihood of collisions.
  - **Global Cooperation:** Collaboration among nations and international organizations is essential to develop comprehensive space debris mitigation frameworks and promote responsible space conduct.
- **Policy and Governance**
  - **Regulatory Frameworks:** The absence of comprehensive international space laws necessitates the development of robust regulatory frameworks to govern space activities and address emerging challenges like space debris.
  - **Standardization and Compliance:** Standardization of space debris mitigation practices and mechanisms for compliance monitoring are crucial for ensuring the effectiveness of mitigation efforts and promoting responsible space behavior.
  - **Diplomatic Initiatives:** Diplomatic dialogues and multilateral agreements play a vital role in fostering cooperation and consensus-building on space governance issues, including debris mitigation and space sustainability.

6. <u>Is transparency lacking in candidate disclosure?</u>
<u>GS 2 (Elections)</u>

Is transparency lacking in candidate disclosure?

How has the Supreme Court addressed concerns about candidates with serious criminal charges contesting elections? What reforms have been proposed by the Law Commission and EC to address these issues?

Rangarajan. R

The story so far:

The Supreme Court recently held that candidates need not disclose every piece of information and possession in their election affidavit unless it is substantial in nature. In another development, the Election Commission of India (EC) has asked the Central Board of Direct Taxes to verify the declaration with respect to yearly income in the affidavit filed by Rajeev Chandrashekar, the BJP candidate from Thiruvananthapuram.

What does the law specify?

Section 33 of the Representation of the People Act, 1951 (RP Act) read with rule 4A of election rules, requires every contesting candidate to file their nomination paper for elections along with an affidavit in a prescribed format. In *Association of Democratic Reforms (ADR) Vs Union of India* (2002), the Supreme Court held that voters have the right to know about the criminal antecedents, income and asset details of the candidate and his/her dependants and educational qualification of contesting candidates. This resulted in Section 33A being added to the RP Act that requires details of criminal antecedents to be part of the election affidavit.

Section 125A of the RP Act further provides that failure to furnish required information, giving false information or concealing any information in the nomination paper or affidavit shall be punishable with imprisonment up to six months or fine or both.

What are the issues?

In a recent case, an independent candidate from Arunachal Pradesh failed to declare three vehicles as assets in his election affidavit while contesting the Assembly election in 2019. His election was set aside by the Gauhati High Court. However, the Supreme Court reversed the decision and held that non-disclosure of information that is not material or substantial cannot be treated as an attempt to unduly influence the voters. In the case of Mr. Chandrashekhar, the complaint is about alleged concealment of his income and substantial assets in his election affidavit that can have a potential impact on the decision of the voters.

An even more significant issue relates to candidates with serious criminal charges contesting elections. Some candidates circumvented the requirement of rule 4A by leaving certain columns blank and filing incomplete affidavits. It once again required an order of the court in Resurgence India Vs EC (2003), to ensure that all columns are filled appropriately. According to a report by ADR, 19% of candidates in the 2019 Lok Sabha election faced charges of rape, murder or kidnapping.

The Law Commission in its 244th report on 'Electoral Disqualifications' (2014) and EC in its memorandum on 'Electoral reforms' submitted in 2016 had provided certain recommendations. First, a conviction for filing a false affidavit should attract a punishment of a minimum of two years imprisonment and be a ground for disqualification. Second, the trials in such cases must be conducted on a day-to-day basis. Finally, persons charged by a competent court with offences punishable by imprisonment of at least five years should be debarred from contesting in the elections provided the case is filed at least 6 months before the election in question.

The Supreme Court in *Public Interest Foundation Vs Union of India* (2018) directed candidates as well as political parties to issue a declaration about criminal antecedents, at least three times before the election, in a newspaper in the locality and electronic media.

What can be the way forward?

Debarring chargesheeted candidates from contesting elections is likely to be misused by various ruling parties. However, the other recommendations with respect to increasing punishment for filing false affidavits and making it a ground for disqualification need to be implemented. The Supreme Court's order to provide wide publicity of criminal records should also be strictly implemented. This would enable a discerning voter to exercise a well-informed choice.

Rangarajan R is a former IAS officer and author of 'Polity Simplified'. Views expressed are personal

THE GIST

- The Supreme Court ruled that candidates are not obligated to disclose every detail in their election affidavits unless the information is substantial in nature.
- Instances of candidates failing to disclose assets and income have raised questions about the transparency and completeness of affidavits.
- While debarring candidates based on chargesheets could be misused, implementing stricter punishment for false affidavits and increasing transparency in disclosing criminal records are crucial steps. Ensuring voter awareness and informed choices through better disclosure mechanisms is essential for electoral integrity.

- **Why in News:** The Supreme Court (SC) recently held that candidates **need not** disclose every piece of information and possession in their election affidavit unless it is substantial in nature.
- **What does the Law Say?**
  - **Section 33** of the Representation of the People Act, 1951 (RP Act) read with **rule 4A** of election rules, mandates every contesting candidate to file their nomination paper for elections along with an affidavit in a prescribed format containing details regarding their bank accounts, income, movable/immovable assets**, criminal antecedents**, loans etc.
  - Section 125A of the RP Act prescribes upto six months of imprisonment or fine or both for failure to furnish required information; giving false information or concealing any information in the nomination paper or affidavit.
- **What are the issues?**
  - Alleged concealment of income and substantial assets in election affidavit that can have a potential impact on the decision of the voters.
  - Candidates with **serious criminal charges** contesting elections circumvent the requirement of **rule 4A** by filing incomplete affidavits.
  - According to a report by Association of Democratic Reforms (ADR), 19% of candidates in the 2019 Lok Sabha election faced charges of rape, murder or kidnapping.
- **Recommendations**
  - Law Commission in its 244th report of 2014 on 'Electoral Disqualifications' and EC in its 2016 'Electoral reforms' recommended-
    - **i.** Conviction for false affidavit should attract minimum two years of imprisonment and disqualification.
    - **ii.** Trials for false affidavits must be conducted on a day-to-day basis.
    - **iii.** Persons charged for offences punishable by imprisonment of at least five years should be debarred from contesting in the elections if the case is filed at least 6 months before the election in question

- The SC in Public Interest Foundation Vs Union of India (2018) directed candidates and political parties to issue a declaration about criminal antecedents, at least three times before the election, in a newspaper in the locality and electronic media.

- **Way Forward**
  - Increasing punishment for filing false affidavits and making it a ground for disqualification need to be implemented. The Supreme Court's order to provide wide publicity of criminal records should also be strictly implemented to enable a discerning voter to exercise a well-informed choice.

7. India needs a simpler tariff policy to boost manufacturing: ADB
GS 3 (Economy)

India needs a simpler tariff policy to boost manufacturing: ADB

Yikas Dhoot
NEW DELHI

India needs to take greater efforts to simplify its tariff policy, enhance its trade competitiveness and redress its 'limited' integration with global value chains, the Asian Development Bank (ADB) said on Thursday, stressing that this was particularly imperative for its manufacturing sector, which was critical to sustain the growth trajectory over the medium term.

India's growth strategy was predicated on substantial export growth that could be achieved through integration into global value chains, and the $2 trillion in exports by 2030 goal set by the government would require considerable growth, the ADB said in its Asia Development Outlook report.

'Global value chains'

"Increasing goods exports requires India to integrate into global value chains (GVCs), which must entail India specialising in stages of production where it has a comparative advantage, as opposed to necessarily looking to be present in the entire value chain," the lender noted, recommending further policy action was needed to improve India's trade competitiveness and integration into GVCs.

'Improve logistics infra'

"A simplified tariff policy is needed along with continued efforts to improve trade and logistics infrastructure," it added.

While India was already a big player in services and knowledge-intensive sectors, which were a growth engine and would continue to remain so, what happened in the manufacturing sector was critical for sustainable growth in the medium term, remarked Rana Hasan, regional head economist for South Asia at the ADB.

"Trade facilitation key"

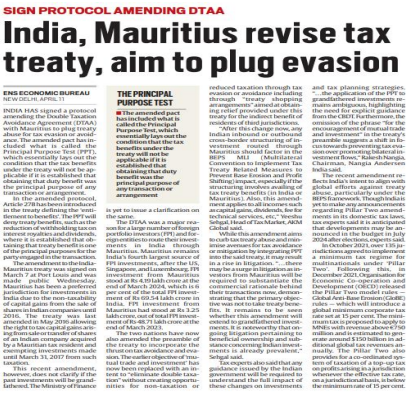
Trade policy and trade facilitation efforts were central on this front, Mr. Hasan emphasised.

"As the manufacturing sector grows, and this is really the key, I think it'll give rise to stronger direct linkages between growth drivers in India and the South Asia region that tends to be amongst the sub-regions of the world that is less integrated with the rest of the world and also tends to trade much less with one another, as compared to other sub regions like ASEAN," the economist pointed out.

Historically, India had been little engaged in highly integrated GVCs, the multilateral lender noted.

- **Why in News:** India's manufacturing sector plays a crucial role in sustaining economic growth and achieving export targets. The Asian Development Bank (ADB) highlights the need for India to streamline its tariff policy and enhance trade competitiveness to integrate more effectively into global value chains (GVCs).
- **Tariff Policy Simplification**
  - **Rationale:** India's growth strategy relies on increasing exports through integration into GVCs, necessitating a simplified tariff policy to reduce trade barriers and enhance transparency.
  - **Policy Reforms:** Measures such as rationalizing tariff rates, reducing procedural complexities, and harmonizing trade regulations are essential for creating a conducive business environment for manufacturers.
  - **Impact Assessment:** A simplified tariff policy promotes cost efficiency, enhances market access, and bolsters India's competitiveness in global trade, leading to increased exports and economic prosperity.
- **Enhancing Trade Competitiveness**
  - **Infrastructure Development:** Investing in trade-related infrastructure, including ports, transportation networks, and customs facilities, is critical for reducing transaction costs and facilitating seamless trade flows.
  - **Trade Facilitation Measures:** Implementing trade facilitation measures, such as single-window clearances, customs modernization, and digital trade platforms, enhances the efficiency and reliability of trade processes.
  - **Capacity Building:** Strengthening institutional capacity for trade promotion and export development empowers businesses to navigate international markets effectively and capitalize on emerging opportunities.
- **Integration into Global Value Chains**
  - **Specialization Strategies:** India must identify and leverage its comparative advantages in specific stages of production within GVCs to maximize its participation and value addition in global trade networks.
  - **Sectoral Focus:** Prioritizing sectors with high export potential, such as automotive, electronics, and pharmaceuticals, facilitates targeted interventions to enhance competitiveness and foster sectoral growth.
  - **International Cooperation:** Engaging in regional and bilateral trade agreements, participating in trade promotion initiatives, and strengthening economic ties with key trading partners enhance India's access to GVCs and promote sustainable trade expansion.

8. India-Mauritius Protocol on the Double Taxation Avoidance Agreement (DTAA)
GS 2 (International Relations)


SIGN PROTOCOL AMENDING DTAA

India, Mauritius revise tax treaty, aim to plug evasion

ENS ECONOMIC BUREAU
NEW DELHI, APRIL 11

INDIA HAS signed a protocol amending the Double Taxation Avoidance Agreement (DTAA) with Mauritius to plug treaty abuse for tax evasion or avoidance. The amended part is in line with the BEPS MLI's Principal Purpose Test (PPT), which essentially lays out the condition that the tax benefits under the treaty will not be applicable if it is established that obtaining that duty benefit was the principal purpose of any transaction or arrangement.

In the amended protocol, Article 27B has been introduced in the treaty defining the 'limitation of benefits' (LOB) rule to deny treaty benefits, such as the reduction of withholding tax on interest royalties and dividends, where it is established that obtaining that duty benefit was one of the principal purposes for the party engaged in the transaction.

The amendment to the India-Mauritius treaty was signed on March 7 at Port Louis and was made public Wednesday. Mauritius is the largest source jurisdiction for investments in India due to the non-taxability of capital gains from the sale of shares in Indian companies until 2016-17. The tax break was extended in May 2016 also to bring the right to tax capital gains arising from sale or transfer of shares of an Indian company acquired by a Mauritian tax resident and exempting investments made up to March 31, 2017 from such taxation.

This recent amendment, however, does not clarify if the past investments will be grandfathered. The Ministry of Finance is yet to issue a clarification on this issue.

The DTAA was a major reason for a large number of foreign portfolio investors (FPI) and foreign entities to route their investments into India through Mauritius. Mauritius remains India's fourth largest source of FPI investments, after the US, Singapore, and Luxembourg. FPI investment from Mauritius stood at Rs 4.19 lakh crore at the end of March 2023, or 17.8 per cent of the total FPI investment of Rs 69.54 lakh crore in India. FPI investment from Mauritius had stood at Rs 3.25 lakh crore of the total FPI investment of Rs 46.74 lakh crore at the end of March 2018.

The two nations have now also amended the preamble of the treaty to incorporate the thrust on tax avoidance and evasion, and to promote bilateral trade and investment' has now been replaced with an intent to "eliminate double taxation" without creating opportunities for non-taxation or reduced taxation through tax evasion or avoidance including through "treaty shopping arrangements". Treaty shopping relief provided under this treaty for the indirect benefit of residents of third jurisdictions.

"After this change now, any Indian inbound or outbound cross-border structuring of investments routed through Mauritius should factor in the BEPS MLI (Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting) impact, especially if the structuring involves availing of tax treaty benefits (in India or Mauritius). Also, this amendment applies to all incomes such as capital gains, dividends, fee for technical services, etc," said Shubham Sehgal, Head of Tax Market, A&M Global said.

While this amendment aims to curb tax treaty abuse and minimise opportunities for evasion or mitigation by integrating PPT into the said treaty, it may result in a rise in litigation. "...there may be a surge in litigation as investors from Mauritius will be required to substantiate the commercial rationale behind their transactions now, demonstrating that the primary objective was not to take treaty benefits. It remains to be seen whether this amendment will be extended to the unaffected investments. It is noteworthy that ongoing litigation pertaining to beneficial ownership and substance concerning Indian investments is already prevalent," Sehgal said.

Tax experts also said that any guidance issued by the Indian government will be required to understand the full impact of these changes on investments and tax planning strategies. "...the application of the PPT to grandfathered investments remains unclear. There is a need for explicit guidance from the CBDT. Furthermore, the omission of the phrase "for the encouragement of mutual trade and investment" in the treaty's preamble suggests a shift in focus towards curbing tax evasion over promoting bilateral investment flows," Rakesh Nangia, Chairman, Nangia Andersen India said.

The amendment amendment reflects India's intent to align with global efforts against treaty abuse, particularly under the BEPS framework. Though India is yet to make any announcements regarding Pillar Two amendments, a few domestic corporate tax experts said it is anticipated that developments may be announced in the budget in July 2024 after elections, experts said.

While India has signed tax treaties agreeing to implement a minimum tax regime for multinationals under Pillar Two'. Following this, in December 2021, Organisation for Economic Co-operation and Development (OECD) released the Pillar Two model rules — Global Anti-Base Erosion (GloBE) rules — which will introduce a global minimum corporate tax rate set at 15 per cent. The Pillar Two framework is proposed to apply to MNE groups with annual revenue of €750 million and is estimated to generate around $150 billion in additional global tax revenues annually. The Pillar Two also introduces a domestic minimum form of taxation of a top-up tax on profits arising in a jurisdiction wherever the effective tax rate, on a jurisdictional basis, is below the minimum rate of 15 per cent.

- **Why in News:** The Income Tax Department said that the amended India-Mauritius protocol on the double taxation avoidance agreement (DTAA) is awaiting ratification and notification by the department.
- **What is DTAA Between India and Mauritius?**
  - **In 1983**, the Government of India and the Government of Mauritius came to a unanimous decision regarding the avoidance of double taxation called the DTAA.
  - Following is a list of benefits that residents of both the contracting states will get:
    - **It offers relief by exempting tax** on income in the resident country that residents earn in another nation.
    - **Lower withholding tax rates for taxpayers**, so they have to pay lower TDS on incomes like interest, dividends, and royalties in India.
    - This agreement **ensures that contracting states follow specific rules** to apply taxes on the international income of residents of contracting states.

- This agreement **offers an anti-abuse provision** that ensures that the benefits of this convention are only applicable to genuine residents of both countries.
- In some cases, residents of contracting nations get tax at concessions rates.
- This agreement ultimately **makes both countries attractive for investment** by offering a chance **to avoid double taxation along with other tax benefits.**

- In short, taxpayers can get multiple benefits under the DTAA, and the agreement will help **prevent financial evasion in regard to income earned and capital gains**

- **Significance of the DTAA Between India and Mauritius:**
  - The DTAA was a major reason for a large number of foreign portfolio investors (FPI) and foreign entities to route their investments in India through Mauritius.
  - **Mauritius remains India's 4th largest source of Foreign Portfolio Investments (FPI)**, after the US, Singapore and Luxembourg.
  - FPI investment from Mauritius stood **at Rs 4.19 lakh crore** at the end of March 2024, which is **6% of the total FPI investment of Rs 69.54 lakh crore in India**.
- **What is the Amendment to the DTAA Between India and Mauritius?**
  - Recently, in March2024, India and Mauritius signed an amendment to the DTAA (at Port Louis), introducing a **principal purpose test (PPT)**aimed at curtailing tax avoidance.
  - **The PPT will deny treaty benefits**, such as the reduction of withholding tax on interest royalties and dividends, where it is established that obtaining that treaty benefit is one of the principal purposes for the party engaged in the transaction.
    - **It ensures that treaty benefits are granted** only for transactions with a genuine purpose.
  - After the amendment, any Indian inbound or outbound cross-border structuring of investment routed through Mauritius should factor in the **BEPS MLI.**
    - **BEPS MLI** stands for Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting.
  - This amendment **applies to all incomes** such as capital gains, dividends, fee for technical services, etc.
- **Need to Amend the India-Mauritius DTAA:**
  - Mauritius has been a preferred jurisdiction for investments in India due to the non-taxability of capital gains from the sale of shares in Indian companies until 2016.
  - **The treaty was last amended in 2016 allowing the right to tax capital gains** arising from sale or transfer of shares of an Indian company acquired by a Mauritian tax resident.
  - The earlier objective of 'mutual trade and investment' has now been replaced with an intent to "eliminate double taxation".
    - **This will be done without creating opportunities for non-taxation or reduced taxation** through tax evasion or avoidance including through "treaty shopping arrangements".

9. Sulthan Bathery
Recent events of importance

- **Why in News:** BJP state president has raised the demand to rename Sultan Bathery, a town in Wayanad to 'Ganapathivattom'.
- **More on News:**
  - Sulthan Bathery is one of the three municipal towns in Wayanad and is home to a Ganapati temple once known as Ganapathyvattam.
  - The town got its name after Tipu Sultan invaded the Malabar region in the second half of 1700.
  - The Mysuru ruler's military used Ganapathyvattam as a battery for their ammunition and the town became known as 'Sultan's Battery' in British records.

WHY KERALA BJP CHIEF WANTS SULTHAN BATHERY RENAMED

SHAJU PHILIP
THIRUVANANTHAPURAM, APRIL 11

THE RENAMING of Sulthan Bathery in Kerala's Wayanad district is "inevitable", state BJP president K Surendran, who is also the party's candidate for the Wayanad Lok Sabha seat, has said.

"The name Sulthan Bathery emerged as part of Tipu Sultan's invasion. Sulthan Bathery was originally known as Ganapathyvattam. This is not the land of Tipu Sultan who massacred Hindus and Christians... Congress and CPM want the place to be known after a criminal," Surendran said.

Surendran is contesting against sitting MP Rahul Gandhi (Congress) and Annie Raja (CPI) in the Wayanad seat. What is the history of the town and its names?

Where does the name Ganapathyvattam come from?

Sulthan Bathery, one of the three municipal towns in Wayanad (the other two being Mananthavady and Kalpetta), has a stone temple that was once known as Ganapathyvattam. The temple, built in the architectural style of the Vijayanagara Empire, was constructed by Jains who migrated to Wayanad from areas in present-day Tamil Nadu and Karnataka, in the 13th century.

The temple was partly destroyed during the invasions of Tipu Sultan, the ruler of Mysuru, in the second half of the 18th century. Between 1750 and 1790, Tipu and his father Hyder Ali carried out several raids into what is today northern Kerala.

The temple remained abandoned for nearly one-and-a-half centuries. Later, it was taken over by the Archaeological Survey of India, which has declared it a monument of national importance.

The Jain temple in Sulthan Bathery. Wikimedia Commons

And what is the history of "Sulthan Bathery"?

The armies of Tipu destroyed temples and churches, and forced many in the path of its invasion to flee to escape forced religious conversion.

"It is believed that 25 churches were demolished... As the churches fell, Tipu's hand came down strongly upon a significant population of Roman Catholics that had made western Karnataka their home," *The Indian Express* had previously reported.

Tipu is said to have made the Ganapathy temple in Sulthan Bathery as a battery or store for weapons for his army in the Malabar region. This led to the British recording Ganapathyvattam as "[Tipu] Sultan's Battery". The name today survives as Sulthan Bathery.

10. Adjudicating Authority under the Prevention of Money Laundering Act, 2002 (PMLA)
GS 3 (Economy)

- **Why in News:** The Adjudicating Authority under the PMLA recently confirmed the attachment of assets worth Rs 751.9 crore belonging to a newspaper company**.**
- **About Adjudicating Authority under the PMLA:**
  - Under PMLA, an **adjudicating authority** determines within 180 days whether the properties attached by the Enforcement Directorate (ED) are involved in money laundering or not.
  - **Functioning:**
    - It **provides for** the **attachment of any property** that is suspected to have been acquired with the proceeds of crime in a case of any offence that is listed in the schedule of the law.
    - The attachment order is issued if the **ED Director** feels that "such proceeds of crime are likely to be concealed, transferred, or dealt with in any manner which may result in frustrating any proceedings relating to confiscation of such proceeds of crime".
    - This provisional attachment order is **valid for a period of 180 days.**
    - It **must be confirmed** within this time by an adjudicating authority appointed by the central government, failing which the property is automatically released from attachment.

ADJUDICATING AUTHORITY (PMLA)

The ED's attachment of National Herald's assets has been confirmed. What happens now?

THE ADJUDICATING Authority under the Prevention of Money Laundering Act, 2002 (PMLA) has confirmed the attachment of assets worth Rs 751.9 crore of the Congress-promoted *National Herald* newspaper.

The Enforcement Directorate (ED) had provisionally attached these properties in November 2023 in a case against Associated Journals Ltd (AJL) that publishes *National Herald*, and Young Indian (YI), which owns the newspaper. Congress leaders Sonia Gandhi and Rahul Gandhi hold 38% shares each in YI, which is being investigated after accusations that it acquired AJL and its assets for a "pittance" against an alleged loan extended by the Congress.

Adjudicating Authority

Section 5 of the PMLA provides for the attachment of any property that is suspected to have been acquired with the proceeds of crime. The attachment order is issued if the ED Director feels that "such proceeds of crime are likely to be concealed, transferred or dealt with in any manner which may result in frustrating any proceedings relating to confiscation of such proceeds of crime".

This provisional attachment order must be confirmed within 180 days by an Adjudicating Authority appointed by the central government, failing which the property is automatically released. But there is hardly any attachment under PMLA that the Adjudicating Authority refuses to confirm. The accused can continue to enjoy the property until the Adjudicating Authority confirms the attachment.

What happens afterward

The accused can challenge the confirmation order at the PMLA's Appellate Tribunal within 45 days. If unsuccessful, the accused can then move the High Court.

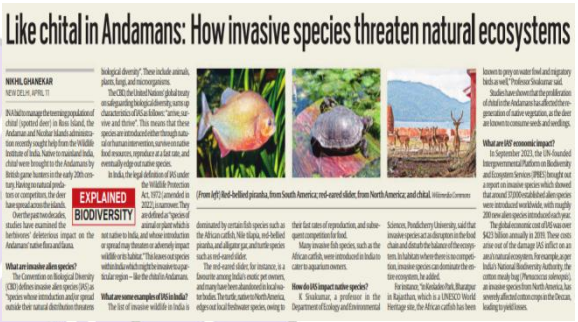
Unless the property is released along the way, it remains out of bounds for the owner until the trial is completed. In case of a conviction, the trial court may order confiscation of the attached property, and vest its rights to the central government.

Attached properties may remain locked for years and start to decay and crumble. Attached vehicles are sent to warehouses owned by the Central Warehousing Corporation, where the ED pays to park the vehicle. As cases drag on, these vehicles too rot. In the end, neither the accused nor the ED recovers anything from the vehicle, with the agency often paying up more rent than the value of the vehicle. ENS

- Because the initial attachment is provisional, the accused can continue to enjoy the property until the adjudicating authority confirms the attachment, after which the ED has the power to claim possession.

- **What happens after the Adjudicating Authority confirms the attachment?**
  - The accused has the **right to challenge** the adjudicating authority's confirmation order at the PMLA's Appellate Tribunal within 45 days.
  - **If the Appellate Tribunal too confirms** the order, the accused can file a plea in the High Court, and so on. Unless the property is released along the way, it shall remain out of bounds for the owner until the trial is completed.
  - Following final confirmation, in the case of a residential property, the ED will ask the owner to vacate the premises along with his belongings, and will take over possession.
  - **In case of a conviction**, the trial court may order confiscation of the attached property, and vest the rights to the property with the central government.
  - Attached properties may remain locked for years as the legal process continues, and may start to crumble and decay.

11. How Invasive Species Threaten Natural Ecosystems?
GS 3 (Environment)


Like chital in Andamans: How invasive species threaten natural ecosystems

NIKHIL GHANEKAR
NEW DELHI, APRIL 11

IN A bid to manage the teeming population of chital (spotted deer) in Ross Island, the Andaman and Nicobar Islands administration recently sought help from the Wildlife Institute of India. Native to mainland India, chital were brought to the Andamans by British game hunters in the early 20th century. Having no natural predators or competitors, the deer have spread across the islands.

Over the past two decades, studies have examined the herbivores' deleterious impact on the Andamans' native flora and fauna.

EXPLAINED BIODIVERSITY

What are invasive alien species?

The Convention on Biological Diversity (CBD) defines invasive alien species (IAS) as "species whose introduction and/or spread outside their natural distribution threatens biological diversity". These include animals, plants, fungi, and microorganisms.

The CBD, the United Nations' global treaty on safeguarding biological diversity, sums up characteristics of IAS as follows: "arrive, survive and thrive". This means that these species are introduced either through native human intervention, survive on native food resources, reproduce at a fast rate, and eventually edge out native species.

In India, the legal definition of IAS under the Wildlife Protection Act, 1972 (amended in 2022), is narrower. They are defined as "species of animal or plant which is not native to India, and whose introduction or spread may threaten or adversely impact wildlife or its habitat." This leaves out species within India which might be invasive to a particular region – like the chital in Andamans.

What are some examples of IAS in India?

The list of invasive wildlife in India is dominated by certain fish species such as the African catfish, Nile tilapia, red-bellied piranha, and alligator gar, and turtle species such as red-eared slider.

The red-eared slider, for instance, is a favourite among India's exotic pet owners, and many have been abandoned in local water bodies. The turtle, native to North America, edges out local freshwater species, owing to their fast rates of reproduction, and subsequent competition for food.

Many invasive fish species, such as the African catfish, were introduced in India to cater to aquarium owners.

How do IAS impact native species?

K Sivakumar, a professor in the Department of Ecology and Environmental Sciences, Pondicherry University, said that invasive species act as disrupters in the food chain and disturb the balance of the ecosystem. In habitats where there is no competition, invasive species can dominate the entire ecosystem, he added.

For instance, in Keoladeo Park, Bharatpur in Rajasthan, which is a UNESCO World Heritage site, the African catfish has been known to prey on water fowl and migratory birds as well," Professor Sivakumar said.

Studies have shown that the proliferation of chital in the Andamans has affected the regeneration of native vegetation, as the deer are known to consume seeds and seedlings.

What are IAS' economic impact?

In September 2023, the UN-founded Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) brought out a report on invasive species which showed that around 37,000 established alien species were introduced worldwide, with roughly 200 new alien species introduced each year.

The global economic cost of IAS was over $423 billion annually in 2019. These costs arise out of the damage IAS inflict on an area's natural ecosystem. For example, as per India's National Biodiversity Authority, the cotton mealy bug (Phenacoccus solenopsis), an invasive species from North America, has severely affected cotton crops in the Deccan, leading to yield losses.

(From left) Red-bellied piranha, from South America; red-eared slider, from North America; and chital. Wikimedia Commons

- **Why in News:** The Andaman & Nicobar Islands administration has sought help from Wildlife Institute of India (WII) to tackle the teeming population of Chital (Spotted Deer) in Ross Island.
- **What are Invasive Alien Species (IAS)?**
  - Convention on Biological Diversity (CBD) defines IAS as the species which on introduction (either naturally or through human intervention)-thrive and survive outside their natural habitat and threaten biological diversity by edging out native species in competition over resources. African catfish, Nile tilapia, red-bellied piranha, alligator gar, red-eared slider (turtle species) are some **IAS in India.**
- **Is Chital an IAS?**
  - **Wildlife Protection Act 1972** defines IAS as a species which is **not native to India**. This leaves out species within India which might be invasive to a particular region like the Chital in Andamans. Chitals, native to mainland India, are protected in India and were introduced there by the British in early 20th century. Having no natural predators or competitors and being good swimmers- Chitals spread swiftly across the Andamans.
- **Impact of IAS on native flora and fauna**
  - IAS disrupt the food chain and the ecosystem balance. In habitats where there is no competition, they can dominate the entire ecosystem. For example, in Keoladeo National Park, the African catfish preys on water fowls as well as migratory birds. Proliferation of Chital in Andamans has affected the regeneration of native vegetation, as they consume seeds and seedlings.
- **Economic impact**
  - Apart from causing dramatic changes to biodiversity and ecosystems, the **global economic cost** from the damage inflicted by IAS on an area's natural ecosystem was over $423 billion annually in 2019.For example, the cotton mealy bug- an invasive species native to North America severely affected cotton crops in the Deccan, leading to yield losses.
- **Chital(Axis axis)**
  - It is also known as the spotted deer, chital deer and axis deer, is a deer species native to the Indian subcontinent.
  - It is the most common deer species in Indian forests.
  - **Habitat:** Subtropical grasslands and forests.
  - **Distribution:** It is widely distributed in Asia, especially in India, Sri Lanka, Bangladesh, Bhutan, and a small group in Pakistan.
  - They prefer open grasslands, savannahs, and lightly forested areas.
  - **IUCN Red list**: Least Concern

13th April, 2024

1. What factors can soften the food inflation in the coming months?
GS 3 (Economy)

Inflation slowed, yet no relief on food bills

Vikas Dhoot
NEW DELHI

India's retail inflation moderated to a 10-month low of 4.85% in March from 5.1% in February but food inflation remained sticky at 8.52%, little changed from the 8.66% recorded in the previous month as price rise accelerated in cereals and meat, while vegetables, pulses, spices and eggs remained in double-digit inflation.

While inflation for urban consumers cooled significantly from 4.8% in February to 4.14% in March, rural consumers had it harder as they experienced a slightly higher inflation of 5.45% in March compared with 5.34% in the previous month.

This trend was visible in the extent of food price rise as well, as it accelerated from 8.3% in February to 8.6% in March for rural India, while the food inflation for urban consumers dropped from 9.2% in February to 8.35% last month.

On a month-on-month basis, there was no change in the Consumer Price Index but the food price index inched up about 0.2% and economists reckoned that the ongoing heatwave could spike food inflation in coming months. Even as crude oil prices are firming

Still sticky
Food inflation remained high at 8.52% in March, with a slight variation from 8.66% recorded in the previous month

the U.S. may delay hopes of interest rate cuts from the Federal Reserve, sticky food inflation at home could further dampen prospects of rate cuts from India's central bank.

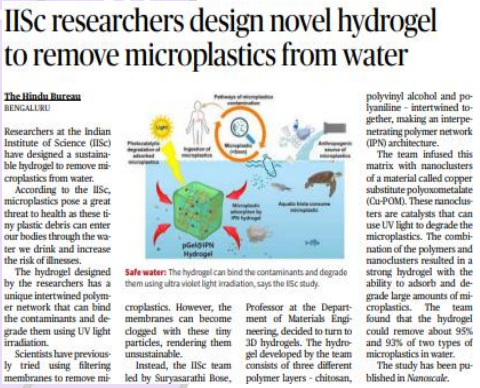
While March's inflation rate is still aloof from the bank's stated 4% target, average retail price rise in the last quarter of 2023-24 has been 5.08%, in line with the 5% average projected by the Reserve Bank of India (RBI).

The RBI, which last week called inflation the elephant in the room that needs to return to the forest for good, expects retail inflation to rise to an average 4.5% this year from the 5.4% clocked in 2023-24.

CONTINUED ON

- **Why in News:** RBI's Monetary Policy Committee (MPC) noted **retail food** inflation has been interrupting the ongoing disinflation process and posing challenge for the final descent of inflation to the target of 4%.
- **What Factors may Soften Food Inflation?**
  - **i. International Prices-** The United Nations' Food and Agriculture Organization's food price index fell for seven months in a row before edging to 118.3 points in March 2024 because of increasing vegetable oil index. Easing global food prices due to bumper harvests in key producing countries and restoration of supply lines post the Covid and Ukraine War-induced disruptions are making imports more feasible. For example, wheat is now at $210-220 per tonne from origin ports as against their March-May 2022 highs of $400-450 following the war outbreak. The landed cost of imported wheat (after adding freight and other charges of $40-50) would be around $260 per tonne or Rs 2,170/quintal, less than the government's Minimum Support Price (MSP) of Rs 2,275/quintal for the domestic wheat.
  - ii. **La-Nina-**India's pulses imports were up by 80% in 2023-24 compared to 2022-23 levels due to El Niño (the abnormal warming of central and eastern equatorial Pacific Ocean waters towards Ecuador and Peru, generally known to suppress rain in India) which affected the pulses output. But it is weakening now and there is a strong chance of La Niña (an abnormal cooling of the east-central equatorial Pacific water, resulting in surplus rainfall in India) developing from June to October. Given the past association of La Niña with surplus rainfall in India, there might be a bountiful agricultural year ahead which can help mitigate food inflation pressures.

2. Hydrogel
GS 3 (Science and Tech)


IISc researchers design novel hydrogel to remove microplastics from water

The Hindu Bureau
BENGALURU

Researchers at the Indian Institute of Science (IISc) have designed a sustainable hydrogel to remove microplastics from water.

According to the IISc, microplastics pose a great threat to health as these tiny plastic debris can enter our bodies through the water we drink and increase the risk of illnesses.

The hydrogel designed by the researchers has a unique intertwined polymer network that can bind the contaminants and degrade them using UV light irradiation.

Scientists have previously tried using filtering membranes to remove microplastics. However, the membranes can become clogged with these tiny particles, rendering them unsustainable.

Instead, the IISc team led by Suryasarathi Bose, Professor at the Department of Materials Engineering, decided to turn to 3D hydrogels. The hydrogel developed by the team consists of three different polymer layers - chitosan, polyvinyl alcohol and polyaniline - intertwined together, making an interpenetrating polymer network (IPN) architecture.

The team infused this matrix with nanoclusters of a material called copper substitute polyoxometalate (Cu-POM). These nanoclusters are catalysts that can use UV light to degrade the microplastics. The combination of the polymers and nanoclusters resulted in a strong hydrogel with the ability to adsorb and degrade large amounts of microplastics. The team found that the hydrogel could remove about 95% and 93% of two types of microplastics in water.

The study has been published in *Nanoscale*.

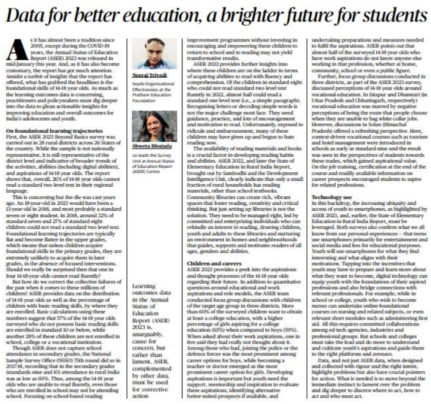
Safe water: The hydrogel can bind the contaminants and degrade them using ultra violet light irradiation, says the IISc study.

- **Why in News:** Researchers at the Indian Institute of Science (IISc) have designed a sustainable hydrogel to remove microplastics from water.
- **About Hydrogel:**
  - It is a three-dimensional network composed of **hydrophobic polymers** synthesized by crosslinking water-soluble polymers.
  - It can **retain a large quantity of water** within their network without disturbing their original structure. This imparts flexibility and swelling properties to it.
  - It is a "smart" material that can change its structure in response to its environment, such as the local temperature, pH, salt or water concentration.
- **Key facts about the sustainable hydrogel:**
  - It has a unique intertwined **polymer network** that can bind the contaminants and degrade them using **UV light irradiation.**
  - It consists of three different polymer layers – **chitosan, polyvinyl alcohol and polyaniline** – intertwined together, making an interpenetrating polymer network (IPN) architecture.
  - The team infused this matrix with nanoclusters of a material called **copper substitute polyoxometalate (Cu-POM).** These nanoclusters are catalysts that can use UV light to degrade the micro plastics.
  - The combination of the polymers and nanoclusters resulted in a strong hydrogel with the ability to adsorb and degrade large amounts of microplastics.
  - It was found to be highly efficient – it could remove about 95% and 93% of two different types of microplastics in water at near-neutral pH (~6.5).
- **What is a Micro plastic?**
  - It is tiny plastic debris smaller **than 5 mm in length.**
  - There are two types of microplastics as follows
    - **Primary microplastics:** These are tiny particles (solid plastic particles of less than one millimeter in their largest dimension) intentionally designed for commercial use, such as cosmetics, nurdles i.e., plastic pellets used in industrial manufacturing and fibers from synthetic fabrics such as nylon.
    - **Secondary microplastics:** These are formed from the degradation of large plastic objects such as bottles, fishing nets and plastic bags. It is caused by exposure to the environment, such as radiation from the sun, wind and ocean waves.

3.Data for better education, a brighter future for students
GS 2 (Education)

- **Why in News:** The Annual Status of Education Report (ASER) 2023, released in mid-January, offers critical insights into the educational landscape of India, particularly focusing on the foundational skills of adolescents aged 14-18. Amidst concerns regarding learning outcomes and career aspirations, ASER provides valuable data to inform policy interventions and improve educational outcomes for youth across the country.
- **Data Insights from ASER 2023**

- ○ **Foundation Skills of 14-18 Year Olds:** ASER 2023 revealed that 26% of 14-18 year olds in rural areas cannot read a standard two level text in their regional language, indicating concerning learning outcomes.
- ○ **Trajectory of Foundational Learning:** Historical data analysis indicates that without acquiring foundational skills in primary grades, children are unlikely to develop them later. This highlights the critical importance of early interventions in education.
- ○ **Enrollment and Reading Skills:** ASER data suggests that a significant portion of 14-18 year olds lacking basic reading skills are either enrolled in lower standards or not attending school at all, emphasizing the need for interventions beyond school-based programs.



Data for better education, a brighter future for students

As it has almost been a tradition since 2005, except during the COVID-19 years, the Annual Status of Education Report (ASER) 2023 was released in mid-January this year. And, as it has also become customary, the report has got much attention. Amidst a surfeit of insights that the report has offered, what has grabbed the headlines is the foundational skills of 14-18 year olds. As much as the learning outcomes data is concerning, practitioners and policymakers must dig deeper into the data to glean actionable insights for improving education and overall outcomes for India's adolescents and youth.

On foundational learning trajectories

First, the ASER 2023 Beyond Basics survey was carried out in 28 rural districts across 26 States of the country. While the sample is not nationally representative, it is still representative of the district level and indicative of broader trends of the activities, abilities (including digital abilities), and aspirations of 14-18 year olds. The report shows that, overall, 26% of 14-18 year olds cannot read a standard two level text in their regional language.

This is concerning but the die was cast years ago. An 18-year-old in 2023 would have been a 13-year-old in 2018, and most probably a standard seven or eight student. In 2018, around 32% of standard seven and 27% of standard eight children could not read a standard two level text. Foundational learning trajectories are typically flat and become flatter in the upper grades, which means that unless children acquire foundational skills in the primary grades, they are extremely unlikely to acquire them in later grades, in the absence of focused interventions. Should we really be surprised then that one in four 14-18-year olds cannot read fluently?

But how do we correct the collective failures of the past when it comes to these millions of children? ASER provides data on the distribution of 14-18 year olds as well as the percentage of children with basic reading skills, by where they are enrolled. Basic calculations using these numbers suggest that 57% of the 14-18 year olds surveyed who do not possess basic reading skills are enrolled in standard 10 or below, while another 28% of these children are not enrolled in school, college or a vocational institution.

Though ASER does not capture school attendance in secondary grades, the National Sample Survey Office (NSSO) 75th round did so in 2017-18, recording that in the secondary grades (standards nine and 10) attendance in rural India was as low as 60%. Thus, among the 14-18 year olds who are unable to read fluently, even those who are enrolled in school may not be attending school. Focusing on school-based reading improvement programmes without investing in encouraging and empowering these children to return to school and to reading may not yield transformative results.

ASER 2022 provides further insights into where these children are on the ladder in terms of acquiring abilities to read with fluency and comprehension. Of the children in standard eight who could not read standard two level text fluently in 2022, almost half could read a standard one level text (i.e., a simple paragraph). Recognising letters or decoding simple words is not the major challenge most face. They need guidance, practice, and lots of encouragement and motivation to read. Unfortunately, exposed to ridicule and embarrassment, many of these children may have given up and begun to hate reading now.

The availability of reading materials and books is a crucial factor in developing reading habits and abilities. ASER 2022, and later the State of Elementary Education in Rural India Report, brought out by Sambodhi and the Development Intelligence Unit, clearly indicate that only a small fraction of rural households has reading materials, other than school textbooks. Community libraries can create rich, vibrant spaces that foster reading, creativity and critical thinking. But just setting up libraries is not the solution. They need to be managed right, led by committed and enterprising individuals who can rekindle an interest in reading, drawing children, youth and adults to these libraries and nurturing an environment in homes and neighbourhoods that guides, supports and motivates readers of all ages, genders and abilities.

Children and careers

ASER 2023 provides a peek into the aspirations and thought processes of the 14-18 year olds regarding their future. In addition to quantitative questions around educational and work aspirations and role models, the ASER team conducted focus group discussions with children of the target age group in three districts. More than 60% of the surveyed children want to obtain at least a college education, with a higher percentage of girls aspiring for a college education (65%) when compared to boys (59%). When asked about their work aspirations, one in five said they had really not thought about it. Among those who had, joining the police or the defence forces was the most prominent among career options for boys, while becoming a teacher or doctor emerged as the most prominent career option for girls. Developing aspirations is important but youth need the support, mentorship and inspiration to evaluate these aspirations, identifying alternative better-suited prospects if available, and undertaking preparations and measures needed to fulfil the aspirations. ASER points out that almost half of the surveyed 14-18 year olds who have work aspirations do not know anyone else working in that profession, whether at home, community, school or even a public figure.

Further, focus group discussions conducted in three districts, as part of the ASER 2023 survey, discussed perceptions of 14-18 year olds around vocational education. In Sitapur and Dhamtari (in Uttar Pradesh and Chhattisgarh, respectively) vocational education was marred by negative perceptions of being the route that people choose when they are unable to bag white collar jobs. However, discussions in Solan (Himachal Pradesh) offered a refreshing perspective. Here, context-driven vocational courses such as tourism and hotel management were introduced in schools as early as standard nine and the result was seen in the perspectives of students towards these trades, which gained aspirational value. On-the-job training, certification at the end of the course and readily available information on career prospects encouraged students to aspire for related professions.

Technology use

In this backdrop, the increasing ubiquity and access of youth to smartphones, as highlighted by ASER 2023, and, earlier, the State of Elementary Education in Rural India Report, must be leveraged. Both surveys also confirm what we all know from our personal experiences – that teens use smartphones primarily for entertainment and social media and less for educational purposes. Youth will use smartphones for what they find interesting and what aligns with their motivations. Tapping into the incentives that youth may have to prepare and learn more about what they want to become, digital technology can equip youth with the foundations of their aspired professions and also bridge connections with relevant professionals. For example, while in school or college, youth who wish to become nurses can undertake online foundational courses on nursing and related subjects, or even relevant short modules such as administering first aid. All this requires committed collaborations among ed-tech agencies, industries and professional groups. But schools and colleges must take the lead and do more to understand and cultivate youth's aspirations and guide them to the right platforms and avenues.

Data, and not just ASER data, when designed and collected with rigour and the right intent, highlight problems but also have crucial pointers for action. What is needed is to move beyond the immediate instinct to lament over the problem and dig deeper to discern where to act, how to act and who must act.

Neeraj Trivedi heads Organisational Effectiveness at the Pratham Education Foundation

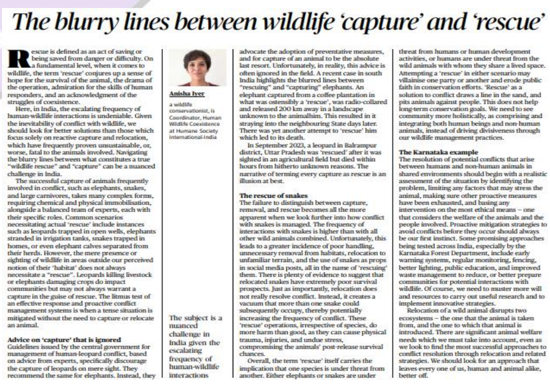
Shweta Bhutada co-leads the Survey Unit at Annual Status of Education Report (ASER) Centre

Learning outcomes data in the Annual Status of Education Report (ASER) 2023 is, unarguably, cause for concern, but rather than lament, ASER, complemented by other data, must be used for corrective action

- **Addressing Past Failures and Encouraging Return to Education:**
  - ○ **Attendance Challenges:** NSSO data from 2017-18 indicates low attendance rates in secondary grades, suggesting that even enrolled children may not regularly attend school. This underscores the importance of strategies to encourage and facilitate school attendance.
  - ○ **Reading Improvement Programs:** While focusing on school-based reading programs is crucial, ASER highlights the necessity of empowering children to return to school and fostering a positive environment for reading outside of school.
  - ○ **Role of Community Libraries:** Establishing and managing community libraries can create supportive environments for reading, requiring committed individuals to lead and nurture reading habits in children and adults alike.
- **Youth Aspirations and Career Development:**
  - ○ **Educational Aspirations:** ASER findings indicate that a majority of surveyed youth aspire for at least a college education, with variations in career aspirations between genders. Mentorship and support are crucial for youth to evaluate and fulfill their aspirations effectively.
  - ○ **Career Options and Perceptions:** ASER reveals prominent career choices among surveyed youth, with insights into the perception of vocational education. Positive experiences from context-driven vocational courses highlight the potential for aspirational value in non-traditional career paths.
  - ○ **Leveraging Technology for Skill Development:** With increasing smartphone access among youth, there is an opportunity to leverage digital technology for educational purposes. Collaboration between educational institutions, industries, and professional groups can provide relevant resources and guidance to youth pursuing their career goals.

3. <u>Navigating the Blurry Lines Between Wildlife 'Capture' and 'Rescue'</u>
<u>GS 3 (Environment)</u>

- **Why in News:** The increasing incidence of human-wildlife interactions in India has sparked debates surrounding wildlife rescue operations and the ethical considerations involved. With the blurry lines between rescue and capture, it becomes imperative to analyze the implications of such interventions on wildlife conservation efforts and human-wildlife coexistence.
- **Definition and Nuanced Challenges:** While 'rescue' implies saving animals from danger, distinguishing it from 'capture' poses nuanced challenges. The escalating human-wildlife interactions in India necessitate proactive solutions beyond reactive capture and relocation strategies.



The blurry lines between wildlife 'capture' and 'rescue'

Rescue is defined as an act of saving or being saved from danger or difficulty. On a fundamental level, when it comes to wildlife, the term 'rescue' conjures up a sense of hope for the survival of the animal, the drama of the operation, admiration for the skills of human responders, and an acknowledgment of the struggles of coexistence.

Here, in India, the escalating frequency of human-wildlife interactions is undeniable. Given the inevitability of conflict with wildlife, we should look for better solutions than those which focus solely on reactive capture and relocation, which have frequently proven unsustainable, or, worse, fatal to the animals involved. Navigating the blurry lines between what constitutes a true "wildlife rescue" and "capture" can be a nuanced challenge in India.

The successful capture of animals frequently involved in conflict, such as elephants, snakes, and large carnivores, takes many complex forms, requiring chemical and physical immobilisation, alongside a balanced team of experts, each with their specific roles. Common scenarios necessitating actual 'rescue' include instances such as leopards trapped in open wells, elephants stranded in irrigation tanks, snakes trapped in homes, or even elephant calves separated from their herds. However, the mere presence or sighting of wildlife in areas outside our perceived notion of their 'habitat' does not always necessitate a "rescue". Leopards killing livestock or elephants damaging crops do impact communities but may not always warrant a capture in the guise of rescue. The litmus test of an effective response and proactive conflict management systems is when a tense situation is mitigated without the need to capture or relocate an animal.

Advice on 'capture' that is ignored

Guidelines issued by the central government for management of human-leopard conflict, based on advice from experts, specifically discourage the capture of leopards on mere sight. They recommend the same for elephants. Instead, they advocate the adoption of preventative measures, and for capture of an animal to be the absolute last resort. Unfortunately, in reality, this advice is often ignored in the field. A recent case in south India highlights the blurred lines between "rescuing" and "capturing" elephants. An elephant captured from a coffee plantation in what was ostensibly a 'rescue', was radio-collared and released 200 km away in a landscape unknown to the animalhim. This resulted in it straying into the neighbouring State days later. There was yet another attempt to 'rescue' him which led to its death.

In September 2023, a leopard in Balrampur district, Uttar Pradesh was 'rescued' after it was sighted in an agricultural field but died within hours from hitherto unknown reasons. The narrative of terming every capture as rescue is an illusion at best.

The rescue of snakes

The failure to distinguish between capture, removal, and rescue becomes all the more apparent when we look further into how conflict with snakes is managed. The frequency of interactions with snakes is higher than with all other wild animals combined. Unfortunately, this leads to a greater incidence of poor handling, unnecessary removal from habitats, relocation to unfamiliar terrain, and the use of snakes as props in social media posts, all in the name of 'rescuing' them. There is plenty of evidence to suggest that relocated snakes have extremely poor survival prospects. Just as importantly, relocation does not really resolve conflict. Instead, it creates a vacuum that more than one snake could subsequently occupy, thereby potentially increasing the frequency of conflict. These 'rescue' operations, irrespective of species, do more harm than good, as they can cause physical trauma, injuries, and undue stress, compromising the animals' post-release survival chances.

Overall, the term 'rescue' itself carries the implication that one species is under threat from another. Either elephants or snakes are under threat from humans or human development activities, or humans are under threat from the wild animals with whom they share a lived space. Attempting a 'rescue' in either scenario may villainise one party or another and erode public faith in conservation efforts. 'Rescue' as a solution to conflict draws a line in the sand, and pits animals against people. This does not help long-term conservation goals. We need to see community more holistically, as comprising and integrating both human beings and non-human animals, instead of driving divisiveness through our wildlife management practices.

The Karnataka example

The resolution of potential conflicts that arise between humans and non-human animals in shared environments should begin with a realistic assessment of the situation by identifying the problem, limiting any factors that may stress the animal, making sure other proactive measures have been exhausted, and basing any intervention on the most ethical means – one that considers the welfare of the animals and the people involved. Proactive mitigation strategies to avoid conflicts before they occur should always be our first instinct. Some promising approaches being tested across India, especially by the Karnataka Forest Department, include early warning systems, regular monitoring, fencing, better lighting, public education, and improved waste management to reduce, or better prepare communities for potential interactions with wildlife. Of course, we need to muster more will and resources to carry out useful research and to implement innovative strategies.

Relocation of a wild animal disrupts two ecosystems – the one that the animal is taken from, and the one to which that animal is introduced. There are significant animal welfare needs which we must take into account, even as we look to find the most successful approaches to conflict resolution through relocation and related strategies. We should look for an approach that leaves every one of us, human and animal alike, better off.

Anisha Iyer a wildlife conservationist, is Coordinator, Human Wildlife Coexistence at Humane Society International-India

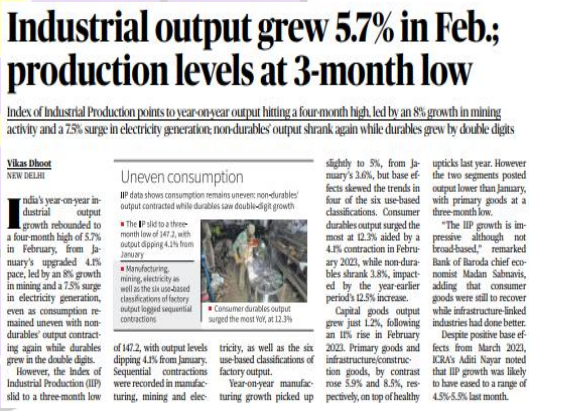
The subject is a nuanced challenge in India given the escalating frequency of human-wildlife interactions

- **Complexity of Wildlife Capture:** Successful capture operations involve intricate processes such as chemical immobilization and expert coordination. While genuine rescue scenarios involve animals in immediate danger, the mere presence of wildlife outside perceived habitats doesn't always warrant capture.
- **Effective Conflict Management:** An effective response to human-wildlife conflict entails mitigating tense situations without resorting to capture or relocation. Proactive measures and community engagement play crucial roles in managing conflicts sustainably.

- **Advice on 'Capture' that is Ignored**
  - **Guidelines for Conflict Management:** Central government guidelines discourage the capture of wildlife based solely on sightings and advocate preventive measures. However, in practice, these guidelines are often disregarded, leading to unintended consequences such as animal deaths or displacement.
  - **Case Examples:** Instances of misguided capture operations, such as the relocation of elephants or leopards, highlight the repercussions of ignoring expert advice. The narrative of every capture being labeled as a rescue obscures the ethical considerations and may lead to adverse outcomes.
  - **Impact on Wildlife Welfare:** The indiscriminate capture and relocation of wildlife, including snakes, can result in physical trauma, stress, and compromised survival chances. Such interventions exacerbate human-wildlife conflicts rather than resolving them.
- **The Karnataka Example**
  - **Proactive Conflict Mitigation:** The Karnataka Forest Department exemplifies proactive approaches to conflict resolution, emphasizing early warning systems, community education, and improved waste management. These strategies aim to prevent conflicts before they escalate, fostering harmonious coexistence.
  - **Considerations for Relocation:** Relocating wild animals carries significant ecological and welfare implications, disrupting ecosystems and imposing stress on animals. Ethical interventions should prioritize the welfare of both humans and wildlife, ensuring sustainable outcomes.
  - **Holistic Approach to Conservation:** Long-term conservation goals necessitate a holistic view of communities, integrating human and non-human animals. By prioritizing proactive measures and ethical interventions, conservation efforts can achieve greater success while fostering harmony between humans and wildlife.

4. India's February IIP grows at 5.7%
GSG 3 (Economy)

- **Why in News:**
  - Growth in India's industrial output accelerated to 5.7 percent in February, according to data released by the Ministry of Statistics and Programme Implementation
  - Also, India's consumer price index (CPI)-based inflation rate eased to 4.85% in March from 5.09% in February. However, it remained well above the RBI's 4 per cent target.


Industrial output grew 5.7% in Feb.; production levels at 3-month low

Index of Industrial Production points to year-on-year output hitting a four-month high, led by an 8% growth in mining activity and a 7.5% surge in electricity generation; non-durables' output shrank again while durables grew by double digits

Vikas Dhoot
NEW DELHI

India's year-on-year industrial output growth rebounded to a four-month high of 5.7% in February, from January's upgraded 4.1% pace, led by an 8% growth in mining and a 7.5% surge in electricity generation, even as consumption remained uneven with non-durables' output contracting again while durables grew in the double digits.

However, the Index of Industrial Production (IIP) slid to a three-month low of 147.2, with output levels dipping 4.1% from January. Sequential contractions were recorded in manufacturing, mining and electricity, as well as the six use-based classifications of factory output.

Year-on-year manufacturing growth picked up slightly to 5%, from January's 3.6%, but base effects skewed the trends in four of the six use-based classifications. Consumer durables output surged the most at 12.3% aided by a 4.8% contraction in February 2023, while non-durables shrank 3.8%, impacted by the year-earlier period's 12.5% increase.

Capital goods output grew just 1.2%, following an 11% rise in February 2023. Primary goods and infrastructure/construction goods, by contrast rose 5.9% and 8.5%, respectively, on top of healthy upticks last year. However the two segments posted output lower than January, with primary goods at a three-month low.

"The IIP growth is impressive although not broad-based," remarked Bank of Baroda chief economist Madan Sabnavis, adding that consumer goods were still to recover while infrastructure-linked industries had done better.

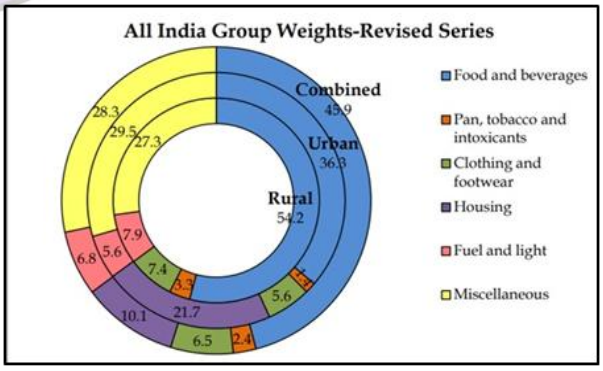
Despite positive base effects from March 2023, ICRA's Aditi Nayar noted that IIP growth was likely to have eased to a range of 4.5%-5.5% last month.

Uneven consumption

IIP data shows consumption remains uneven; non-durables' output contracted while durables saw double-digit growth

- The IIP slid to a three-month low of 147.2, with output dipping 4.1% from January
- Manufacturing, mining, electricity as well as the six use-based classifications of factory output logged sequential contractions
- Consumer durables output surged the most YoY, at 12.3%

- **Index of Industrial Production (IIP)**
  - **About**
    - The IIP number measures the industrial production for the period under review, usually a month, as against the reference period.
    - There is a lag of six weeks in the publication of the IIP index data after the reference month ends.
    - It is currently calculated using **2011-2012** as the base year.
  - **Institution involved**
    - National Statistical Organisation (NSO) under the Ministry of Statistics and Programme Implementation (MoSPI) releases the IIP data.
  - **IIP Index Components**
    - IIP is a composite indicator that measures the growth rate of industry groups classified under:
      - **Broad sectors**: Mining (14.4%), Manufacturing (77.6%) & Electricity (8%)
      - **Use-based sectors**: Basic Goods, Capital Goods and Intermediate Goods etc.
    - The **Eight Core Industries** mentioned in above section **comprise 40.27 percent of the weight of items** included in the IIP



- **Consumer Price Index (CPI)**
  - CPI is a metric that measures retail inflation by collecting data on the prices of goods and services that are consumed by the retail population of the country.
  - The National Statistical Office (NSO), Ministry of Statistics and Programme Implementation releases CPI.
    - CPI is released for all-India and States/UTs separately for **rural, urban and combined (national).**

- Currently, CPI is calculated using **2012 as a base year.**
- Items for the CPI basket of **goods and services** classified across categories.
  - Few of the categories are; food and beverages, clothing, housing, fuel and light, recreation and etc.
    - All categories are assigned weights (as shown in the diagram).
  - Currently, CPI is calculated by taking into consideration 299 items.

- **Retail Inflation for March 2024**
  - India's retail inflation rate eased to a 10-month low in March 2024. This fall was led by fuel and light group (-3.24 per cent), reflecting a decline in cooking gas prices.
  - **Food and beverages inflation remained elevated**, easing only marginally to 7.7 per cent in March from 7.8 per cent in February.
  - However, core inflation, which **excludes volatile food and fuel items**, continued to decelerate in March to 3.25 per cent.
- **Growth in the IIP for February 2024**
  - Growth in the IIP expanded to 5.7 per cent in February 2024.
  - It was boosted by output growth in mining (8 per cent) and electricity (7.5 per cent) while manufacturing output (5 per cent) remained the laggard.
  - In terms of the use-based classification of goods, production growth in February was as follows:
    - Capital goods increased at 1.2 percent;
    - Intermediate goods increased at 9.5 percent;
    - Infrastructure goods rose to 8.5 percent;
    - Consumer durable rose to 12.3 percent;
    - Consumer non-durable goods fell to 3.8 percent

5. Softshell turtle (family Trionychidae)
GS 3 (Environment)

PAGE 1 ANCHOR

As poll race heats up, a turtle becomes mascot in Cooch Behar

RAHUL BHATTACHARYA & ATRI MITRA
BANESWAR (COOCH BEHAR), APRIL 12

IN THE village of Baneswar in north Bengal, about 40 km from the city of Cooch Behar, lies a Shiva temple that Koch dynasty king Nar Narayan is said to have built during his reign in the 15th Century. Devotees believe the temple came up on the ruins of a temple built by Asura king Banasura. But, Shiva is not the sole resident deity in the temple.

The temple pond is also home to "Mohan", the survivor of what has been to the endangered Black softshell turtle that are revered as an incarnation of the Hindu deity Vishnu. The turtles are so vulnerable — the International Union for Conservation of Nature (IUCN) lists them as "critically endangered" — that locals have been waging a battle to protect them, even calling a bandh last November as a protest against the state administration's perceived lack of efforts.

Recognising the strong mood, the Election Commission (EC) has adopted "Mohan Babu" as its poll mascot to get people out to the polling booths on April 19 — not that turnout is a problem in Cooch Behar, where polling has crossed 80% in all parliamentary polls since 1980. The EC, which had used "Mohan Babu" during the 2021 Assembly elections too, has plastered pictures of the smiling turtle across the constituency, with a message to people to vote.

"Local people revere the tor-

A poster of EC mascot 'Mohan Babu', an endangered black softshell turtle (top); a turtle in the temple pond. Partha Paul

tles. So we thought it was a good idea to use them to reach out to voters and spread voter awareness," Cooch Behar District Magistrate Arvind Kumar Meena told The Indian Express.

Though the EC has taken note of the turtles' importance, Baneswar residents allege the government has done little to protect the reptiles apart from putting up hoardings on the Cooch Behar-Alipurduar Road telling drivers to slow down in the "turtle corridor".

"We always knew that there were Mohans here. In 2002, when the pond attached to the temple was being cleaned after draining the water, locals discovered Mohans. I was there," said Trinamool Congress (TMC) leader and Cooch Behar Zilla Parishad board member Parimal Barman, who is also the president of the Mohan Raksha Committee formed that year. "We consider Mohan to be an avatar of Lord Vishnu (Kurma avatar). As per folklore, a king of Cooch Behar brought the turtles

CONTINUED ON PAGE 2

- **Why in News:** Turtle mascot 'Mohan Babu' adopted for Cooch Behar election to symbolise cultural significance and encourage voter turnout.
- **More on News:**
  - The Indian softshell turtle (Nilssonia gangetica), or Ganges softshell turtle is a species of softshell turtle found in South Asia in rivers such as the Ganges, Indus and Mahanadi.
  - It feeds mostly on fish, amphibians, carrion and other animal matter, but also takes aquatic plants.
  - This turtle is listed in part II of Schedule I of the Wild Life (Protection) Act, 1972.
  - **IUCN Status:** Critically Endangered

6. CDP-SURAKSHA, govt's new digital platform to disburse subsidies to horticulture farmers
GS 3 (Economy)

How a new platform will instantly disburse subsidies to farmers

HARIKISHAN SHARMA
NEW DELHI, APRIL 12

THE UNION government has developed a new digital platform to disburse subsidies to horticulture farmers under the Cluster Development Programme (CDP), a initiative by the Centre to promote horticulture crops. The platform is known as CDP-SURAKSHA.

In recent years, the total production of horticulture crops has spiked in India. While in 2050-51 their production stood at 240.52 million tonnes, production increased to 334.60 million tonnes in 2020-21.

The horticulture sector makes a substantial contribution to the Indian economy as it contributes nearly one-third to the agricultural gross value added (GVA) — the emission of the value of goods and services produced by an industry, sector, manufacturer, asset or region.

What is the CDP-SURAKSHA?

The acronym SURAKSHA stands for "System for Unified Resource Allocation, Knowledge, and Secure Horticulture Assistance." The CDP-SURAKSHA will allow an instant disbursal of subsidies to farmers by utilising three BHIM-powered from the National Payments Corporation of India (NPCI). The e-RUPI voucher is a cashless and no-contact electronic payment mechanism, which can be shared with the beneficiaries for a specific purpose or activity by organisations or government bodies, according to NPCI.

The platform will have features such as a database integration with the PM-Kisan scheme, cloud-based server space from National Informatics Centre (NIC), content management system, geotagging, etc.

How will the CDP-SURAKSHA work?

The platform will allow access to farmers, vendors, implementing agencies (IA), cluster development agencies (CDAs), and officials of the National Horticulture Board (NHB).

A farmer can log onto the platform using her mobile number and place an order for planting materials such as seeds, seedlings, and plants, based on her requirement.

Once the demand has been raised by the farmer, the system will ask her to contribute her share of the cost of the planting material. The subsidy amount paid by the government will appear on the screen automatically.

After the farmer pays her contribution, an e-RUPI voucher will be generated. The voucher will then be encoded by a vendor, who will provide the planting material to the farmer.

After the planting material gets delivered to the farmer, she will have to verify the delivery through geo-tagged photos and videos of her field. Once the verification is done, the

EXPLAINED POLICY

How is the new system different from the old one?

In the old system, a farmer had to give the full amount to buy planting materials. She would then have to approach the officials concerned for the release of the subsidy amount.

The new platform, however, will provide the subsidy amount to a farmer upfront, at the time of purchasing planting materials. Vendors will receive their payments only after the farmer verifies the delivery of her orders.

How many farmers and banks have come on board?

While the platform is yet to be unveiled at the national level, around 14,400 farmers in a pilot have been uploaded on the platform so far. These include 8,000 farmers of Sahyadri Farms Private Ltd, which is implementing the project cluster in Nashik, Maharashtra. The rest of the 400 farmers are from the Meghalaya Basin Management Agency (MBMA), which is implementing the turmeric cluster in Meghalaya.

Four banks — HDFC Bank, ICICI Bank, State Bank of India (SBI) and Bank of Baroda — have also been onboarded on the platform. These banks will generate e-RUPI vouchers for fund disbursement.

What is the CDP?

The CDP is a component of the central sector scheme of MIDH. Its aimed at leveraging "the geographical specialisation of horticulture clusters and promoting integrated and market-led development of pre-production, production, post-harvest, logistics, branding, and marketing activities".

So far, 53 horticulture clusters have been identified, out of which 52 have been selected for the pilot. These clusters are in various stages of development.

According to the Union government, about 5 lakh hectares of area will be covered through all 53 clusters, covering 10 lakh farmers. It is estimated that the initiative will attract private investment of Rs 6,250 crore, in addition to the government's assistance, which is fixed according to the size of the cluster — up to Rs 25 crore for mini cluster (size up to 2,000 hectares), up to Rs 50 crore for medium clusters (2,000 to 15,000 hectares), and up to Rs 100 crore for mega clusters (more than 15,000 hectares).

- **Why in News:** The government's launch of CDP-SURAKSHA aims to streamline subsidy disbursement to horticulture farmers, fostering growth in the sector. This digital platform seeks to enhance efficiency and transparency in subsidy allocation under the Cluster Development Programme (CDP), contributing to the development of India's horticulture sector.
- **What is CDP-SURAKSHA?**
  - **Introduction:** CDP-SURAKSHA, acronym for "**System for Unified Resource Allocation, Knowledge, and Secure Horticulture Assistance**," is a digital platform initiated by the government. It facilitates instant subsidy disbursal to horticulture farmers, leveraging e-RUPI vouchers from the National Payments Corporation of India (NPCI).
  - **Key Features:** The platform integrates various databases, including PM-KISAN and UIDAI validation, ensuring seamless subsidy allocation. It enables farmers to place orders for planting material, contributes their share of costs, generates e-RUPI vouchers, and verifies delivery through geo-tagging, enhancing accountability and efficiency.
  - **Operational Process:** Farmers access the platform to order planting material, contribute their share of costs, and receive subsidies upfront. Vendors supply materials upon verification, and payments are released only post-verification, ensuring transparency and adherence to guidelines.

- **How does CDP-SURAKSHA work?**
  - **Farmer Engagement:** Farmers register on the platform using their mobile numbers, place orders for planting material, and contribute their share of costs.
  - **Subsidy Disbursement:** Upon placing orders, farmers receive subsidies upfront through e-RUPI vouchers, facilitating seamless transactions.
  - **Vendor Verification:** Vendors deliver planting material, which farmers verify through geo-tagged media, ensuring transparency in delivery and payment release.
  - **Subsidy Release:** After verification, implementing agencies (IAs) validate documents and release subsidies to vendors, promoting accountability and adherence to guidelines.
- **Comparison with the old system**
  - **Upfront Subsidy:** Unlike the previous system, CDP-SURAKSHA provides subsidies upfront at the time of purchasing planting material, streamlining the subsidy disbursal process.
  - **Verification Mechanism:** The platform incorporates geo-tagging verification, ensuring accountability and transparency in delivery and payment release, unlike the traditional system.
- **Government's Cluster Development Program (CDP):**
  - **Objective:** CDP aims to promote integrated and market-led development of horticulture clusters, fostering pre-production, production, post-harvest, and marketing activities.
  - **Implementation:** NHB identifies and develops horticulture clusters, providing financial assistance based on cluster size, attracting private investment, and promoting sustainable growth in the sector.
  - **Impact:** With 55 identified clusters covering 10 lakh farmers, CDP is expected to catalyze private investment of Rs 8,250 crore, contributing to the holistic development of the horticulture sector.

7. <u>Volcanic Vortex Rings</u>
<u>GS 1 (Geography)</u>

VOLCANIC VORTEX RINGS

When does a volcano spout volcanic vortex rings, and what is it about Mount Etna and this activity?

SINCE LAST week, Mount Etna, the largest volcano in Europe, and among the world's most active and iconic volcanoes, has been sending up almost perfect rings of smoke into the air that scientists refer to as volcanic vortex rings.

Mount Etna volcano

Mount Etna, or simply Etna, is a UNESCO World Heritage Site on the east coast of Sicily, the largest island in the Mediterranean Sea, lying just off the toe of the Italian "boot". Etna's summit has five craters, which are responsible for most of its eruptions; there are also "flank" eruptions that occur out of 300-odd vents of varying sizes along the slopes.

Etna's eruptive history can be traced back 500,000 years. Since 1600, at least 60 flank eruptions and many more summit eruptions have taken place. In recent years, summit eruptions have occurred in 2006, 2007-08, on two occasions in 2012, in 2018, and 2021; flank eruptions have taken place in 2001, 2002-03, 2004-05, and 2008-09.

Volcanic vortex rings

Vortex rings are generated when gas, predominantly water vapour, is released rapidly through a vent in the crater. The vent that has opened up in Etna's crater is almost perfectly circular, so the rings that have been seen above the mountain since April 2 are also circular.

Boris Behncke, a volcanologist based in Catania, a port city at the foot of Etna, had said in a post on X in July 2023 that the rings "are produced by the explosion of gas bubbles within a narrow conduit, which shoots the gas at high speed toward the surface. Attrition along the conduit walls slows the movement of the gas jet, relative to the center of the conduit".

A scientific paper published in February 2023 noted that the phenomenon was first observed at Etna and Vesuvius in Italy in 1724, and has been documented in an engraved plate from 1755. In more recent times, volcanic vortex rings have been observed at several other spots, including Redoubt in Alaska, Tungurahua in Ecuador, etc. ('Dynamics of Volcanic Vortex Rings': Scollo et al., *Scientific Reports*)

Simona Scollo, a volcanologist at the INGV Etna Observatory in Catania, Sicily and a co-author of the 2023 study, told *The New York Times* that volcanic smoke rings were produced in the same way as dolphins blow bubble rings.

"They (dolphins) compress the water in their mouths... using their tongue they push it out of their mouths and create such a pressure that it forms a ring," Scollo said.

According to the report, the rings can remain in the air for up to 10 minutes, but tend to quickly disintegrate if conditions are windy and turbulent.

Etna and the rings

Behncke said on Facebook this month that "no volcano on Earth produces as many vapour rings as Etna". In July 2023, Behncke had reported seeing "dozens of gas rings every day" above Etna.

Behncke said: "... Now Etna is breaking all previous records. In the late afternoon of April 2, 2024, a small mouth opened on the northeastern edge of the Southeast Crater, producing gusts of incandescent gas. The next morning it was obvious that these blows were producing an impressive amount of steam rings, and the business has since been going on, having already issued hundreds if not thousands of these pretty rings."

This activity does not, however, mean Etna is going to erupt in a particularly spectacular way. In fact, the activity from the new vent was slowing down. ENS

Volcanic vortex rings emerge from the Etna Volcano in Sicily, Italy. AP/PTI

- **Why in News:** Mount Etna volcano has been sending up almost perfect rings of smoke into the air which are a rare phenomenon that scientists refer to as volcanic vortex rings.
- **About Volcanic Vortex Rings:**
  - They are generated when gas, predominantly **water vapour**, is released rapidly through a **vent in the crater**. The rings can remain in the air for up to 10 minutes, but tend to disintegrate quickly if conditions are windy and turbulent.
    - It was first observed at **Etna and Vesuvius** in Italy in 1724.
  - In more recent times, volcanic vortex rings have been observed at volcanoes such as
    - Redoubt in Alaska, Tungurahua in Ecuador, Pacaya in Guatemala, Eyjafjallajökull and Hekla in Iceland, Stromboli in Italy, Aso and Sakurajima in Japan, Yasur in Vanuatu, Whakaari in New Zealand, and Momotombo in Nicaragua.
- **Key facts about Mount Etna:**
  - It is sometimes referred to simply as Etna, is an **active volcano** on the **east coast of Sicily**, the largest island in the **Mediterranean Sea.**
    - Etna's peak is the highest in Italy **south of the Alps,** and it is Europe's largest and one of the most active volcanoes.
  - Etna's summit has five craters, which are responsible for most of the volcano's eruptions; there are also "flank" eruptions that occur out of 300-odd vents of varying sizes along the slopes of the mountain.
  - It has been a **UNESCO World Heritage Site** since 2013.

8. Switzerland's Peace Deal
GS 2 (International Relations)

Switzerland's peace bid

Switzerland will host a peace conference in mid-June as the first step towards ending the Russia-Ukraine war. The Swiss have an old reputation for mediation, but the challenges for peace are formidable. Both Switzerland and Ukraine have said they consider India's presence at the peace conference as critical

STUBHAJIT ROY

WITH THE Russia-Ukraine war in its third year, Switzerland will host a peace conference at Bürgenstock on June 15-16, immediately after the June 13-15 G7 summit in Italy.

The conference, to which some 120 countries will be invited at the level of Heads of State/Government, is being held in the hope that US President Joe Biden will be able to take time out in the middle of his re-election campaign to attend. Russia's President Vladimir Putin and China's President Xi Jinping, who have announced a "friendship without limits", will attend.

Background of conference

Switzerland has taken the initiative at the request of Ukraine's President Volodymyr Zelenskyy, who visited Bern in January.

The idea is to "provide a platform for a high-level dialogue on ways to achieve a comprehensive, just and lasting peace for Ukraine based on international law and the UN Charter. Switzerland expects that the conference will aim to "create a common understanding of the framework conducive to this goal and a concrete roadmap for the peace process", it said.

Switzerland had earlier hosted a Ukraine Recovery Conference (URC) in Lugano in 2022, and a National Security Advisors' Meeting in Davos at the beginning of this year.

Swiss history of mediation

Neutrality is a foundational principle of Switzerland's foreign policy. It has had a tradition of being the protecting power since the 19th century when it looked after the interests of both the Kingdom of Bavaria and the Grand Duchy of Baden during the Franco-Prussian War of 1870-71. It acted as the protecting power during the two World Wars, and held nearly 200 protective power mandates during World War II.

Switzerland represented India's interests in Pakistan and Pakistan's in India between 1971 and 1976. Over the last two decades, Switzerland has been the protecting power between Saudi Arabia and Iran, the US and Iran, Russia and Georgia, and other pairs of mutually hostile governments.

Ukraine's President Volodymyr Zelenskyy meets with the President of the Swiss Confederation Viola Amherd earlier this year. Office of the President of Ukraine

The country also has a history of hosting negotiations or mediating in conflicts. It hosted talks between the government in Colombo and the Liberation Tigers of Tamil Eelam (LTTE) in 2006, and took initiatives for peace in Nepal, and the Middle East.

In his book 'Peace Mediation: Switzerland's Experiences in Peace Mediation', David Lanz and Simon J.A Mason wrote that since 1990, Switzerland has been involved in approximately 50 peace processes in 35 countries and regions.

During the Russia-Ukraine war, however, Switzerland has leaned towards Ukraine, and has joined the Western sanctions regime against Russia.

Goals of the conference

There has been some scepticism around the meaningfulness of the conference if it is not attended by Russia. Russia is also not likely to participate in the first round of discussions, the President of the Swiss Confederation, Viola Amherd, had said in February. However, the conference is expected to "lay the groundwork for Russia and depending on the discussions and the course of the war, Moscow may get involved later".

"We're not going to sign the peace deal at this conference," Amherd has said. She called the meeting a "first step" that could lead to a second, follow-up gathering.

"It has to be clear from the start that Russia cannot be the only one to define the terms," Swiss Foreign Minister Ignazio Cassis has said. "Now, it's not mandatory that it's there [on June 15-16], but we're convinced that on the first day, people might agree about how to better invite to Russia."

Russia has also been unavailable — "backbreaking work", as Cassis said.

Zelenskyy has sought India's support on a 10-point "peace formula", which calls for the withdrawal of Russian troops from Ukraine, release of prisoners, restoration of Ukraine's territorial integrity, and guarantees on nuclear safety, food and energy security.

There has been some scepticism around the meaningfulness of the conference if it is not attended by Russia. Russia is also not likely to participate in the first round of discussions, the President of the Swiss Confederation, Viola Amherd, had said in February. However, the conference is expected to "lay the groundwork for Russia and depending on the discussions and the course of the war, Moscow may get involved later".

India, Russia, and Ukraine

Cassis discussed the summit with External Affairs Minister S Jaishankar in New Delhi on February 9. The Swiss had said early on that they considered the participation of the BRICS nations — Brazil, India, China, and South Africa — to be crucial. Cassis had travelled to India, Brazil, South Africa, and South Korea.

Since the outbreak of the war in February 2022, India has walked a diplomatic tightrope between Russia and Ukraine. It did not explicitly condemn Russia's invasion, but at the international probe into the Bucha massacre and expressed concern over nuclear threats by Putin. It has also abstained on votes or votes taken against Russia in several resolutions at the UN Security Council.

During the Raisina Dialogue, External Affairs Minister S Jaishankar said: "This is not the era of war" — a formulation that found an echo at the G20 Summit statement in Bali in November 2022. At the G20 Summit in New Delhi in September 2023, India was able to forge a consensus, and got a joint declaration to which both the US-led West and Russia, and China, could agree.

Modi has had at least five phone conversations with Putin and at least four with Zelenskyy since the beginning of the war. He has also met both leaders in person on the sidelines of international events.

During their telephonic conversation last month, the Ukrainian President thanked Modi for India's "principled position" on the war, and said it would be important for Kyiv to see New Delhi attend the peace conference in Switzerland.

The Indian government has pitched itself as being supportive of any peace process, and is willing to play a role. New Delhi believes that it has the credibility of being a non-partisan player in the conflict.

"From the beginning of the Ukraine conflict, India has been emphasising on dialogue and diplomacy, and has been open to any peace process," Modi has said.

For New Delhi, which aspires to be a permanent member of the UNSC, being a part of the conference presents an opportunity to shape the conversation at the global high table. It has positioned itself as a voice of the Global South, and had conveyed the impact of the conflict on the food and energy security of developed countries to the world's major economies during last year's G20 summit.

The Ukraine Peace Conference in Switzerland is now set to be held days after the results of the Lok Sabha elections are known on June 4.

- **Why in News:**
  - With the Russia-Ukraine war in its third year, **Switzerland will host a peace conference on June 15-16, immediately after the G7 Summit in Italy**.
  - Switzerland has taken this initiative at the request of Ukraine's President Volodymyr Zelenskyy, who visited Bern (Switzerland's capital) earlier in January this year.
- **History of Swiss Mediation:**
  - Neutrality is a foundational principle of Switzerland's foreign policy.
  - It has had a tradition of being the protecting power since the 19th century when it looked after the interests of both the Kingdom of Bavaria and the Grand Duchy of Baden during the Franco-Prussian War of 1870-71.
  - It acted as the protecting power during the two World Wars, and held nearly 200 protective power mandates during World War II.
  - Switzerland represented India's interests in Pakistan and Pakistan's in India between 1971 and 1976.
  - Over the last two decades, Switzerland has been the protecting power between Saudi Arabia and Iran, the US and Iran, Russia and Georgian, and other pairs of mutually hostile governments.
  - The country also has a history of hosting negotiations or mediating in conflicts. It hosted talks between the government in Colombo and the Liberation Tigers of Tamil Eelam in 2006.
  - During the Russia-Ukraine war, however, Switzerland has leaned towards Ukraine, and has joined the Western sanctions regime against Russia.
- **What are the Goals of the Summit?**
  - During President Zelenskyy's visit to Bern in January 2024, Switzerland and Ukraine discussed the next steps towards a comprehensive, just and lasting peace in Ukraine.
  - At Ukraine's request, Switzerland agreed to host a high-level conference.
  - The conference will aim to "create a common understanding of the framework conductive to this goal and a concrete roadmap for the peace process".
  - Switzerland has invited 120 countries, including **India**, to participate in the conference.
- **Russia's Response to the Summit:**
  - Surprisingly, Russia has not been invited by Switzerland for the Ukraine-Russia Peace Summit.
  - Russian President Vladimir Putin has said there will be no peace in Ukraine until Russia's goals are met.
  - He declared that Russia was not invited, and also stated that nothing could be decided without Moscow.
  - He suggested that **because there would be no Russian delegation at the conference, it could be claimed that Russia is refusing to negotiate**
- **India's Participation in the Summit:**
  - Once the election results are declared, the Prime Minister will be ready to travel, after the formation of the government.
    - This would be the Indian Prime Minister's first trip overseas after elections.
  - Also, there are expectations that Italy will invite the PM for the G7 leaders' summit as a guest — **as has been the practice in the last five years since France invited New Delhi in 2019 and Japan in 2023.**
  - After the G7 leaders' summit, the stop at the peace conference will be a "natural event" to go to for the Prime Minister.
  - **Zelenskyy had sought India's support on his 10-point "peace formula"**, which calls for withdrawal of Russian troops from Ukraine, release of prisoners, restoration of Ukraine's territorial integrity, and guarantees on nuclear safety, food and energy security.
  - India has sought to maintain a diplomatic balancing act between Russia and Ukraine, and it will have to calibrate its response over attendance at the peace conference.

15th April, 2024

1. Urbanisation, no liberating force for Dalits
GS 2 (Social Issues)

Urbanisation, no liberating force for Dalits

A quick look at the nameplates in India's neighbourhoods will show you that caste is the primary language of spatiality in Indian cities. Despite such failings, B.R. Ambedkar rejected village life and encouraged Dalits to move to the city. Ambedkar said that an Indian village is "the working plant of the Hindu social order" and argued that it is the ideal place to institutionalise caste. Gandhi, however, saw the Indian village as a self-reliant, republic and a just social order. Gandhi argued that the decentralisation of power to the villages through Gram Swaraj. In strong opposition, Ambedkar believed that the idealisation of Indian village life emerged either from the colonial romanticisation of the rural population or from the desire of Hindus to retain caste domination.

In the Constituent Assembly, Ambedkar opposed the idea that villages should be recognised as autonomous administrative units and felt relieved that the Assembly rejected the idea. "For the untouchables, there could not have been a bigger calamity," he wrote.

Urbanisation and Ambedkar's belief

In the process of urbanisation, Ambedkar saw an opportunity for Dalit liberation. He believed that the systems of caste oppression that thrive in Indian villages become weaker in cities. These included segregation of Dalits into ghettos, restrictions on economic activities, and denial of land ownership. Jyotirao Phule had also admired city life for being liberal and enabling him to earn a living. At the core of the liberating power of cities, for Ambedkar and Phule, was the opportunity to become anonymous. Cities, in principle, offer an opportunity to become a stranger among a set of strangers and transition from a caste-based order to a class-based order. One defined not by genealogy but by accumulation of resources or capital.

Here, it is important to acknowledge that

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The Indian city has failed the aspirations and expectations that the Dalit liberation movement had placed in urbanisation

Ambedkar had seen the ways in which caste adapts to urbanisation. In *Waiting for a Visa*, Ambedkar reflects on his struggle to find a house in Baroda.

While modern urbanisation was fuelled by a skill-based transition to economy, i.e., industrialisation, the dominance of caste over skill had also become clear to Ambedkar when even skilled Dalits were not allowed to enter the weaving sections of textile mills. Despite these limitations, he argued that urbanisation was a liberating force. However, after a century of Ambedkar's struggles with renting a house in Baroda, caste remains the spatial logic of Indian cities.

Language of 'purity-pollution'

Caste translates into a city's spatiality through the language of 'purity-pollution'. A consumer survey in 2020 revealed that eating non-vegetarian food is the biggest deal-breaker in finding rental housing in India. Writing about segregation policies under the Peshwas in the Maratha kingdom, Gopal Guru explains this phenomenon. Guru says that the ghetto is not merely a space but also forms the constitution of the body of the ghetto dweller. The language of purity-pollution that identifies the *asaurna* space as 'pure' and one that can be polluted by the Dalit body, extends to the logic of the city. Here, the ghetto dweller carries the ghetto on their body when they step out into the city. In the language of caste, the space of the ghetto – characterised by filth and dirt – becomes mutually reinforcing on the body of the Dalit – characterised by meat-eating and other "unacceptable" traits.

More recently, the language of caste has been imposed on public spaces of the city by various governments. In March 2017, the Uttar Pradesh government, for example, issued regulations for meat shops that included, for example, a ban on selling meat near religious places and black paint or curtains in the facade of the shop to hide the sight of meat from pedestrians. In 2020, several municipal corporations in Gujarat banned the sale of meat-based street food on the city's main roads citing "religious sentiments". Through these Brahminical regulations, the State has characterised meat as the impurity that could pollute a public space – both secular and religious – or even a pedestrian's sight.

A crippling segregation

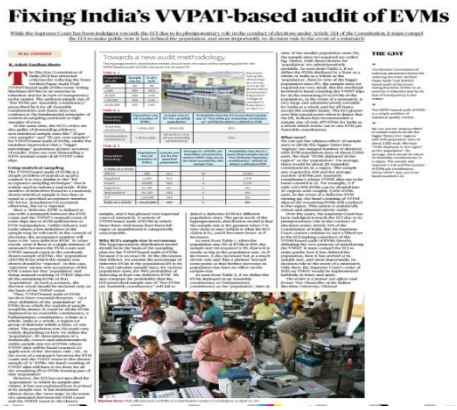
Urban governance policies and housing crises have also sustained caste-based segregation. Scholars such as Rajshaal Saraviwal, Sneha Tejani and Christophe Jaffrelot have shown that Muslims and Dalits face the most crippling segregation in Indian cities.

A large-scale study also found that public services and access to municipal infrastructure such as clean drinking water are the worst in Dalit and Muslim ghettos. Research in sacrifice zones – regions marked for severe environmental pollution such as landfills – shows that such areas are overwhelmingly inhabited by Dalits and Muslims. A recent report by the Housing and Land Rights Network on forced evictions in India also shows that Dalits and Muslims are the most impacted by slum demolition drives.

Through lived experience and extensive research, we can see that the Indian city has failed the aspirations and expectations that the Dalit liberation movement had placed in urbanisation. While transition to city life might have weakened some structures of caste oppression, they have morphed through language, state sanction and policy, and have evolved to allow caste to thrive in Indian cities. The Indian city has fallen short of the potential and promise that Ambedkar saw in urbanisation. Even after a century of urban development, Dalits remain, to use Ambedkar's words, "the children of India's ghetto".

- **Why in News:** The discussion on urbanisation and Dalit liberation in India encompasses debates on caste discrimination, urban governance, and promises of development. Dr. B.R. Ambedkar's view of urbanisation as a means of Dalit empowerment contrasts with the realities faced by Dalit communities in modern cities. Persistent caste-based segregation, discrimination, and unequal access to resources highlight the challenges in addressing caste oppression in urban areas.
- **Caste Dynamics in Urban Spaces**
  - **Ambedkar's Perspective:** Ambedkar viewed urbanisation as a potential avenue for Dalit liberation, seeing cities as spaces where the grip of caste oppression could weaken due to factors like anonymity and opportunities for economic advancement.
  - **Persistence of Caste in Cities:** Despite the hopes pinned on urbanisation, caste-based segregation and discrimination continue to shape the spatiality of Indian cities, manifesting through practices like housing discrimination and Brahminical regulations on public spaces.
  - **Impact on Dalit Communities:** Studies reveal that Dalits and Muslims face severe segregation and lack access to basic municipal services in urban areas, highlighting how urbanisation has not lived up to the expectations of Dalit liberation.
- **Challenges in Urban Governance and Caste Segregation**
  - **Policy Implications:** Urban governance policies and housing crises contribute to sustaining caste-based segregation, with Dalits and Muslims facing the most severe impacts according to research.
  - **State-Sanctioned Discrimination:** Government regulations on issues like meat shops and street food further perpetuate caste-based discrimination, reflecting a Brahminical influence on public spaces and reinforcing purity-pollution ideologies.
  - **Inequitable Access to Services:** Dalit and Muslim ghettos often lack access to essential services like clean drinking water, while forced evictions disproportionately affect these communities, indicating systemic failures in urban governance.
- **Challenges for Dalit Liberation in Urban Spaces**
  - **Failed Promise of Urbanisation:** Despite the belief in urbanisation as a liberating force, the persistence of caste-based discrimination and segregation in cities highlights the shortcomings of this transition for Dalit communities.
  - **Evolution of Caste Structures:** Caste oppression in urban areas has evolved through language, policy, and state sanction, allowing caste to thrive despite attempts at liberation through urbanisation.
  - **Persistent Marginalisation:** Even after a century of urban development, Dalits continue to face marginalisation and discrimination, indicating a failure of Indian cities to fulfill the promises of equality and liberation.

2. Fixing India's VVPAT-based audit of EVMs
GS 2 (Elections)


Fixing India's VVPAT-based audit of EVMs

While the Supreme Court has been indulgent towards the ECI due to its pleas on matters vital to the conduct of elections under Article 324 of the Constitution, it must compel the ECI to make public how it has defined the population, and must importantly, its decision rule in the event of a mismatch

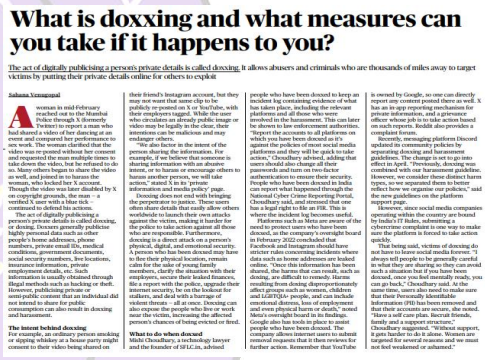
Towards a new audit methodology

THE GIST

- **Why in News:** The Election Commission of India has attracted criticism for reducing the Voter Verified Paper Audit Trail (VVPAT) based audit of Electronic Voting Machines (EVMs) to an exercise in tokenism and for its lack of transparency in the matter.
- **Critique of the VVPAT-based Audit of EVMs**
  - **Tokenism vs. Transparency:** The Election Commission of India (ECI) has faced criticism for its approach to the Voter Verified Paper Audit Trail (VVPAT) based audit of Electronic Voting Machines (EVMs), with concerns raised about its transparency and effectiveness.
  - **Uniform Sample Size Issue:** The prescribed uniform sample size of "five EVMs per Assembly constituency" lacks adherence to statistical sampling principles, leading to significant margins of error and diminishing the audit's credibility.
  - **Arbitrary Demands:** Critics, while pointing out flaws in the ECI's approach, have also advocated for arbitrary and non-statistical sample sizes like "25 per cent" or "50 per cent," without considering statistical viability, thereby complicating the resolution of the issue.

- **Statistical Sampling Approach**
  - **Quality Control Analogy:** The VVPAT-based audit of EVMs mirrors a problem of statistical quality control akin to lot acceptance sampling techniques used in industry, where sample inspection determines the acceptance or rejection of an entire population.
  - **Defining Defects:** In the electoral context, a "defective EVM" signifies any discrepancy between the EVM count and the manual count of VVPAT voter slips, necessitating a "zero defective EVM" acceptance criterion for electoral integrity.
  - **Decision Rule Implementation:** A clear decision rule must outline the course of action in case of a discrepancy, mandating manual counting of VVPAT slips for the entire population if even a single defective EVM is detected in the sample.
- **Challenges and Solutions**
  - **Ambiguity in ECI's Approach:** The ECI's failure to specify the population, justify the sample size, and articulate the decision rule in case of discrepancies undermines the credibility of the VVPAT-based audit and raises questions about electoral integrity.
  - **Statistical Viability Considerations:** Utilizing the hypergeometric distribution model provides a statistically sound basis for determining sample sizes, ensuring robustness and accuracy in the audit process.
  - **Administrative Viability:** Dividing larger states into manageable regions for sampling purposes balances statistical robustness with administrative feasibility, allowing for effective audit implementation without overwhelming resources

3. What is doxxing and what measures can you take if it happens to you?
GS 3 (Science and Tech)


What is doxxing and what measures can you take if it happens to you?

The act of digitally publicising a person's private details is called doxxing. It allows abusers and criminals who are thousands of miles away to target victims by pairing their private details online for others to exploit

Sahana Venugopal

A woman in mid-February reached out to the Mumbai Police through X (formerly Twitter) to report a man who had shared a video of her dancing at an event and compared her performance to sex work. The woman clarified that the video was re-posted without her consent and requested the man multiple times to take down the video, but he refused to do so. She reported the matter to the police as well, and joined in to harass the woman, who locked her X account. Though the video was later disabled by X on copyright grounds, the man – a verified X user with a blue tick – continued to defend his actions.

The act of digitally publicising a person's private details is called doxxing, which is the public release of sensitive or highly personal data such as other people's home addresses, phone numbers, private email IDs, medical conditions, government documents, social security numbers, live locations, insurance information, private employment details, etc. Such information is usually obtained through illegal methods such as hacking or theft. However, publishing private or sensitive information of an individual did not intend to share for public consumption can also result in doxxing and harassment.

The intent behind doxxing

For example, an ordinary person smoking or sipping whiskey at a house party might consent to their video being shared on their friend's Instagram account, but they may not want it to be shared by them publicly re-posted on X or YouTube, with their employers tagged. While the user who circulates an already public image or video may be legally in the clear, their intentions can be malicious and may endanger others.

"We also factor in the intent of the person sharing the information. For example, if we believe that someone is sharing information with an abusive intent, such as encouraging followers to harass another person, we will take action," stated X in its 'private information and media policy' page.

Doxxing does not end with bringing the perpetrator to justice. These users often share details that easily allow others worldwide to launch their own attacks against the victims, making it harder for them to identify the original source of those who are responsible. Furthermore, doxxing is a direct attack on a person's physical, digital, and emotional security. A person who has been doxxed may have to flee their physical location, remain calm for the sake of young family members, clarify the situation with their employers, secure their leaked finances, file a report with the police, upgrade their internet security, be on the lookout for fraud, and deal with rape, death, or violent threats – all at once. Doxxing can also expose the people who live or work near the victim, increasing the affected person's chances of being evicted or fired.

What to do when doxxed

Mishi Choudhary, a technology lawyer and the founder of SFLC.in, advised people who have been doxxed to keep an offline copy of any evidence of what has taken place, including the relevant platforms and all those who were involved in the harassment. This can later be shown to law enforcement authorities. "Report the accounts to all platforms on which you have been doxxed as it's against the policies of most social media platforms and they will be quick to take action," Choudhary advised, adding that users should also change all their passwords and enable 2-factor authentication to ensure their security. People who have been doxxed in India can report what happened through the National Cyber Crime Reporting Portal, Choudhary said, and stressed that one has a legal right to file an FIR. This is where that incident log becomes useful.

Platforms such as Meta are aware of the risks that individuals face when they are doxxed, as the company's oversight board in February 2022 concluded that Facebook and Instagram should have stricter rules concerning incidents where data such as home addresses are leaked online. "Once this information has been shared, the harms that can result, such as doxing, are difficult to remedy. Harms resulting from doxing disproportionately affect groups such as women, children and LGBTQ+ people, and include severe emotional distress, loss of employment and even physical harm or death," noted Meta's oversight board in its findings. Google also has tools in place to assist people who have been doxxed. The company allows internet users to submit removal requests that it then reviews for further action. Remember that YouTube is owned by Google, so one can directly report any doxxing that takes place on X has an in-app reporting mechanism for private information, and a grievance officer whose job is to take action based on such reports. Reddit also provides a complaint forum.

Recently, messaging platform Discord updated its community policies by separating doxxing and harassment guidelines. The change is set to go into effect in April. "Previously, doxxing was a violation of our policies, and it remains online. However, we consider these distinct harm types, so we separated them to better reflect how we organise our policies," said the new guidelines on the platform support page.

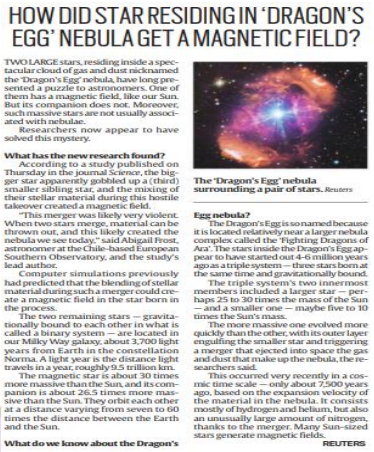
However, since social media companies operating within the country are bound by India's IT Rules, submitting a grievance to the platform is likely to make sure the platform is forced to take action quickly.

That being said, victims of doxxing do not have to leave social media forever. "I always tell people to be generally careful in what they are sharing so they can avoid such a situation but if you have been doxxed, once you feel mentally ready, you can go back," Choudhary said. At the same time, users also need to make sure that their Personally Identifiable Information (PII) has been removed and that their accounts are secure, she noted. "Have a self care plan. Recruit friends, family and a support structure," Choudhary suggested. "Without support, it gets harder to do it alone. Women are targeted for several reasons and we must not feel weakened or ashamed."

- **Why in News:** In recent years, the proliferation of digital platforms has facilitated the rapid dissemination of personal information, leading to an alarming rise in instances of doxxing. It has emerged as a significant threat to online privacy and security. From cyberbullying and harassment to identity theft and real-world violence, the consequences of doxxing are far-reaching and profound.
- **Understanding Doxxing**
  - **Case Example:** The recent incident involving the Mumbai Police underscores the prevalence and seriousness of doxxing. A woman's private video circulated without her consent, leading to online harassment and distress.
  - **Definition and Scope:** Doxxing encompasses the deliberate act of publicly revealing an individual's private information, obtained through illicit means such as hacking or theft. This includes personal data like home addresses, phone numbers, and email IDs.
  - **Methods and Motivations:** Perpetrators of doxxing often exploit vulnerabilities in online security to obtain sensitive information, which they then disseminate with malicious intent. Motivations can range from personal vendettas to ideological conflicts or financial gain.
- **Implications of Doxxing**
  - **Digital Harassment:** Doxxing amplifies the scope and intensity of online harassment, exposing victims to threats, defamation, and invasion of privacy. The dissemination of personal information can lead to real-world consequences, including stalking and physical harm.
  - **Disproportionate Impact:** Vulnerable groups, such as women, children, and marginalized communities, bear a disproportionate burden of harm from doxxing. They face heightened risks of exploitation, discrimination, and social ostracism due to the exposure of their private information.
  - **Psychological Toll:** The psychological impact of doxxing extends beyond immediate threats, causing long-term emotional distress and trauma. Victims may experience anxiety, depression, and feelings of vulnerability, impacting their mental well-being and quality of life.
- **Responding to Doxxing Incidents**
  - **Legal and Technological Solutions:** Victims of doxxing can pursue legal recourse by filing complaints through cybercrime reporting portals and seeking protective measures against further harassment. Technological safeguards, such as encryption and secure authentication, can enhance digital security and privacy.
  - **Platform Responsibility:** Social media platforms play a crucial role in combating doxxing by enforcing stringent policies against the dissemination of private information. They should prioritize user safety and swiftly respond to reports of doxxing, including removing offending content and suspending accounts.

- **Public Awareness and Support:** Raising awareness about the risks of doxxing and educating users on best practices for safeguarding personal information are essential preventive measures. Additionally, providing support networks and resources for victims of doxxing can help mitigate the emotional and practical impacts of such incidents.

4. Iran-Israel tensions
GS 2 (International Relations)


HOW DID STAR RESIDING IN 'DRAGON'S EGG' NEBULA GET A MAGNETIC FIELD?

TWO LARGE stars, residing inside a spectacular cloud of gas and dust nicknamed the 'Dragon's Egg' nebula, have long presented a puzzle to astronomers. One of them has a magnetic field, like our Sun. But its companion does not. Moreover, such massive stars are not usually associated with nebulae.
Researchers now appear to have solved this mystery.

What has the new research found?
According to a study published on Thursday in the journal Science, the bigger star apparently gobbled up a (third) smaller sibling star, and the mixing of their stellar material during this hostile takeover created a magnetic field.
"This merger was likely very violent. When two stars merge, material can be thrown out, and this likely created the nebula we see today," said Abigail Frost, astronomer at the Chile-based European Southern Observatory, and the study's lead author.
Computer simulations previously had predicted that the blending of stellar material during such a merger could create a magnetic field in the star born in the process.
The two remaining stars — gravitationally bound to each other in what is called a binary system — are located in our Milky Way galaxy, about 3,700 light years from Earth in the constellation Norma. A light year is the distance light travels in a year, roughly 9.5 trillion km.
The magnetic star is about 30 times more massive than the Sun, and its companion is about 26.5 times more massive than the Sun. They orbit each other at a distance varying from seven to 60 times the distance between the Earth and the Sun.

What do we know about the Dragon's Egg nebula?
The Dragon's Egg is so named because it is located relatively near a larger nebula complex called the 'Fighting Dragons of Ara'. The stars inside the Dragon's Egg appear to have started out 4-6 million years ago as a triple system — three stars born at the same time and gravitationally bound.
The triple system's two innermost members included a larger star — perhaps 25 to 30 times the mass of the Sun — and a smaller one — maybe five to 10 times the Sun's mass.
The more massive one evolved more quickly than the other, with its outer layer engulfing the smaller star and triggering a merger that ejected into space the gas and dust that make up the nebula, the researchers said.
This occurred very recently in a cosmic time scale — only about 7,500 years ago, based on the expansion velocity of the material in the nebula. It consists mostly of hydrogen and helium, but also an unusually large amount of nitrogen, thanks to the merger. Many Sun-sized stars generate magnetic fields.
REUTERS

The 'Dragon's Egg' nebula surrounding a pair of stars. Reuters

- **Why in News:** On April 14, Iran launched hundreds of drones and missiles towards Israel. This attack was in retaliation for an Israeli attack on its consulate that occurred in Damascus, Syria, two weeks ago. Several senior Iranian generals were killed and Iran had vowed to respond.
- **Iran's attack on Israel**
  - While Israel is not believed to have suffered any major damage early on, Iran warned that a military move from Israel would be met with a much larger response.
- **India's stand in Iran-Israel tension**
  - India called for de-escalation in the aftermath of Iran's retaliatory strike against Israel.
  - This approach is in contrast to **India's instant expression of solidarity with Israel at the highest political level immediately after the October 7 terror attack by Hamas.**
- **What does India's approach on recent Iran-Israel tension signify?**
  - **Difference between terrorism perpetrated by non-state actors and direct confrontation between two states**
    - India's call to show restraint in the region **highlights the contrast** between dealing with **terrorism from a non-government group and managing a conflict between two big countries** with a history of rivalry.
    - Delhi has a lot at stake in its relationships with both Tehran and Tel Aviv, and **it's never been about picking one over the other**.
    - If India was seen as taking Israel's side on October 7 (Hamas attack), its position today urging restraint will be viewed as balanced and in favour of regional peace.
  - **Complexity of the region's politics**
    - India's call for de-escalation between Israel and Iran is about recognising the complexity of the region's politics.
    - Inter-state and intra-state conflicts in the Middle East are deep and pervasive.
    - India will have to forever balance its engagement with key regional actors — Egypt, Iran, Israel, Qatar, Turkey, Saudi Arabia, and the UAE.
    - Orientation and interests of these countries are different and often in conflict.
  - **Shift in India's approach towards this region**
    - In the past, India's regional policy was framed in terms of contradictions between the West and the Middle East.
      - ❖ E.g., India's steps to manage the fallout of US-Iran tensions.
    - Today, Delhi pays attention to the region's internal contradictions.
      - ❖ E.g., India's stand on Iran – Israel issue, Israel-Palestine issue etc.
  - **Religion can't be the dominant factor in dealing with the Middle East**
    - India's call for de-escalation also underlines that religion and associated vote-bank politics can't be the dominant factor in dealing with the Middle East.
    - India's response must be based on the merits of the issue at hand.
  - **India's expanding footprints in the Middle East**
    - India's interests in the region are no longer limited to oil imports and labour exports.
    - The Gulf Arab states — especially Saudi Arabia and the UAE— have emerged as major economic and political partners for India.
    - Partnerships with Gulf Arab countries go beyond just two-way relationships and now have a broader impact across the Indian Ocean region.
    - These partnerships are crucial for making the India Middle East Europe Corridor (IMEC) a reality, which is currently a top priority for India's trans-regional agenda.
- **Conclusion**
  - The Middle East is a demanding region and dealing with it is not for the simple-minded or the faint-hearted. As a large neighbour with growing stakes in the Middle East, Delhi is fast learning to navigate the region's unending conflict.

5. What is 'Dragon's Egg' Nebula?
GS 3 (Science and Tech)

India 'seriously concerned' over Iran-Israel hostilities

New Delhi calls for immediate de-escalation and diplomatic measures between the two countries; External Affairs Ministry says Indian embassies are in close touch with Indian citizens in the region

Suhasini Haidar
NEW DELHI

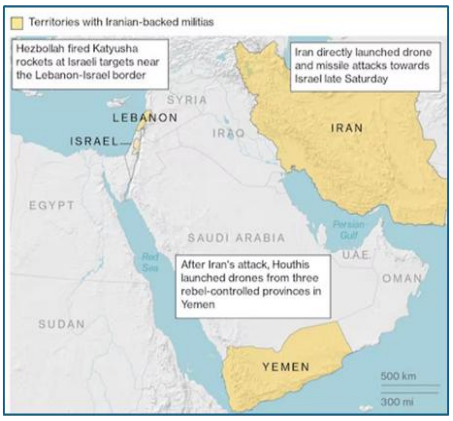
India on Sunday said it was "seriously concerned" by the escalation of hostilities in the Gulf region, and called for "immediate de-escalation" and diplomatic measures between Iran and Israel.
In a statement issued hours after Iran launched drone and missile strikes against Israel, the Ministry of External Affairs (MEA) said that Indian embassies in the region are in contact with Indian communities living there. Indian officials had already been in touch with the Iranian government about the safety of 17 Indians on board an Israel-linked ship *MSC Aries*, which was seized by Iranian forces on Saturday.
Meanwhile, the Indian Embassy in Tel Aviv issued a second advisory on Sunday, asking all Indians in the country to follow safety protocols, in light of the new tensions and the fears of more retaliatory strikes between Israel and Iran.
"We are seriously concerned at the escalation of hostilities between Israel and Iran which threatens the peace and security in the region. We call for immediate de-escalation, exercise of restraint, stepping back from violence and return to the path of diplomacy," the MEA said. "It is vital that security and stability are maintained in the region." It added that Indian embassies are in "close touch" with Indian citizens in the region, and that the government is monitoring developments closely.
Significantly, the MEA statement did not refer directly to the Iranian missile strikes in the region, which the Iranian government said were a reprisal for Israel's April 1 attack on Iran's embassy in Damascus, when seven Iranian military advisers, including three commanders, were killed. The Indian statement was distinctly different from statements by the United States and its allies, which pledged to defend Israel, and the UN Secretary-General, who pointedly condemned the Iranian strikes.
The more restrained statement from New Delhi indicates its need for balance, given the Modi government's attempts to deal equally with both Tehran and Jerusalem in the past few months. In particular, New Delhi's attention has been diverted to the issue of the 17 Indian sailors on board the *MSC Aries*, who have been taken into Iranian custody.
"We are focused on ensuring the security of Indians, including those on the ship that was detained," an official said on Sunday.
India has been focused on the issue of Indian expatriates across the region, as worries grow about a full-fledged conflict. While there are relatively fewer Indians in Iran (about 10,000) and Israel (about 18,000) at the moment, more than eight million Indians live and work across the Gulf region, and any escalation of tensions could affect all of them. With India issuing a travel advisory against any travel to Iran or Israel, as well as airspace closures, Air India cancelled its flight to Tel Aviv on Sunday.

Close watch: Israeli Air Force heavy lift military transport helicopters fly over the southern Negev desert on Sunday. AFP

- **Why in News:** The nebula NGC 6164/6165, also known as the Dragon's Egg, a cloud of gas and dust surrounding a pair of stars called HD 148937, have presented a puzzle to astronomers.
- **What is a Nebula?**
  - A nebula is a huge, expansive **cloud of gas and dust** that is found throughout the universe.
  - **This celestial formation comes in a variety of shapes, sizes, and colours**, each with its own unique characteristics and story to tell.
  - **At its core**, a nebula consists primarily of hydrogen and helium, the two most abundant elements in the universe.
    - These gases intermingle with traces of heavier elements, such as carbon, nitrogen and oxygen, which were forged in the hearts of ancient stars.
  - **A nebula serves as the birthplace of stars.**
    - Within this cosmic cloud, gravity works tirelessly to pull the gas and dust together, **slowly compressing the material into increasingly dense clumps**.
    - As these clumps grow in mass and density, their cores begin to heat up, eventually reaching temperatures high enough to ignite **nuclear fusion.**
    - **At this point, a new star is born**, illuminating the surrounding nebula with its intense radiation.
  - **A nebula plays a crucial role in the life cycle of stars and galaxies.**
    - As stars form within this cosmic cloud, they gradually deplete the surrounding gas and dust, using it as fuel for their nuclear reactions.

- Over millions or billions of years, the most massive stars explode as supernovae.

- **What is the Dragon's Egg Nebula?**
  - The Dragon's Egg Nebula **formed as a result of the intense stellar winds** emanating from a massive, hot central star.
  - **NGC 6164/6165 consists of two distinct regions:** NGC 6164, which represents the brighter, more compact area surrounding the central star, and NGC 6165, which extends outward in a series of complex filaments and bubbles.
  - These two regions work together to create the nebula's overall shape, which **resembles a dragon's egg** - hence its popular name.
  - The best views of NGC 6164/6165 come from powerful telescopes, such as the **Hubble Space Telescope** or the European Southern Observatory's **Very Large Telescope**.



- **Unique Features of the NGC 6164/6165:**
  - These two stars - gravitationally bound to each other in what is called a binary system - are **located in our Milky Way galaxy** about 3,700 light-years from Earth in the constellation Norma.
    - A light-year is the distance light travels in a year, 5.9 trillion miles (9.5 trillion km).
  - **One of them has a magnetic field (as does our sun), while its companion does not.**
  - The magnetic star is about 30 times more massive than the sun. Its remaining companion is about 26.5 times more massive than the sun.
  - They orbit at a distance from each other varying from seven to 60 times the distance between Earth and the sun.
- **Significance of the Dragon's Egg Nebula - A Window to Our Universe:**
  - The Dragon's Egg Nebula **serves as a reminder of the vastness and wonder of the universe**. It represents just one of countless cosmic marvels waiting to be discovered and understood.
  - As astronomers continue to study NGC 6164/6165 and other celestial objects, **they unlock the secrets of the cosmos** and expand our understanding of the fundamental processes that shape the universe.
  - Through the lens of the Dragon's Egg Nebula, **one can catch a glimpse of the intricate dance between stars, gas, and dust that plays out on a grand scale**.

NEELOFER CIVIL SERVICE CLASSES UPSC WITH NSCS DELHI IAS

16th April, 2024

1. India to get above-normal monsoon rainfall: IMD
GS 1 (Geography)

India to get above-normal monsoon rainfall: IMD

Jacob Koshy
NEW DELHI

While several States reel under heatwaves, the India Meteorological Department (IMD) has forecast a bountiful monsoon for the year. In a press briefing on Monday, the agency forecast that the rainfall in June-September will be 6% more than the annual average of 87 cm during these months.

Last year, El Nino – a warming of the Central Pacific and usually linked to diminished rainfall in India – dented India's monsoon by 6%. This year, the El Nino has not yet fully faded but is expected to do so by June and progress to La Nina, a converse cooling effect that is usually linked to surplus rainfall by the second half of the monsoon (August and September), said IMD Director-General Mrutunjay Mahapatra.

The IMD uses multiple approaches to forecast the monsoon. One is to use statistical associations and draw upon its vast historical database of over 150 years to correlate certain global meteorological parameters such as ocean temperatures and snow cover in Europe, to the performance of the monsoon. The other way is to use the dynamical approach, or simulating the weather across the globe on a particular day, and having powerful computers crunch the numbers to extrapolate this weather into any future day or time period desired. Both these models indicated a similar outlook for the monsoon this year, said M. Ravichandran, Secretary, Ministry of Earth Sciences.

The IMD is expected to update its monsoon forecast in May, just ahead of the monsoon onset in June, and give more information on spatial distribution.

CONTINUED ON » PAGE 10

Rain check

The long period average (LPA) of the southwest monsoon rainfall (June to September) from 1971 to 2020 is 87 cm

- This year, the IMD has predicted that the rainfall will be 106% of the LPA
- Rainfall over the country as a whole during June-September 2023 was 82 cm (94% of LPA)
- During June-September 2022, the rainfall was 93 cm (106% of LPA)

SOURCE: IMD

- **Why in News:** While several States reel under heatwaves, the India Meteorological Department (IMD) has forecast a bountiful monsoon for the year.
- **Key-highlights of the Forecast**
  - **Above-Normal Rainfall:** The IMD predicts that the rainfall in June-September will be 6% more than the annual average of 87 cm during these months.
  - **Impact of El Nino:** Last year, El Nino affected India's monsoon negatively by denting it by 6%. However, this year, the El Nino is expected to fade by June, progressing to La Nina, which usually results in surplus rainfall by the second half of the monsoon.
  - **Forecasting Methods:** The IMD utilizes statistical associations and a dynamical approach to forecast the monsoon. Both methods indicate a similar outlook for the monsoon this year.
  - **Updated Forecast:** The IMD is expected to update its monsoon forecast in May, just ahead of the monsoon onset in June, providing more information on spatial distribution.
  - **Factors Favoring Rainfall:** Positive Indian Ocean Dipole (IOD) and below-normal snow cover in the northern hemisphere and Eurasia are factors favoring plentiful rain in India.
- **Factors Influencing Monsoon Forecast**
  - **El Nino Impact:** Last year, El Nino dampened India's monsoon by 6%. However, this year, while El Nino has not fully faded, it is expected to transition to La Nina by June. La Nina typically brings surplus rainfall in the latter half of the monsoon season.
  - **Positive Indian Ocean Dipole (IOD):** A positive IOD, characterized by cooler than normal temperatures in the eastern Indian Ocean, is favorable for bringing rainfall to southern India. Although currently neutral, it is anticipated to turn positive by August, enhancing monsoon rainfall.
- **Dynamical Approach**
  - **Simulating Weather Patterns**: The dynamical approach involves simulating weather patterns across the globe and using powerful computers to extrapolate this weather into future time periods.
  - **Computational Modeling:** Sophisticated computational models are employed to simulate atmospheric conditions and predict weather phenomena, enhancing the accuracy of monsoon forecasts.
  - **Integration of Data Sources:** Data from various sources, including satellite observations, ground-based weather stations, and ocean buoys, are integrated into dynamical models to improve forecasting capabilities.
- **Implications for Agriculture and Economy**
  - **Importance of June and July:** June and July are critical months for agriculture, especially for the kharif crop, as a significant portion is planted during this period. Above-normal rainfall during these months can boost agricultural productivity and contribute to economic growth.
  - **Spatial Distribution:** IMD plans to provide updated forecasts in May, just before the onset of the monsoon season in June. These forecasts will offer insights into the spatial distribution of rainfall across different regions, aiding agricultural planning and water management.
  - **Potential for 'Excess' Rainfall:** The models suggest a 30% chance of rainfall exceeding 10%, categorized as 'excess' by IMD standards. Such abundant rainfall could have both positive and negative impacts, affecting agriculture, infrastructure, and flood management.
  - **Crop Planning:** Farmers rely on monsoon forecasts to plan their cropping patterns, irrigation schedules, and input procurement, ensuring optimal utilization of resources and maximizing yields.
  - **Risk Mitigation Strategies:** Access to accurate monsoon forecasts enables policymakers and agricultural stakeholders to implement risk mitigation strategies, such as crop insurance schemes and water management initiatives, to mitigate the impact of weather variability on agricultural livelihoods.
- **Monsoon Trough:**
  - A trough is a belt of **low pressure** extending to large area. This trough seen during monsoon period, hence known as Monsoon trough.
  - Monsoon trough is a part of the **Inter Tropical Convergence Zone (ITCZ)** where the northern hemisphere and southern hemisphere winds meet.

- This is normally shown as a line connecting the **location of monsoon** low pressure areas

2. EC pegs pre-poll seizure at Rs.4,650 cr.

GS 2 (Elections)

EC pegs pre-poll seizure at ₹4,650 cr.

Sreeparna Chakrabarty
NEW DELHI

The Election Commission (EC) on Monday said it was on track to seize the largest amount of inducements, including drugs and cash, during an election in the past 75 years. Even before the start of polling for the Lok Sabha election, it has seized ₹4,650 crore, an amount higher than that recovered in the 2019 election. Back then, the corresponding figure had been ₹3,475 crore.

The commission said in a statement that the ₹4,650 crore seized included drugs estimated at ₹2,069 crore, over ₹395 crore in cash and liquor estimated at more than ₹489 crore. Since March 1, the poll body has been seizing goods valued at ₹100 crore every day.

Approximately, 75% of the total seizures in January and February were of drugs.

"The seizures have been possible by comprehensive planning, scaled-up collaboration and unified deterrence action from agencies, proactive citizen participation and optimal engagement of technology," the statement said.

The EC said that the use of black money and excessive political financing could disturb the level playing field in favour of the more resourceful party or candidate.

CONTINUED ON » PAGE 10

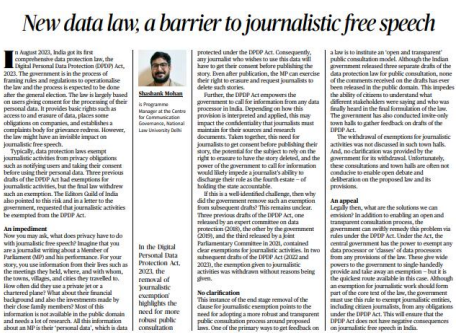
- **Why in News:** The Election Commission (EC) announced significant seizures of inducements, including drugs and cash, ahead of the elections, reflecting its commitment to ensuring electoral integrity.
- **Key-highlights of the Seizures**
  - **Record-Breaking Seizures:** The EC reported seizures amounting to Rs.4,650 crore, surpassing the figure recovered during the previous Lok Sabha election in 2019.
  - **Composition of Seized Items:** The seized amount includes drugs worth Rs.2,069 crore, cash exceeding ?395 crore, and liquor valued at more than ?489 crore, highlighting the diverse nature of inducements.
  - **Daily Seizure Rate:** Since March 1, the EC has been seizing goods worth ?100 crore every day, indicating proactive enforcement measures.
  - **Emphasis on Drug Seizures:** Approximately 75% of the total seizures in January and February comprised drugs, underscoring the EC's focus on combating the nexus between drugs and electoral malpractices.
- **Enforcement Efforts**
  - **Comprehensive Planning:** The EC attributed the successful seizures to comprehensive planning, collaborative efforts among agencies, proactive citizen participation, and optimal utilization of technology.
  - **Scaled-Up Collaboration:** Enhanced collaboration among law enforcement agencies, electoral authorities, and citizens facilitated efficient seizure operations, ensuring a robust response to electoral malpractices.
  - **Unified Deterrence Action:** Unified deterrence actions, backed by stringent enforcement measures, served as a deterrent against electoral misconduct, promoting a level playing field for all political stakeholders.
- **Electoral Integrity**
  - **Threat of Black Money:** The EC cautioned against the use of black money and excessive political financing, emphasizing its potential to skew the electoral process in favor of resourceful parties or candidates.
  - **Ensuring Level Playing Field:** The seizures underscored the EC's resolve to conduct elections free from inducements and malpractices, aiming to maintain a level playing field and uphold the integrity of the electoral process.
  - **Standard Procedures:** Standard procedures, such as the checking of helicopters carrying political leaders, were implemented to prevent inducements and ensure adherence to electoral guidelines, promoting transparency and fairness.
- **Mitigating Electoral Malpractices**
  - **Inducement-Free Polls:** The seizures were integral to the EC's efforts to conduct inducement-free polls, mitigating the influence of illegal inducements on electoral outcomes and preserving the sanctity of the electoral process.
  - **Level-Playing Field Assurance:** By actively curbing inducements and electoral malpractices, the EC reaffirmed its commitment to maintaining a level-playing field, fostering electoral competition based on merit and policy agendas.
  - **Standardized Checks:** Standardized checks, including helicopter searches, were conducted to uphold electoral integrity, ensuring adherence to electoral guidelines and deterring attempts to influence voters through inducements.

3. New data law, a barrier to journalistic free speech

GS 2 (Governance)

- **Why in News:** The Digital Personal Data Protection (DPDP) Act, 2023, introduced in India, raises concerns about its impact on journalistic free speech, particularly regarding the use of personal data for journalistic activities.
- **Implications for Journalistic Free Speech:**

- **Removal of Exemption:** Unlike previous drafts, the final DPDP Act does not exempt journalistic activities from privacy obligations, requiring journalists to obtain consent before using personal data for stories involving public figures like politicians.
- **Constraints on Investigative Reporting:** Journalists relying on private data for investigative reporting may face hurdles in accessing and using such information, impacting their ability to hold public figures accountable.
- **Government Authority and Confidentiality:** The Act grants the government the power to request information from data processors, potentially compromising the confidentiality of journalistic sources and research materials.


New data law, a barrier to journalistic free speech

Shashank Mohan

In August 2023, India got its first comprehensive data protection law, the Digital Personal Data Protection (DPDP) Act, 2023. The government is in the process of framing rules and regulations to operationalise the law and the process is expected to be done after the general election. The law is largely based on users giving consent for the processing of their personal data. It provides basic rights such as access to and erasure of data, places some obligations on companies, and establishes a complaints body for grievance redress. However, the law might have an invisible impact on journalistic free speech.

Typically, data protection laws exempt journalistic activities from privacy obligations such as notifying users and taking their consent before using their personal data. Three previous drafts of the DPDP Act had exemptions for journalistic activities, but the final law withdrew such an exemption. The Editors Guild of India also pointed to this risk and in a letter to the government, requested that journalistic activities be exempted from the DPDP Act.

An impediment

Now you may ask, what does privacy have to do with journalistic free speech? Imagine that you are a journalist writing about a Member of Parliament (MP) and his performance. For your story, you use information from their lives such as the meetings they held, where, and with whom, the towns, villages, and cities they travelled to, How often did they use a private jet or a chartered plane? What about their financial background and also the investments made by their close family members? Most of this information is not available in the public domain and needs a lot of research. All this information about an MP is their 'personal data', which is data protected under the DPDP Act. Consequently, any journalist who wishes to use this data will have to get their consent before publishing the story. Even after publication, the MP can exercise their right to erasure and request journalists to delete such stories.

Further, the DPDP Act empowers the government to call for information from any data processor in India. Depending on how this provision is interpreted and applied, this may impact the confidentiality that journalists must maintain for their sources and research documents. Taken together, this need for journalists to get consent before publishing their story, the potential for the subject to rely on the right to erasure to have the story deleted, and the power of the government to call for information would likely impede a journalist's ability to discharge their role as the fourth estate – of holding the state accountable.

If this is a well-identified challenge, then why did the government remove such an exemption from subsequent drafts? This remains unclear. These previous drafts of the DPDP Act, one released by an expert committee on data protection (2018), the other by the government (2019), and the third released by a joint Parliamentary Committee in 2020, contained clear exemptions for journalistic activities. In two subsequent drafts of the DPDP Act (2022 and 2023), the exemption given to journalistic activities was withdrawn without reasons being given.

In the Digital Personal Data Protection Act, 2023, the removal of journalistic exemption' highlights the need for more robust public consultation

No clarification

This instance of the end stage removal of the clause for journalistic exemption points to the need for adopting a more robust and transparent public consultation process around proposed laws. One of the primary ways to get feedback on a law is to institute an 'open and transparent' public consultation model. Although the Indian government released three separate drafts of the data protection law for public consultation, none of the comments received on the drafts has ever been released in the public domain. This impedes the ability of citizens to understand what different stakeholders were saying and who was finally heard in the final formulation of the law. The government has also conducted invite-only town halls to gather feedback on drafts of the DPDP Act.

The withdrawal of exemptions for journalistic activities was not discussed in such town halls. And, no clarification was provided by the government for its withdrawal. Unfortunately, these consultations and town halls are often not conducive to enable open debate and deliberation on the proposed law and its provisions.

An appeal

Legally then, what are the solutions we can envision? In addition to enabling an open and transparent consultation process, the government can swiftly remedy this problem via rules under the DPDP Act. Under the Act, the central government has the power to exempt any data processor or 'classes' of data processors from any provisions of the law. These give wide powers to the government to single handedly provide and take away an exemption – but it is the quickest route available in this case. Although an exemption for journalistic work should form part of the core text of the law, the government must use this rule to exempt journalistic entities, including citizen journalists, from any obligations under the DPDP Act. This will ensure that the DPDP Act does not have negative consequences on journalistic free speech in India.

- **Need for Transparent Consultation:**
  - **Lack of Transparency:** The absence of public disclosure regarding the removal of exemptions for journalistic activities from subsequent drafts of the DPDP Act highlights the need for a more transparent consultation process.
  - **Limited Public Engagement:** While the government conducted town halls and consultations on the drafts, crucial issues like journalistic exemptions were not adequately discussed, hindering meaningful public engagement.
  - **Call for Clarity:** There is a demand for the government to clarify the reasons behind the removal of exemptions and to engage in open debate and deliberation to address concerns regarding the impact of the DPDP Act on journalistic free speech.
- **Ensuring Journalistic Free Speech:**
  - **Government Intervention:** The government has the authority to provide exemptions under the DPDP Act, which could be utilized to safeguard journalistic entities from undue obligations, ensuring the Act does not curtail journalistic free speech.
  - **Incorporating Exemptions:** While exemptions for journalistic activities should ideally be included in the core text of the law, immediate action through rules under the Act can mitigate the negative impact on journalistic free speech.
  - **Empowering Journalistic Entities:** Exempting journalistic entities, including citizen journalists, from privacy obligations under the DPDP Act would uphold the principles of free speech and press freedom in India.

4. Operation Meghdoot

Recent events of importance

Siachen: 40 years of Op Meghdoot

- **Why in News:** The Indian Army recently commemorated 40 years since 'Operation Meghdoot' began for securing the Siachen Glacier.

- **About Operation Meghdoot:**
  - **It** was the code-name for the Indian Armed Forces operation to **capture the Siachen Glacier,** a strategically crucial region dominating Northern Ladakh.
  - Siachen has been a bone of contention between India and Pakistan ever since the **Karachi Agreement of 1949,** when the area was left undivided due to the hostile terrain and extremely rough weather.
  - Operation Meghdoot was India's bold **military response to** what New Delhi calls **Pakistan's "cartographic aggression"** in the uncharted territory of Ladakh, **north of map reference NJ9842,** where New Delhi and Islamabad had agreed the Line of Control (LoC) ran up to.
  - The **primary objective** behind this operation was to pre-empt the seizure of Sia La and Bilafond La passes by the Pakistan Army.
  - Launched on April 13, 1984, this military operation was unique as the first assault launched on the **world's highest battlefield.**
  - It is distinguished by being one of the greatest examples of seamless coordination and synergy between the Indian Army and the Air Force. The military action **resulted in Indian troops gaining control of** the **entire Siachen Glacier.**
  - **Strategic Importance of the Siachen:**
    - Located at a height of around **20,000 feet** in the **Karakoram Mountain range**, the Siachen Glacier is known as the **highest militarised zone** around the world.
    - It is located so strategically that while it **dominates Shaksgam Valley** (ceded to China by Pakistan in 1963) in the north, controls the routes coming from Gilgit Baltistan to Leh from the west, and at the same time, it dominates the ancient Karakoram Pass in the eastern side too.
    - Further, towards the west, it **observes nearly the entire of the Gilgit Baltistan**, which too is an Indian territory illegally occupied by Pakistan in 1948.

5. WholeSale Price Inflation
GS 3 (Economy)

- **Why in News:** India's wholesale price inflation quickened to a three-month high of 0.53% in March from 0.2% in February, with the food index rising 4.65%.
- **About WPI**
  - A wholesale price index (WPI) measures change in the overall price of goods before they are sold at retail.
  - This includes the prices charged by manufacturers and, often outside the U.S., wholesalers.
  - Usually expressed in terms of the percentage change from the prior month or a year earlier, the WPI is an inflation indicator.
  - Wholesale price indexes are reported monthly to track the overall rate of change in producer and wholesale prices.
  - The index is set at 100 for its base period, and calculated based on subsequent price changes for the aggregate output of goods.

March wholesale price inflation quickens to 3-month high of 0.53%

Global spikes in crude oil and commodity prices, and summer heat waves could accelerate the pace of inflation at the wholesale level in this quarter, say economists; the food index logged inflation of 4.65% last month led by cereal prices

Vikas Dhoot
NEW DELHI

Food price pressures

The food index in the WPI rose 4.65% last month led by cereal prices, which surged at a 13-month high pace of 9.04%

- March wholesale inflation accelerated in paddy (11.7%), potato (53%) and onions (57%)
- Inflation in pulses and vegetables stayed elevated at 17.2% and 19.5%, respectively
- Month-on-month, the WPI rose 0.4% • the first uptick in four months

Wholesale price inflation quickened to a three-month high of 0.53% in March, from February's 0.2%, with the food index rising 4.65%, led by cereal prices surging at a 12-month high pace of 9.04%, even as inflation in paddy (11.7%), potato (53%) and onions (57%) accelerated.

Inflation in pulses and vegetables stayed elevated at 17.2% and 19.5%, respectively, as per the Wholesale Price Index (WPI).

Fuel and power, as well as manufactured products, continued to be in deflation mode, though the level of price declines narrowed to about -0.8% for both categories in March.

Month-on-month, the WPI rose 0.4% – the first uptick in four months, with the food index up 1.01% and primary articles rising 0.9%. Manufactured products and fuel and power saw gains of 0.21% and 0.06%, respectively.

Within food articles, there was some relief from eggs, meat and fish, whose prices shrank 1.86%. This was in contrast to retail prices, which rose more than 10% for eggs, and over 6% for meat and fish, last month. Milk inflation eased to 4.7%, from February's 5.5%, but the pace of price rise in wheat accelerated sharply from 2.34% in February, to 7.43%.

For the full year, wholesale prices logged deflation, averaging -0.7%.

"International commodity prices are showing signs of increased pressure," said Bank of Baroda economist Sonal Badhan. "Going ahead, continued escalation in international crude oil prices, heat wave conditions impacting electricity demand and vegetable inflation, remain key causes of concern," she added.

- **How does it indicate Inflation? (WPI vs. CPI)**
  - A wholesale price index (WPI) is a measure of inflation based on the prices of goods before they reach consumers.
  - It includes price rise in food, fuel and all other commodities. The inflation rate expressed in Wholesale Price Index (WPI) usually denotes the 'headline inflation'.
  - Though Consumer Price Index (CPI) values are often higher, WPI values traditionally make headlines.
  - WPI tracks inflation at the producer level and CPI captures changes in prices levels at the consumer level. WPI does not capture changes in the prices of services, which CPI does.
  - The WPI is dominated by the prices of manufactured goods while the CPI is dominated by the prices of food articles.
  - As such, broadly speaking, if food prices go up sharply, it will bump up the retail inflation rate far more than it would spike the wholesale inflation rate. The reverse will happen when prices of manufactured products (such as TVs and cars) rise sharply.

SECTOR-WISE SHARES OF GVA & WORKFORCE: 2022-23 (%)

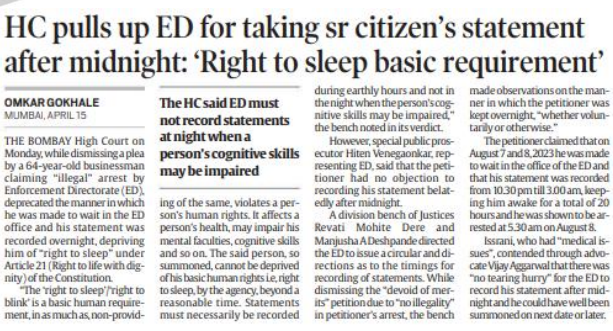
	Gross Value Added*		Workforce	
	All-India	Tamil Nadu	All-India	Tamil Nadu
Agriculture	18.19	12.55	45.76	28.87
Industry**	18.80	22.69	12.27	17.88
Construction	8.84	11.70	13.03	18.04
Services	54.18	53.05	28.94	35.21

*At Basic Prices; **Includes manufacturing, mining, electricity and utilities. GVA is GDP net of product taxes and subsidies. Source: National Accounts Statistics and Periodic Labour Force Survey.

- **Imported Inflation**
  - Imported inflation is a general and sustainable **price increase** due to an **increase in costs of imported products.**
- **Bearish expectations**
  - A **negative outlook** on business activity for a future period of time.
  - A bearish market points to an **expectation that the prices will go down**

6. What is the Scope of Right to Sleep under the Indian Constitution?
GS 2 (Constitution)

- **Why in News:** According to the Bombay HC, the 'right to sleep' / 'right to blink' is a basic human requirement, in as much as, non-providing of the same, violates a person's human rights.
- **What are the Observations Made by the Bombay HC?**
  - While dismissing a plea by a 64-year-old businessman claiming 'illegal' arrest by ED, **the HC criticised the manner in which his statement was recorded in the ED office overnight.** This deprived him of **'right to sleep' under Article 21** (Right to life with dignity) of the Constitution. Deprivation of sleep **may affect a person's health**, impair his mental faculties, cognitive skills, etc.
- **What is the Scope of Right to Sleep under the Indian Constitution?**
  - The right to sleep is **encompassed as a fundamental right under Article 21.** This means, nobody can infringe on others' right to sleep in a peaceful atmosphere at night. However, the right to sleep is an implied right, **it has some restrictions** like place of sleep, time of sleep, and manner of sleep. Nobody can do any unreasonable acts, like sleeping during the day, sleeping naked, sleeping in public places, etc.



HC pulls up ED for taking sr citizen's statement after midnight: 'Right to sleep basic requirement'

OMKAR GOKHALE
MUMBAI, APRIL 15

THE BOMBAY High Court on Monday, while dismissing a plea by a 64-year-old businessman claiming "illegal" arrest by Enforcement Directorate (ED), deprecated the manner in which he was made to wait in the ED office and his statement was recorded overnight, depriving him of "right to sleep" under Article 21 ('Right to life with dignity') of the Constitution.

"The 'right to sleep'/'right to blink' is a basic human requirement, in as much as, non-providing of the same, violates a person's human rights. It affects a person's health, may impair his mental faculties, cognitive skills and so on. The said person, so summoned, cannot be deprived of his basic human rights i.e. right to sleep, by the agency, beyond a reasonable time. Statements must necessarily be recorded during earthly hours and not in the night when the person's cognitive skills may be impaired," the bench noted in its verdict.

The HC said ED must not record statements at night when a person's cognitive skills may be impaired

However, special public prosecutor Hiten Venegaonkar, representing ED, said that the petitioner had no objection to recording his statement belatedly after midnight.

A division bench of Justices Revati Mohite Dere and Manjusha A Deshpande directed the ED to issue a circular and directions as to the timings for recording of statements. While dismissing the "devoid of merits" petition due to "no illegality" in petitioner's arrest, the bench made observations on the manner in which the petitioner was kept overnight, "whether voluntarily or otherwise."

The petitioner claimed that on August 7 and 8, 2023 he was made to wait in the office of the ED and that his statement was recorded from 10.30 pm till 3.00 am, keeping him awake for a total of 20 hours and he was shown to be arrested at 5.30 am on August 8.

Issrani, who had "medical issues", contended through advocate Vijay Aggarwal that there was "no tearing hurry" for the ED to record his statement after midnight and he could have well been summoned on next date or later.

- **What are the Landmark Cases that Led to the Introduction of Right to Sleep as a Fundamental Right?**
  - **Sayeed Maqsood Ali vs. State of Madhya Pradesh (2001):** The Madhya Pradesh HC ruled that every citizen is entitled under Article 21 of the Constitution to live in a decent environment and has the right to sleep peacefully at night.

- **Re-Ramlila Maidan Incident vs. Home Secretary (2012):** The SC ruled that sound sleep is associated with sound health, which is an inseparable facet of Article 21. It is an unavoidable right of the Indian Constitution.

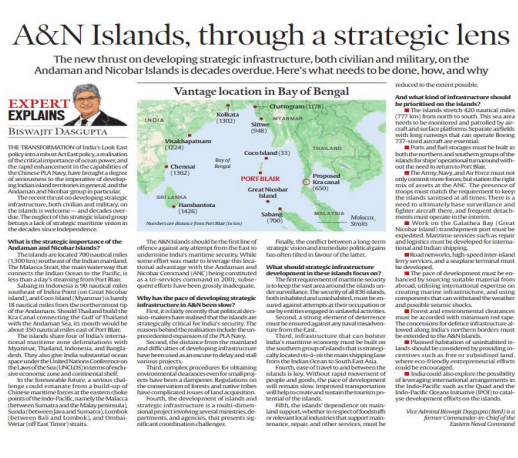
7. Tamil Nadu's Decentralized Industrialization Model
GS 2 (Governance)

- **Why in News:** Tamil Nadu (TN) is India's No.1 state in terms of economic complexity, measured by the diversity of its gross domestic product (GDP) and employment profile.
- **The Data**
  - TNs lower dependence on agriculture is matched by the higher shares of industry, services and construction in its economy relative to all-India. About 45.3% of TN's farm GVA comes from livestock subsector (the highest) which surpasses all-India average of 30.2%. It is home to India's largest private dairy company (Hatsun Agro Product), broiler enterprise (Suguna Foods), egg processor (SKM Group) and "egg capital" (Namakkal).
- **Factors Contributing to TNs Economic Transformation**
  - **Cluster-based Industrialization**: Medium-scale businesses (with Rs 100 crore to Rs 5,000 crore turnover) are driving TN's economic transformation. Industrialization here has been more spread out and decentralized, via development of clusters. Some of the clusters- agglomerations of firms specializing in particular industries are well known like Tirupur for cotton knitwear; Coimbatore for spinning mills and engineering goods. Most of these are in small urban/peri-urban centres, providing employment to people from surrounding villages, creating diversification options outside agriculture, reducing the proportion of TN's workforce dependent on farming. For example, Tirupur's knitwear industry alone today employs some 800,000 people, including migrants from Uttar Pradesh, Bihar, Jharkhand, Odisha, Assam and other states.
  - **Entrepreneurship from below:** The decentralized industrialization is being driven by entrepreneurs from more ordinary peasant stock and provincial mercantile castes. Many of which have created successful brands like Hatsun ('Arun' ice-cream and 'Arokya' milk). TN's entrepreneurial culture consists of diverse communities like Christians (MRF, Johnson Lifts and Aachi Masala Foods) and Muslims (Farida Group). "Entrepreneurship from below" combined with TNs high social progress indices from public health and education investments probably explains TN's relative success in achieving industrialization and diversification beyond agriculture.

8. The Hush Money Payment Case
GS 2 (International events of importance)

- **Why in News:** Donald Trump became the first former US President to face a criminal trial over hush money payments to suppress accounts of his alleged extramarital affairs.
- **What is the Hush Money Payment Case?**
  - It is related to a payment made to Daniels in2016, during the final weeks of the presidential campaign by Trump's then-lawyer Michael Cohen in exchange to silence Ms. Daniels about her encounter with Trump in 2006. The payment was funded through a home equity line of credit and was reimbursed later by Trump's company. Cohen had testified that Trump and his company falsely classified the payments by labelling them as legal expenses.
- **What is Trump accused of doing?**
  - He is charged with 34 felony counts for falsifying business records related to a "catch-and-kill" scheme to suppress negative news stories about him ahead of the 2016 election.
- **What laws has Trump broken?**
  - Making a false entry in a company's records is against New York state law. Falsifying business records on its own is a misdemeanour, but it can be elevated to a felony if prosecutors prove that records were falsified to conceal another crime. In this case, the other crimes include violation of election law as the payout to Ms. Daniels initially served as a donation to Mr. Trump's campaign.
- **What is the maximum sentence if Trump is convicted?**
  - All the charges against Trump are Class E felonies- the lowest category in New York. Each of the 34 felony counts carries a maximum prison sentence of 4years. But it isn't necessary that Trump would be imprisoned even if he is convicted by a jury. As per a NYT report, there is nothing in the law that provides for imprisonment, Trump could be sentenced to probation.

9. The Strategic Importance of Andaman and Nicobar Islands
GS 2 (Security)



- **Why in News:**
  - The recent thrust on developing strategic infrastructure, both civilian and military, on the Andaman and Nicobar (A&N) islands is welcome and decades overdue.
  - The way this important group of islands has been neglected during the decades following Independence indicates a lack of strategic maritime vision.
- **Strategic Location of the A&N Islands:**
  - The islands are **located 700 nautical miles (1,300 km) southeast** of the Indian mainland.
  - **The Malacca Strait,** the main waterway that connects the Indian Ocean to the Pacific, is less than a day's steaming from Port Blair.
  - **Sabang in Indonesia is 90 nautical miles** southeast of Indira Point (on Great Nicobar island), and **Coco Island** (Myanmar) is barely 18 nautical miles from the northernmost tip of the Andamans.
  - **The mouth of the Kra Canal** (to be built by Thailand to connect the Gulf of Thailand with the Andaman Sea) would be located roughly 350 nautical miles east of Port Blair.
  - The islands **share four of India's international maritime zonedelimitations** with Myanmar, Thailand, Indonesia and Bangladesh.

- They also give India substantial ocean space under the United Nations Conference on the Laws of the Sea (**UNCLOS**) in terms of exclusive economic zone and continental shelf.

- **What is the Strategic Significance of the A&N Islands?**
  - The following has brought a degree of seriousness to the imperative of developing the A&N group of Islands –
    - The transformation of India's Look East policy into a robust **Act East policy**,
    - A realisation of the critical importance of **ocean power**, an
    - The rapid enhancement in the capabilities of the **Chinese PLA Navy**.
  - In the foreseeable future, a serious challenge could emanate from **a build-up of Chinese maritime forces at the eastern choke points of the Indo-Pacific**, namely
    - The Malacca (between Sumatra and the Malay peninsula),
    - Sunda (between Java and Sumatra),
    - Lombok (between Bali and Lombok), and
    - Ombai-Wetar (off East Timor) straits.
  - The A&N Islands should be the **first line of offence** against any attempt from the East to undermine India's maritime security.
  - While some effort was made to leverage this locational advantage with the A&N Command (ANC) being constituted as a tri-services command in 2001, subsequent efforts have been grossly inadequate.
- **Why has the Pace of Developing Strategic Infrastructure in A&N Been Slow?**
  - **Non-realisation of strategic importance for India's security:** Political decision-makers have very recently realised how vitally important the islands are. This is because of the PLA Navy's unprecedented expansion.
  - **The distance from the mainland:** It has been used as an excuse to delay and stall various projects.
  - **Complex procedures for obtaining environmental clearances:** Regulations on the conservation of forests and native tribes have complicated issues of land acquisition.
  - **Coordination challenges:** The development of islands and strategic infrastructure is a multi-dimensional project involving several ministries, departments, and agencies.
  - **Not a political issue:** The conflict between a long-term strategic vision and immediate political gains has often tilted in favour of the latter.
- **What Should Strategic Infrastructure Development in these Islands Focus On?**
  - **Maritime security:** The security of all 836 islands, both inhabited and uninhabited, must be ensured against attempts at their occupation or use by entities engaged in unlawful activities.
  - **A strong element of deterrence:** It must be ensured against any naval misadventure from the East
  - **Bolster India's maritime economy:** Infrastructure must be built on the southern group of islands that is strategically located vis-à-vis the main shipping lane from the Indian Ocean to South East Asia.
  - **Ease of travel to and between the islands**: Improved transportation will help to create and sustain the tourism potential of the islands.
  - **Islands' dependence on mainland support must be reduced:** In respect of foodstuffs or relevant local industries that support maintenance, repair, and other services.
- **What Kind of Infrastructure should be Prioritised on the Islands?**
  - This sea area needs to be monitored and patrolled by aircraft and surface platforms.
  - **Separate airfields** with long runways that can operate Boeing 737-sized aircraft are essential.
  - **Ports and fuel storages** must be built in both the northern and southern groups of the islands for ships' operational turnaround without the need to return to Port Blair.
  - **The Army, Navy, and Air Force** must not only commit more forces, but station the right mix of assets at the ANC. There is a need to base surveillance and fighter aircraft there.
  - **Work on the Galathea Bay** (Great Nicobar Island) transhipment port must be expedited.
  - India could also explore the possibility of leveraging international arrangements in the Indo-Pacific such as the **Quad** and the Indo-Pacific Oceans Initiative (**IPOI**) to catalyse development efforts on the islands.

10. <u>Swiss women win landmark climate change case</u>
<u>GS 2 (International events of importance)</u>

- **Why in News:**
  - Recently, Europe's highest human rights court sided with a group of 2,000 Swiss women. These women had sued their government for violating their human rights by failing to do enough to combat the adverse effects of climate change.
  - The landmark ruling by the European Court of Human Rights (ECHR) might change how courts in Europe and other places handle cases where people say climate change hurts their rights.
  - This is significant as the verdict has come just days after the Supreme Court of India expanded the scope of **Articles 14** (right to equality) and **21** (protection of life and personal liberty). SC said that people have a right to be free from the adverse effects of climate change.

How 2,000 senior women from Switzerland won a landmark climate case

ALIND CHAUHAN
NEW DELHI, APRIL 15

THREE DAYS after a three-judge Bench led by Chief Justice of India D Y Chandrachud said people have a "right to be free from the adverse effects of climate change", Europe's highest human rights court on April 9 ruled with a group of 2,000 senior Swiss women who had sued their government for violating their human rights by failing to do enough to combat the adverse effects of climate change.

The landmark ruling, which is the first of its kind, by the European Court of Human Rights (ECHR) has opened the way for future plaintiffs to sue their governments for better climate protection.

What was the case in Europe?

The case was brought against Switzerland by 'Klimaseniorinnen Schweiz Association of Senior Women for Climate Protection Switzerland), a group of women climate activists all above the age of 64, in November 2016. The women claimed that the Swiss government's inadequate climate policies violated their rights to life and other guarantees under the European Convention on Human Rights. The convention is an international agreement to protect human rights and political freedoms in Europe.

The petitioners built their case by partly relying on their medical vulnerability as senior citizens to extreme heat caused by climate change. They cited the reports by the Intergovernmental Panel on Climate Change (IPCC), a UN body that assesses the science related to climate change.

The reports show that senior Swiss women — especially those over 75 — are more prone to heat-related medical problems such as heat cramps and heat strokes.

What did the court say?

A 17-judge panel of ECHR noted that Article 8 of the convention "encompasses a right for individuals to effective protection by the state authorities from the serious adverse effects of climate change on their lives, health, well-being and quality of life".

The Swiss government, however, violated the law as it did not enact adequate laws to combat climate change impacts, according to the court. It also failed to meet its greenhouse gas (GHG) emission reduction goals.

EXPLAINED LAW

Why is the ruling significant?

The Swiss government is now obliged to update its climate change policies. However, the ECHR cannot tell authorities what kind of policies to implement.

Nonetheless, the judgment could have far-reaching implications. The ECHR's verdict is applicable in 46 member states, including all of the EU, plus the UK and various other non-EU countries. This means that any climate and human rights case brought before a judge in Europe's national courts will now have to consider ECHR's judgment in whatever decision they make. It may also encourage citizens and communities in the similar cases in countries that are party to the European Convention on Human Rights.

"The decision affirms that European Human Rights law... requires governments to pursue a high level of climate ambition," Michael Burger, executive director of the Sabin Center for Climate Change Law at Columbia University, told Vox.

What about other climate litigation?

There is a recent rising tide of climate litigation — a form of legal action that is being used to hold countries and companies accountable for their climate mitigation efforts and historical contributions to climate change — in many countries.

As of December 2022, 2,180 climate-related cases have been filed in 65 jurisdictions, including international and regional courts, tribunals, quasi-judicial bodies, or other adjudicatory bodies across the world, according to the Global Climate Litigation Report: 2023 Status Review. This is a large increase from 884 cases in 2017 and 1,550 in 2020.

In India, a 9-year-old girl from Uttarakhand approached the National Green Tribunal in 2017, arguing that the Public Trust Doctrine, India's commitments under the Paris Agreement, and India's existing environmental laws and climate-related policies oblige greater action to mitigate climate change. Her petition, however, was rejected.

- **European Court of Human Rights (ECHR)**
  - **About**
    - ECHR is an international court that interprets the European Convention on Human Rights.
    - It was established in 1959 and is based in Strasbourg, France.
    - It consists of a number of judges equal to the number of member States of the **Council of Europe** that have ratified the Convention for the Protection of Human Rights and Fundamental Freedoms – **currently 46**.
  - **Functions**
    - The ECHR rules on applications from individuals, groups of individuals, or other contracting states that allege violations of the European Convention on Human Rights.
      - ❖ The Convention primarily concerns civil and political rights
    - The court can issue judgments and advisory opinions.
- **About the case**
  - The case was brought against Switzerland by Klima Seniorinnen Schweiz (Association of Senior Women for Climate Protection Switzerland) in November 2016.
    - It is a group of women climate activists all above the age of 64

- The women claimed that the Swiss government's inadequate climate policies violate their right to life and other guarantees under the European Convention on Human Rights.
  - The convention is an international agreement to protect human rights and political freedoms in Europe.
- They built their case by partly relying on their medical vulnerability as senior citizens to extreme heat caused by climate change.
  - They cited the reports by the Intergovernmental Panel on Climate Change (IPCC) — a United Nations body which assesses the science related to climate change.

- **Verdict given by ECHR**
  - Highlighted Article 8 of the European Convention on Human Rights
    - The ECHR noted that Article 8 of the convention, encompasses a right for individuals to effective protection by the state authorities from the serious adverse effects of climate change on their lives, health, well-being and quality of life.
  - **Failure of Swiss government**
    - The Swiss government violated the law as it did not enact adequate laws to combat climate change impacts.
    - It also failed to meet greenhouse gas (GHG) emission goals.
    - Hence, it is clear that future generations are likely to bear an increasingly severe burden of the consequences of present failures and omissions to combat climate change.
- **Significance of this ruling**
  - **Obligations of Swiss Government**
    - The Swiss government is now obliged to update its climate change policies but the ECHR cannot tell authorities what kind of policies to implement.
  - **Verdict is applicable in member states**
    - The ECHR's verdict is applicable in 46 member states, including all the European Union (EU), plus the United Kingdom (UK) and various other non-EU countries.
    - This means that any climate and human rights case brought before a judge in Europe's national courts will now have to consider ECHR's judgment.
  - **Empowers citizens and communities**
    - To file similar cases in countries that are party to the European Convention on Human Rights.
- **Rise in climate litigation across the globe**
  - Recently, there has been an increase in climate litigation — a form of legal action that is being used to hold countries and companies accountable for their climate mitigation efforts and historical contributions to climate change.
  - As per a report, as of December 2022, there have been 2,180 climate-related cases filed in 65 jurisdictions.
  - Children and youth, women's groups, local communities, and Indigenous Peoples, among others, are taking a prominent role in bringing these cases.

17th April, 2024

1. How can the Process of Voting be Made More Robust
GS 2 (Elections)

Reforms needed in the voting process

When were Electronic Voting Machines (EVMs) first introduced? What have been the concerns raised by activists about EVMs? What are the voting practices in other countries? How can the process of voting be made more robust?

- **Why in News:** The Supreme Court has decided to hear petitions seeking 100% cross-verification of the Voter Verifiable Paper Audit Trail (VVPAT) slips with the vote count as per Electronic Voting Machines (EVMs).
- **What is the History of the Voting Process?**
  - **First two general elections of 1952 and 1957:** A separate box was placed for each candidate with their election symbol. Voters had to drop a blank ballot paper into the box of the candidate whom they wanted to vote for.
  - **Third general elections:** From the third election, the ballot paper with names of candidates and their symbols was introduced with voters putting a stamp on the candidate of their choice.
  - **Introduction of the EVM:** It was introduced on a **trial basis in 1982** in the Assembly constituency of Paravur in Kerala.
    - They were deployed in all booths during the Assembly elections of Tamil Nadu, Kerala, Puducherry and West Bengal in **2001**.
    - In the **2004** general elections to the Lok Sabha, EVMs were used in all 543 constituencies.
  - **Introduction of the VVPAT:** In Subramanian Swamy versus Election Commission of India (2013), the SC ruled that a paper trail is an indispensable requirement for free and fair elections.
    - The **2019** general elections had EVMs backed with 100% VVPAT in all constituencies
- **What are the International Voting Practices?**
  - **Many western democracies continue to have paper ballots for their elections**.
    - Countries like **England, France, The Netherlands and the U.S.** have discontinued the use of EVMs, for national or federal elections, after trials in the last two decades.
    - In **Germany**, the Supreme Court of the country declared the use of EVMs in elections as unconstitutional in 2009.
    - Some countries like **Brazil**, however, use EVMs for their elections. Among India's neighbours,
      - **Pakistan** does not use EVMs.
      - **Bangladesh** experimented in a few constituencies in 2018 but reverted to paper ballots for the general elections in 2024.
- **What are the Features of EVMs?**
  - **Benefits:**
    - The EVM has virtually **eradicated booth capturing** by limiting the rate of vote casting to **four votes a minute** and thus significantly increasing the time required for stuffing false votes.
    - **Invalid votes** that were a bane of paper ballots and also a bone of contention during the counting process have been **eliminated** through EVMs.
    - Considering the size of the electorate in India which is close to one billion, the use of EVMs is **eco-friendly** as it reduces the consumption of paper.
    - **It provides administrative convenience** for the polling officers on the day of the poll and has made the **counting process faster and error-free**.
  - **Mechanisms to uphold the integrity of EVM and VVPAT process:** These include –
    - **Random allocation** of EVMs to booths before polls;
    - Conduct of a **mock poll** to display the correctness of EVMs and VVPAT before commencement of the actual poll; and
    - The **serial number of EVMs along with total votes polled** was shared with agents of candidates to verify the same at the time of counting of votes.
  - **Doubts raised about the functioning of EVMs:**
    - The most repeated allegation is that EVMs are **susceptible to hacking** as it is an electronic device
    - **The sample size for matching** of the EVM count with VVPAT slips at present is 5 per assembly constituency/segment. This is **not based on any scientific criteria** and may fail to detect defective EVMs during counting.
    - The present process also **allows for booth-wise polling behaviour** to be identified by various parties that can result in **profiling and intimidation**.
  - **Clarification given by the ECI:** EVMs are standalone devices like a calculator with no connectivity to any external device and hence free from any kind of external hack.
- **Way Forward to Make Process of Voting More Robust:**
  - **The sample for matching of EVM count and VVPAT slips** should be decided in a **scientific manner**. 100% match of EVM count with VVPAT slips would be unscientific and cumbersome.
    - **In case of even a single error,** the VVPAT slips should be counted fully for the concerned region and form the basis for results.
    - This would **instil a statistically significant confidence** in the counting process.
  - In order to provide a degree of cover for voters at the booth level, **'totaliser'** machines can be introduced that would aggregate votes in 15-20 EVMs before revealing the candidate-wise count

2. Why has India Allowed FIIs to Invest in Green Bonds?
GS 3 (Economy)

Why has India allowed FIIs to invest in its green bonds?

What are Sovereign Green Bonds? How will investments by Foreign Institutional Investors in green government securities accelerate India's transition to a green economy?

Kunal Shankar

The story so far:
On April 5 the Reserve Bank of India (RBI) green lighted investments in the country's Sovereign Green Bonds (SGrBs) by Foreign Institutional Investors (FIIS) – investors such as insurance companies, pension funds and nation-states' sovereign wealth funds. SGrBs are a kind of government debt that specifically funds projects attempting to accelerate India's transition to a low carbon economy.

How does it help in green transition?
Allowing FIIs to invest in India's green projects widens the pool of capital available to fund the country's ambitious 2070 net zero goals, ensuring 50% of India's energy comes from non-fossil fuel based sources and to reduce the carbon intensity of the nation's economy by 45%, as pledged by Prime Minister Narendra Modi at COP26 in Glasgow 2021.

The RBI had issued SGrBs worth ₹16,000 crore in two tranches in January and February last year with maturities in 2028 and 2033. While in both instances the bonds were oversubscribed, the main participants were domestic financial institutions and banks, narrowing the avenues from where the government could borrow. Moreover, these green Government-Securities (G-Secs) were classified under the Statutory Liquidity Ratio (SLR), a liquidity rate fixed by the RBI that financial institutions must maintain with themselves before they lend to their customers.

SGrBs yield lower interest than conventional G-Secs, and the amount foregone by a bank by investing in them is called a greenium. But central banks and governments the world over are encouraging financial institutions to embrace greeniums to hasten the transition to a greener future. Climate finance experts believe India would gain from allowing FIIs in green G-Secs. They say FIIs are also looking to diversify their pool of green investments, as there is considerable regulatory support particularly in developed countries. And so this is an opportunity for them to invest in India's green g-secs. Ashim Roy, Energy Finance lead at World Resources Institute, India said FIIs might also be looking to gain green credentials when such investments may not be available in their home markets, and because India has successfully addressed greenwashing fears with the Sovereign Green Bonds Framework in late 2022.

What is the green taxonomy gap?
In the 2022-23 Union Budget, Finance Minister Nirmala Sitharaman announced the government's decision to issue SGrBs to accelerate funding government projects such as harnessing offshore wind, grid-scale solar power production, or encouraging the transition to battery operated Electric Vehicles (EVs). But the RBI had not created a green taxonomy, or a way to assess an investment's environmental, or emissions credentials to ensure the project is not an attempt at greenwashing, that is, faking green credentials to secure funding.

To address this gap, the Finance Ministry released India's first SGrB Framework on November 9, 2022 detailing the kind of projects that would receive funding through this class of G-Secs. These included "investments in solar/wind/biomass/hydropower energy projects (under 25 MW) that integrate energy generation and storage; supporting public lighting improvements (e.g. replacement with LEDs); supporting construction of new low-carbon buildings as well as energy-efficiency retrofits to existing buildings; projects to reduce electricity grid losses." The list goes on to include promoting public transport, subsidies to adopt EVs and building charging infrastructure. The government also sought Norway-based validator Cicero's opinion comparing India's SGrB Framework with International Capital Market Association's (ICMA's) green principles. Cicero rated India's framework as "green medium" with a score of "good governance". WRI's Ashim Roy said, "it would be crucial to identify new green projects with credible audit trails and high impact to optimally deploy the proceeds, especially ones that has received limited private capital like Distributed Renewable Energy and clean energy transition finance for MSMEs."

THE GIST

Allowing FIIs to invest in India's green projects widens the pool of capital available to fund the country's ambitious 2070 net zero goals.

In the 2022-23 Union Budget, Finance Minister Nirmala Sitharaman announced the government's decision to issue SGrBs to accelerate funding government projects such as harnessing offshore wind, grid-scale solar power production, or encouraging the transition to battery operated Electric Vehicles.

The RBI had issued SGrBs worth ₹16,000 crore in two tranches in January and February last year with maturities in 2028 and 2033.

- **Why in News:** On April 5 the Reserve Bank of India (RBI) green lighted investments in the country's Sovereign Green Bonds (SGrBs) by Foreign Institutional Investors (FIIS).
- **What are Foreign Institutional Investors (FIIs)?**
  - Foreign Institutional Investors (FIIs) are **organizations or entities that invest money in the financial markets of a country other than their own**.
  - These investors can include pension funds, mutual funds, insurance companies, banks, and other large financial institutions from foreign countries.
  - FIIs play a significant role in the financial markets of a country by providing liquidity, increasing trading volumes, and influencing stock prices.
  - They invest in a range of financial instruments, including stocks, bonds, and derivatives, based on their investment strategies and market outlook.
  - The inflow of funds from FIIs can have both positive and negative impacts on the local economy, depending on various factors such as market conditions, government policies, and global economic trends.

- Investments by FIIs in India are **regulated by the Securities and Exchange Board of India (SEBI)** while the ceilings on such investments are maintained by the Reserve Bank of India (RBI).

- **What are Green Bonds?**
  - Green bonds are **issued by companies, countries and multilateral organisations to exclusively fund projects that have positive environmental or climate benefits and provide investors with fixed income payments**.
  - The projects can include renewable energy, clean transportation and green buildings, among others.
- **Example of Green Bonds:**
  - The World Bank is a major issuer of green bonds and issued **$14.4 billion of green bonds between 2008 and 2020**.
  - These funds have been used to support 111 projects around the world, largely in renewable energy and efficiency (33%), clean transportation (27%), and agriculture and land use (15%).
  - By the end of 2020, **24 national governments had issued Sovereign Green, Social and Sustainability bonds totalling a cumulative $111 billion.**
- **India's Sovereign Green Bonds Framework:**
  - First announced in the Union Budget 2022-23, the proceeds of these green bonds will be issued for mobilising resources for green infrastructure.
  - **Aim - To mobilise Rs 16,000 crore through the issuance of green bonds in the current fiscal ending March 2023**.
  - Under the framework, the **Finance Ministry will, every year, inform the RBI about spending on green projects for which the funds raised through these bonds will be used.**
- **Features of the SGrBs:**
  - **Issuance Method –**
    - SGrBs will be issued through Uniform Price Auction.
  - **Eligibility for Repurchase Transactions (Repo) –**
    - SGrBs will be eligible for Repurchase Transactions (Repo).
    - SGrBs will also be reckoned as eligible investment for Statutory Liquidity Ratio (SLR) purpose.
  - **Tradability –**
    - SGrBs will be eligible for trading in the secondary market.
  - **Investment by Non-residents –**
    - SGrBs will be designated as specified securities under the 'Fully Accessible Route' for investment in Government Securities by **non-residents**.
- **Eligible Projects:**
  - All eligible green expenditures will include public expenditure undertaken by the government in the form of investment, subsidies, grants-in-aid, or tax foregone (or a combination of all or some of these) or select operational expenditures.
  - R&D expenditures in public sector projects that help in reducing the carbon intensity of the economy and enable country to meet its Sustainable Development Goals (SDGs) are also included in the framework.
  - The **eligible expenditures will be limited to government expenditures that occurred maximum 12 months prior to issuance of the green bonds.**
  - **Sectors not included –**
    - Nuclear power generation, landfill projects, alcohol/weapons/tobacco/gaming/palm oil industries and hydropower plants larger than 25 MW have been excluded from the framework.
- **FIIs to Invest in Green Bonds:**
  - The Reserve Bank of India (RBI) has approved investments in the country's Sovereign Green Bonds (SGrBs) by Foreign Institutional Investors (FIIS).
  - The RBI had issued SGrBs worth ₹16,000 crore in two tranches in January and February last year with maturities in 2028 and 2033.
  - While in both instances the bonds were oversubscribed, the main participants were domestic financial institutions and banks, narrowing the avenues from where the government could borrow.
  - SGrBs yield lower interest than conventional G-Secs, and the amount foregone by a bank by investing in them is called a '**greenium**'.
  - But central banks and governments the world over are encouraging financial institutions to embrace greeniums to hasten the transition to a greener future.
- **Significance of the RBI's Decision:**
  - Allowing FIIs to invest in India's green projects widens the pool of capital available to fund the country's following ambitious goals pledged by Prime Minister Narendra Modi at COP26 in Glasgow 2021:
    - 2070 net zero goals,
    - Ensuring 50% of India's energy comes from non-fossil fuel based sources and
    - To reduce the carbon intensity of the nation's economy by 45%.

3. <u>Imported Inflation</u>
<u>GS 3 (Economy)</u>

- **Why in News:** The Asian Development Bank recently warned that India could face imported inflation as the rupee could depreciate amid the rise in interest rates in the West.
- **More on News:**
  - Imported inflation refers to the rise in the prices of goods and services in a country that is caused by an increase in the price or the cost of imports into the country.
  - It is believed that a rise in input costs pushes producers to raise the price they charge from their local customers, thus boosting inflation.
  - When a country's currency depreciates, people in the country will have to shell out more of their local currency to purchase the necessary foreign currency required to buy any foreign goods or services, which in turn means that they will effectively be paying more for anything that they import.
  - A rise in interest rates in the West tends to cause the currencies of developing countries to depreciate against western currencies, which in turns can lead to higher import costs for these countries.

Imported inflation: how import costs can increase the prices of goods and services

The Asian Development Bank recently warned that India could face imported inflation as the rupee could depreciate amid the rise in interest rates in the West. A rise in interest rates in the West tends to cause the currencies of developing countries to depreciate

Prashanth Perumal

Imported inflation refers to the rise in the prices of goods and services in a country that is caused by an increase in the price or the cost of imports into the country. It is believed that a rise in input costs pushes producers to raise the price they charge from their local customers, thus boosting inflation.

A fall in the rupee

A depreciation in the value of a country's currency is generally seen as the most important reason behind imported inflation in an economy. This is because when a country's currency depreciates, people in the country will have to shell out more of their local currency to purchase the necessary foreign currency required to buy any foreign goods or services, which in turn means that they will effectively be paying more for anything that they import. The Asian Development Bank recently warned that India could face imported inflation as the rupee could depreciate amid the rise in interest rates in the West. A rise in interest rates in the West tends to cause the currencies of developing countries to depreciate against western currencies, which in turns can lead to higher import costs for these countries.

A rise in import costs even without depreciation in the value of a country's currency is also believed to lead to import inflation. So a rise in international crude oil prices due to fall in oil output, for instance, is expected to cause prices to rise across an economy which imports oil to produce goods and services. The idea of imported inflation, it should be noted, is simply a variant of cost-push inflation which states that a rise in the cost of inputs can lead to an inflation in the prices of final goods and services.

Consumers decide prices

Critics of the proposition that rising import costs can lead to a rise in inflation believe that it is a fallacious economic idea. They state that it might seem commonsensical to believe that input costs determine price, and hence that higher costs should lead to higher prices for goods and services. After all, it is common to see a lot of businesses in the real world raise the price of their products when their input costs rise. It may thus seem true, from an individual business' point of view, that costs determine prices.

However, the critics state, it is simply not true that costs determine price when seen from an economic point of view. Instead, they state that it is the prices that customers are willing to pay for the final goods and services that ultimately determine the cost of all inputs that go into making products.

It should be carefully noted that producers are willing to pay for various inputs based on what price they believe they can sell their final output for to their customers. So, if the cost of inputs were set at a price that is higher than what producers are willing to pay (based on final consumer demand), this would cause the available supply of inputs to go unsold as producers are unwilling to purchase the inputs. This, in turn, would cause the price of inputs to drop in accordance with final consumer demand.

Stated simply, value is imputed backwards from final consumer goods and services to inputs that go into making these final goods and services. The idea of imputation of value from final consumer goods and services to the various factors of production was elaborated famously by Austrian economist Carl Menger in his 1871 book *Principles of Economics*.

It can be further argued that even when import costs rise due to a depreciating currency, the rise in costs is still ultimately driven by the demand for the final output among consumers. To understand this, it should be noted that the value of a currency depreciates against a foreign currency when its supply becomes relatively more abundant than the foreign currency in the forex market. In other words, the exchange rate of a currency depreciates to reflect the greater demand for the foreign currency in terms of the local currency. So, the resulting rise in import costs due to depreciation itself can be seen simply as a reflection of a change in the nominal demand for inputs.

Stated simply, it is not currency depreciation that is causing input costs and the prices of final goods to rise; rather, the currency depreciation is simply a reflection of higher nominal demand for imported goods from final consumers.

- A rise in import costs even without depreciation in the value of a country's currency is also believed to lead to import inflation.

4. IMF raises India's GDP forecast to 6.8% for FY25
GS 3 (Economy)

IMF forecasts India's economy to grow 6.8% this fiscal year

World economy is 'remarkably resilient' but challenges remain, Fund says in its 'World Economic Outlook April 2024'; lifts India forecast from Jan.

Sriram Lakshman
LONDON

The International Monetary Fund (IMF) on Tuesday raised its growth projection for India for the current fiscal year 2023-24 to 6.8%, and forecast a 6.5% expansion next year. The latest FY25 forecast is a 0.3 percentage point upward revision from January's projection, the IMF said in its World Economic Outlook for April 2024, released on Tuesday.

"The global economy had remained "remarkably resilient" with steady growth and inflation returning to target and had "defied expectations of stagflation and global recession" in the wake of post-pandemic supply disruptions, Russia's invasion of Ukraine and subsequent global energy and food crises as well as the monetary tightening across economies, the IMF observed.

It projected global output growth in 2024 and 2025 at 3.2%, after bottoming out at at 3.3% at the end of 2022.

'Liberalise investment'

The projected moderation in India's growth rate from 7.8% last fiscal year was driven by tighter monetary and fiscal policy, necessary to bring inflation down, IMF economist Daniel Leigh said at a press briefing on the report. Inflation was projected to be 4.6% this year and 4.2% next year, Mr. Leigh added.

Growth could end up higher than expected due to strengthening private demand, he added, private

"Also, an upside comes from the potential for reforms that would liberalise foreign investment and really boost exports and boost jobs and labour force participation," he said, responding to a question from *The Hindu* on policy recommendations for the Indian economy and addressing unemployment concerns.

"So, it's a very strong outlook and... a balanced risk outlook," he added.

On the inflation outlook, the IMF expected median headline inflation to ease from 2.8% at the end of this year to 2.4% at the end of 2025. "Most indicators point to a soft landing," the Fund said.

'Less scarring'

"Another piece of good news is the lower scarring," IMF Chief Economist Pierre-Olivier Gourinchas said during a virtual briefing.

Scarring, or the gap in output compared with pre-pandemic levels, was less in most regions with the exception of low income and developing countries, he said.

The IMF called for vigilance, citing recent inflation numbers that were pushing upward. Most of the slowing in inflation was due to falling energy prices but "services inflation remained high and could derail this disinflation path, the IMF cautioned.

Strong outlook: Growth could end up higher than expected due to strengthening private demand, says IMF's Daniel Leigh. AP

- **Why in News:** With an anticipated surge in domestic demand, the IMF now estimates India's GDP growth to reach 6.8 percent, marking an upward revision of 30 basis points from its previous forecast. This adjustment reflects the enduring strength of domestic demand and the ascending trajectory of the working-age population within the country.
- **Key Highlights from IMF's World Economic Outlook (WEO)**
  - **Strengthened Growth Trajectory**
  - **FY24 Projections:** India's GDP growth for FY24 is projected at 7.8 percent, showcasing a robust economic performance.
  - **Continued Strength in Domestic Demand**
  - **Driving Factors:** The sustained robustness in India's economic growth is attributed to the enduring vigor in domestic demand, coupled with the burgeoning working-age population.
- **Comparative Analysis**
  - **IMF vs. Other Projections**: While the IMF's revised projection is optimistic, it remains slightly conservative compared to forecasts by other institutions. The Asian Development Bank (ADB) recently revised its projection for India's growth to 7%, citing robust public and private sector investment and improving consumer demand.
  - **RBI's Outlook**: The Reserve Bank of India (RBI) echoes a positive sentiment, with Governor Shaktikanta Das highlighting bright prospects in agriculture and rural activity, projecting a growth rate of 7% for the Indian economy.
- **Impact on Economic Sectors**
  - **Rural Economy and Monsoon**: Forecasts of an above-normal monsoon by the India Meteorological Department (IMD) bode well for rural demand, crucial for overall economic growth. Last year's below-normal monsoon dampened farm growth, underscoring the significance of favorable weather conditions for agricultural productivity.
  - **Manufacturing and Services**: Despite agricultural challenges, robust growth in manufacturing and services sectors played a pivotal role in propelling the economy to over 7.5% growth in the previous year.
- **Global Economic Context**
  - **Global Economic Outlook**: The global economy is anticipated to grow at a steady pace of 3.2% in 2024 and 2025, although below the historical average. This projection reflects factors such as restrictive monetary policies, withdrawal of fiscal support, and subdued productivity growth.
  - **Regional Variances**: Advanced economies are expected to witness slight growth upticks, particularly in the euro area. Meanwhile, emerging market and developing economies are poised for stable growth, albeit with regional disparities.

5. Flood in UAE
Recent events of importance

Dubai airport diverts flights as rain lashes UAE; toll in Oman due to flood rises to 18

ASSOCIATED PRESS
DUBAI, APRIL 16

HEAVY RAINS lashed the United Arab Emirates on Tuesday, flooding out portions of major highways and leaving vehicles abandoned on roadways across Dubai. Meanwhile, the death toll in separate heavy flooding in neighboring Oman rose to 18 with others still missing as the sultanate prepared for the storm.

The rains began overnight, leaving massive ponds on streets as whipping winds disrupted flights at Dubai International Airport, the world's busiest for international travel and the home of the long-haul carrier Emirates. By the evening, over 120 millimeters (4.75 inches) of rainfall had soaked the city-state – the typical average for a year in the desert nation – with more expected in the coming hours.

Police and emergency personnel drove slowly through the flooded streets, their emergency lights flashing across the darkened morning. Lightning flashed across the sky, occasionally touching the tip of the Burj Khalifa, world's tallest building.

Schools across the UAE, a federation of seven sheikhdoms, largely shut ahead of the storm and government employees were largely working remotely if able.

In neighboring Oman, a sultanate that rests on the eastern edge of the Arabian Peninsula, at least 18 people had been killed in heavy rains in recent days, according to a statement Tuesday from the country's National Committee for Emergency Management. That includes some 10 schoolchildren swept away in a vehicle with an adult, which saw condolences come into the country from rulers across the region.

Authorities sent tanker trucks out into the streets and highways to pump away the water. Water poured into some homes, forcing people to bail out their houses.

Rain is unusual in the UAE, an arid, Arabian Peninsula nation, but occurs periodically during the cooler winter months. Many roads and other areas lack drainage given the lack of regular rainfall, causing flooding.

- **Why in News:** UAE receives its highest rainfall in 75 years, with 1.5 year's worth of rain falling over Dubai in 24 hours.
- **More on News:**
  - The UAE witnessed the largest amount of rainfall during the past 75 years.
  - Dubai is experiencing major flooding as 1.5 year's worth of rain just fell in a single day. Nearly 5 inches (127 mm) fell in 24 hours,"
  - Dubai and UAE are situated in the Arabian Peninsula (AP), which has an extremely arid and dry climate.
  - A study published in 2020 noted that there will be "a robust increase in annual mean precipitation over the southern AP, and a decrease over the northern AP".
  - It was also the driest year on record, with the country's annual total rainfall in deficit, compared with the long-term average (2003-2022).

6. 29 Maoists killed in Bastar encounter
Recent events of importance

SENIOR MAOISTS BELIEVED TO BE AMONG DEAD; 3 SECURITYMEN INJURED

In biggest strike in Bastar, 29 Maoists killed in forest firefight ahead of vote

Determined to end scourge of Naxalism: Shah hails operation

Will leave no safe pockets for Naxals: Bastar IG, days before encounter

MAOISTS KILLED IN STATE SINCE 2019

- **Why in News:**
  - At least 29 Maoists were killed and three security personnel were injured in a gunbattle in a forest in Kanker district of Bastar division in Chhattisgarh.
  - This was the highest number of Maoist casualties in a single operation in the Bastar region. This operation was carried out by a joint team of DRG (District Reserve Guards) and BSF (Border Security Force).
- **Left Wing Extremism (LWE)**
  - Left-wing extremism is the single internal security threat that affects the largest number of States in India.
  - LWE aims to **overthrow the existing democratic state structure with violence** as their primary weapon, and mass mobilization and strategic united fronts as complementary components.
    - They plan to usher in So-called **'New Democratic Revolution'** in India.
  - Left-wing extremists are popularly known as Maoists worldwide and as Naxalites in India.
- **Current situation of LWE in India**
  - **Maoist violence came down**
    - According to the Ministry of Home Affairs:
      - Maoist violence in the country has gone down by 77% since 2010;
      - The number of resultant deaths (security forces + civilians) has come down by 90 % from the all-time high of 1,005 in 2010 to 98 in 2022.
  - **Number of districts declared to be Naxal-affected**
    - The government has cut the number of districts declared to be Naxal-affected from over 200 in the early 2000s to just 90 now.
    - It claims that the geographical spread of violence is actually restricted to just 45 districts.
      - According to the MHA, the arc of violence has been considerably restricted with just 25 districts accounting for 90% of the LWE violence.
    - The presence of Naxals is said to be minimal to zero in Andhra Pradesh, Telangana, Odisha, Jharkhand, and Bihar, which were at one time their strongholds
- **Maoism**
  - Maoism is a form of communism developed by Mao Tse Tung.
  - It is a doctrine to **capture State power through a combination of armed insurgency, mass mobilization and strategic alliances**.
  - The Maoists also use propaganda and disinformation against State institutions as other components of their insurgency doctrine.
    - Mao called this process, the 'Protracted Peoples War', where the emphasis is on 'military line' to capture power.
- **Central theme of Maoist ideology**
  - The central theme of Maoist ideology is the use of violence and armed insurrection as a means to capture State power.
    - 'Bearing of arms is non-negotiable' as per the Maoist insurgency doctrine
  - The maoist ideology glorifies violence and the 'Peoples Liberation Guerrilla Army' (PLGA) cadres are trained specifically in the worst forms of violence to evoke terror among the population under their domination.
- **Indian Maoists**
  - The largest and the most violent Maoist formation in India is the Communist Party of India (Maoist).
  - The CPI (Maoist) is an amalgamation of many splinter groups, which culminated in the merger of two largest Maoist groups in 2004;
    - the Communist Party of India (Marxist-Leninist),
    - People War and the Maoist Communist Centre of India.
  - The CPI (Maoist) and all its front organizations formations have been included in the list of banned terrorist organizations under the Unlawful Activities (Prevention) Act, 1967.
- **Maoism and Naxalism**
  - Maoism' and 'Naxalism' are one and same. Naxalism does not have a separate ideology. Its ideology is Maoist ideology.
  - The Maoists' three Magic weapons are
    - Party (leadership),
    - Armed cadre (operating from jungles) and
    - United front (a network of mass organisations in Urban areas)
- **Recent Bastar encounter**
  - Twenty-nine Maoists were killed in a fierce encounter with security forces in Chhattisgarh's Kanker district.
  - This operation was carried out by a joint team of DRG (District Reserve Guards) and BSF (Border Security Force).
    - DRG is a special unit of the police force in some Indian states, mainly Chhattisgarh, that is equipped and trained to fight the Naxalite and Maoist insurgency.
    - It is made up of local tribal personnel familiar with the local terrain. They are trained in guerrilla warfare, jungle warfare, and the use of modern weapons.

7. iCET
GS 2 (International Relations)

US NSA Sullivan postpones India visit, cites West Asia tension

- **Why in News:** As tensions between Israel and Iran grew, U.S. NSA cancelled his plan to travel to Delhi for an annual review of the India-U.S. initiative for Critical and Emerging Technologies (iCET).
- **What is iCET?**
  - It is a framework **agreed upon by India and the U.S. for cooperation on critical and emerging technologies** in areas including AI, quantum computing, semiconductors and wireless telecommunication. It was **first announced** by the PM of India and the US President on the sidelines of the Quad meeting in Tokyo in **2022**. It was launched in **2023** to strengthen the strategic partnership and drive technology and defence cooperation between India and US.
- **What are the Focus Areas of the Initiative?**
  - Primarily, the iCET seeks to position New Delhi and Washington D.C. as **trusted technology partners** to **build supply chains and support the co-production** and co-development of items. Areas that iCET intends to explore include –

- Developing common standards in AI,
- Developing 'innovation bridge' to connect defence startups;
- Supporting the development of a semiconductor ecosystem;
- Strengthening cooperation on human spaceflight;
- Advancing cooperation on development in 5G and 6G; and
- Adopting OpenRAN network technology in India.

- **What has been the Progress so Far?**
  - The two countries have already put in place the **Quantum Coordination Mechanism** and launched a **public-private dialogue** (PDD) on telecommunication to drive collaboration in OpenRAN, 5G and 6G. Both signed an MoU on **establishing a semiconductor supply chain**. On the defence front, the two countries are close to concluding **a mega jet engine deal** and a new initiative known as the India-U.S. Defence Acceleration Ecosystem (**INDUS-X**).

8. Jhelum river

Recent events of importance

- **Why in News:** At least six persons have died after a boat capsized in the Jhelum river on the outskirts of Srinagar city.

Two minors among six dead in Srinagar boat capsize; 3 missing

EXPRESS NEWS SERVICE
SRINAGAR, APRIL 16

AT LEAST six people, including two minors who were on their way to school, died after a boat capsized in the Jhelum River in Srinagar's Gandbal area on Tuesday morning, officials said.

Three people were still missing at the time of publication, Srinagar's Deputy Commissioner Bilal Mohiudin Bhat said.

Bhat said there were 15 people, including seven minors, on the boat as it was crossing the river swollen after incessant rains over the last three days. Witnesses said the boat capsized after a rope tied to it to help it navigate the waters snapped.

"12 people were brought out of the water through the efforts of local people and teams of NDRF and SDRF. Six of them died, three are in the hospital, and three people remain missing, of whom two are minors," Bhat said.

Expressing grief over the incident, J&K Lieutenant Governor Manoj Sinha said the administration was providing "all possible help" to the bereaved families and treatment to those injured.

"Teams of SDRF, Army and other agencies are carrying out relief and rescue work... Marcos (marine commandos) teams have also been alerted. I am constantly monitoring the situation and guiding the team on the ground," Sinha said.

Divisional Commissioner, Kashmir V K Bidhuri along with officials of the administration and the police were present at the spot as a search ensued for the missing school children.

National Conference leader Omar Abdullah, PDP president Mehbooba Mufti as well as People's Conference chief Sajad Lone offered condolences.

Political leaders also raised concerns over the under-construction footbridge in the area not being completed seven years after it was sanctioned.

"The prolonged construction of a footbridge, lingering for years, highlights a missed opportunity to prevent such tragedies," CPI(M) leader M Y Tarigami posted on X.

Rescue operation underway in the Jhelum river, Tuesday. PTI

- **About Jhelum river:**
  - It is a tributary of the Indus River that flows in India and Pakistan. It is the main waterway of the Kashmir valley.
  - It constitutes the **westernmost of the five rivers of the Punjab region** that merge with the Indus River in eastern Pakistan. **Mangla Dam** has been built on the river.
  - **Course:**
    - **Origin:** It rises from its chief source **Verinag at the foothills of Pir Panjal ranges** in Jammu and Kashmir.
    - It then flows via **Dal Lake, Srinagar and Wular Lake** prior to entering Pakistan.
    - The river makes a deep, narrow gorge on its way to Pakistan.
    - It **joins the Chenab River** near Trimmu, Pakistan.
  - **Major Tributaries:**
    - The largest tributary of the Jhelum is the **Kishenganga (Neelum) River,** which joins near Muzaffarabad and enters the Punjab province, Pakistan.
    - Other tributaries- **Sandran River, Bringi River, Arapath River, Lidder River**, Veshaw River, Rambiara River, Dudhganga River.

9. Iron Dome System

GS 2 (International events of importance)

- **Why in News:** Israel's multilayered air-defence system is credited with protecting the country from serious damage or casualties from an Iranian strike by more than 300 drones and ballistic missiles.
- **More on News:**
  - Iron Dome is a short-range anti-rocket, anti-mortar, and anti-artillery system with an intercept range of 2.5 to 43 miles and was developed by Rafael Advanced Defence Systems of Israel.
  - Each Iron Dome battery is designed to defend a 60-square-mile populated area and can be moved as threats change.

Israel's weapons that thwarted Iran attack

AMRITA NAYAK DUTTA

IRON DOME TO ARROW: COMPONENTS OF AIR DEFENCE

IRON DOME

DAVID'S SLING

SPYDER

ARROW

RANGE OF ISRAEL'S AIR DEFENCE MISSILES: FROM 100-2,400 KM

- Israel has a four-layered air defence network to tackle a range of projectiles, short-range mortars, rockets and long-range ballistic missiles.
  - Iron Dome (short range)
  - David's Sling (low to mid-range)
  - Arrow II (upper-atmospheric)
  - Arrow III (exo-atmospheric)

- **India's Missile Defence Systems**
  - 1st layer (Endo): The single stage solid rocket-propelled Advanced Air Defence (AAD) low-altitude interceptormissile. (**Ashwin**)
  - 2nd layer(Exo): Prithvi Air Defense Vehicle known as **Pradyumna Ballistic Missile Interceptor** is designed to destroy missiles with **ranges 300-2000** km at exo-atmosphere (about 80km altitude).
  - For higher altitudes upto 150 km, Agni-V-based ballistic interceptors would be used. (because of 5000km range)
  - **S-400:** It has a range of up to 400 km, at an altitude of up to 30 km and can engage up to 36 targets simultaneously, with four different types of missiles.
  - **Project Kusha:** Project Kusha led by the Defence Research and Development Organisation (DRDO) is an ambitious defence initiative by India aimed at developing its long-range air defence system by 2028-29.

10. Space Tourism
GS 3 (Science and Tech)

INDIA-ORIGIN GOPI THOTAKURA HEADS TO SPACE: WHAT IS SPACE TOURISM?

GOPI THOTAKURA, an entrepreneur and a pilot, is set to become the first person of Indian origin to go to space as a tourist on the NS-25 mission of Blue Origin — a company founded by Jeff Bezos, who is also the founder of Amazon. Thotakura has been selected as one of the six crew members for the mission. The launch date of the mission is yet to be announced.

In recent years, space tourism has grown in popularity. In 2023, the space tourism market was estimated to be worth $848.28 million. It is expected to grow to $27,861.99 million by 2032. However, there are several challenges that may limit the industry's growth.

What is space tourism?

Space tourism is a form of space travel, which is done for recreational or business purposes. There are two main types of space tourism, sub-orbital and orbital.

The sub-orbital spacecraft takes passengers just beyond the Kármán line — it lies nearly 100 kilometres above our heads and is considered to be the boundary between Earth's atmosphere and outer space. The passengers get to spend a few minutes in outer space and then come back to Earth. The NS-25 mission, which Thotakura is a part of, is a sub-orbital mission.

Orbital spacecraft take passengers much farther than the Kármán line. Usually, passengers can spend from a couple of days to more than a week at an altitude of up to 400 km.

In 2021, Space X's Falcon 9 took four passengers to an altitude of 160 km, where they spent three days orbiting the Earth.

Gopi Thotakura. LinkedIn

What are the challenges?

Currently, space tourism is expensive. A passenger generally has to pay at least a million dollars to reach outer space. This is mainly because of high manufacturing costs and the cost of fuel.

Studies have found that space tourism may cause environmental damage as rockets emit gaseous and solid chemicals directly into the upper atmosphere.

A 2022 study published in the journal *Earth's Future* found that soot emissions from rocket launches are far more effective at warming the atmosphere compared to other sources.

Safety is also a concern. A total of 676 people have flown into space and 19 of them have died as of November 2023, according to a report by *Astronomy Magazine*. This means that approximately 3% of astronauts died during their space flight which is a high fatality rate. ENS

- **Why in News:** Gopi Thotakura is set to become the first Indian to become a space tourist on the NS-25 mission of Blue Origin, a company founded by Jeff Bezos.
- **What is Space Tourism?**
  - It seeks to provide tourists with the opportunity to become astronauts and experience space travel for recreational, leisure, or business purposes and is of two types: **sub-orbital and orbital.** The sub-orbital spacecraft takes passengers just beyond the **Kármán line** (boundary between Earth's atmosphere and outer space **(~100 kilometers**)) for a few minutes and then comes back to Earth. The NS-25 mission is a sub-orbital mission. The orbital space craft takes passengers much further than the Kármán line where they can spend from a couple of days to more than a week at an altitude of nearly 1.3 million feet. Space X's Falcon 9 in 2021 took four passengers to an altitude of 160 km for three days.
- **What are the Challenges Involved?**

It is expensive and requires a passenger to spend at least a million dollars to reach outer space which is not feasible for everyone wishing to do space travel. As per several studies, it may lead to environmental damage as rockets emit gaseous and solid chemicals directly into the upper atmosphere. According to a 2022 study by University College London (UCL), the University of Cambridge and the Massachusetts Institute of Technology (MIT), the soot emissions from rocket launches are far more effective at warming the atmosphere compared to other sources. Safety is another concern, despite having high safety standards, out of the total 676 people who flew into space, 19 died, as per a 2023 report by Astronomy Magazine i.e. approximately 3% of astronauts died during their space flight which is quite a high fatality rate.

NEELOFER CIVIL SERVICE CLASSES UPSC WITH NCSCS DELHI IAS

18th April, 2024

1. Cooch Behar

Recent events of importance

- **Why in News:** EC halts Bengal Governor's Cooch Behar trip on poll eve
- **About**
  - Cooch Behar, also known as Koch Bihar, is a city and municipality in West Bengal, India, located along the Torsa River and in the foothills of the Eastern Himalayas.
  - It's the only planned town in the North Bengal region.
  - Being one of the main tourist destinations of West Bengal, housing the Cooch Behar Palace and Madan Mohan Temple, it has been declared a heritage city.

EC halts Bengal Governor's Cooch Behar trip on poll eve

Poll body says Ananda Bose's programme will violate Model Code of Conduct and disturb poll officials and the police; it feels there's no 'imminently known' need for the tour on April 18, 19

Sreeparna Chakrabarty
NEW DELHI

Taking a tough stance, the Election Commission (EC) on Wednesday advised West Bengal Governor C.V. Ananda Bose to halt his plan to tour Cooch Behar district on April 18 and 19, saying that it would violate the Model Code of Conduct.

Cooch Behar is set to vote in the first phase of the Lok Sabha election on April 19. Campaigning ended on Wednesday evening, marking the beginning of the "silence period" before voting.

EC sources said the commission felt there was no "imminently known" requirement for the Governor to visit the place, and that such a tour would disturb polling officials on the eve of the election. "Under [the] Model Code of Conduct and being poll day, no local programme can be organised for the Governor as proposed in his issued programme," the EC noted in its communication to the Office of the Governor.

It added that the entire district administration and police force would be fully occupied in election management, and would have to divert from those time-bound duties if they were required to provide any protocol and security cover for the Governor.

West Bengal Governor C.V. Ananda Bose praying at a Hanuman temple in Kolkata on Ram Navami on Wednesday. ANI

Silence period

Under Section 126 of the Representation of the People Act, 1951, the "silence period" brings in a multitude of restrictions and a higher level of enforcement by poll authorities.

In March, the ruling Trinamool Congress had lodged a complaint with the EC against the Governor for allegedly interfering with the poll process. In a letter to the EC, the Trinamool said the Raj Bhavan had created a new 'Log Sabha' portal to listen to the grievances of voters and directly connect with them during the election.

2. Centre Tweaks Green Credit Programme Norms, to Focus on Restoration of Ecosystem

GS 2 (Governance)

- **Why in News:** The Union Environment Ministry has introduced amendments to the Green Credit Programme (GCP) to emphasize the restoration of ecosystems over mere tree planting, addressing concerns of potential misalignment with conservation objectives.
- **Key Highlights of the Programme**
  - **Focus on Ecosystem Restoration:** The revised norms prioritize the restoration of degraded forest lands rather than solely emphasizing tree planting for financial incentives, aligning with broader ecological conservation goals.
  - **State Participation:** Thirteen states have already identified 387 parcels of degraded forest land spanning approximately 10,983 hectares for restoration efforts, indicating active state involvement in the programme.
  - **Role of Individuals and Organizations:** Individuals and companies can contribute to ecosystem restoration by financing the restoration process through the Indian Council of Forestry Research and Education (ICFRE).
  - **Credit Mechanism:** The programme introduces the concept of 'green credits,' wherein each planted tree evaluated by the ICFRE after two years can translate into one green credit. These credits can be utilized for compliance with forest laws or corporate social responsibility obligations.

Centre tweaks Green Credit Programme norms, to focus on restoration of ecosystem

Jacob Koshy
NEW DELHI

Amid concerns that the Green Credit Programme (GCP), which encourages organisations and individuals to invest in afforestation projects in 'degraded' forest lands for 'green credits', may encourage tree planting for financial gains, the Union Environment Ministry – the overall coordinator of the programme – has clarified that primacy must be accorded to restoring ecosystems over merely tree planting.

So far, *The Hindu* has learnt, forest departments of 13 States have offered 387 land parcels of degraded forest land – worth nearly 10,983 hectares.

Individuals and companies can apply to 'restore' forests, and the actual afforestation will be carried out by State forest departments

Individuals and companies can apply to the Indian Council of Forestry Research and Education (ICFRE), an autonomous body of the Environment Ministry, to pay to "restore" these forests.

The actual afforestation will be carried out by State forest departments.

Two years after planting and following an evaluation by the ICFRE, each such planted tree could be worth one 'green credit'.

These credits can be claimed by the financing organisation and used in two ways: either using it to comply with existing forest laws that require organisations, which divert forest land for non-forestry purposes, to recompense by providing an equivalent amount of land elsewhere; or be used for reporting under environmental, social, and governance leadership norms or to meet corporate social responsibility (CSR) requirements.

In its latest update on April 12 this year, the Union Environment Ministry had issued guidelines that States must rely on to calculate what it would cost to restore a degraded forest landscape.

The Ministry has changed the earlier requirement that there be a minimum of 1,100 trees per hectare to qualify as reforested landscape and left it to States to specify them.

"Not all degraded forests can support that kind of density. Thus, in some places, shrubs, herbs, and grasses may be suitable for restoring the ecosystem," Nameeta Prasad, Joint Secretary in the Environment Ministry, told *The Hindu*.

- **Emphasis on Ecosystem Restoration**
  - **Clarification on Objectives:** The amendments underscore the importance of restoring degraded ecosystems, acknowledging the complexity and significance of ecosystem health beyond mere afforestation.
  - **State-led Initiatives:** State forest departments are entrusted with the task of actual afforestation activities, ensuring localized management and expertise in ecosystem restoration.
- **Integration with Corporate Responsibility**
  - **Utilization of Green Credits:** The programme offers a dual benefit by allowing organizations to fulfill legal obligations, such as compensatory afforestation, while also integrating environmental stewardship into corporate governance practices.
  - **Alignment with CSR Mandates:** Green credits provide organizations with a mechanism to meet corporate social responsibility requirements, fostering sustainable development practices.
- **Adaptive Guidelines for Restoration**
  - **Flexible Criteria:** The Ministry's decision to remove the fixed requirement of 1,100 trees per hectare for reforestation reflects an adaptive approach, allowing states to tailor restoration efforts according to local ecological conditions.
  - **Ecosystem Diversity Considerations:** Recognizing the diverse nature of degraded forests, the guidelines permit the restoration of ecosystems using a variety of vegetation types, including shrubs, herbs, and grasses, based on ecological suitability.

3. Elephants (Elephas maximus)(family Elephantidae)
GS 3 (Environment)

- **Why in News:** The Forest Department in Karnataka has launched an operation to capture trouble-causing wild elephants and fix radio collars on them.
- **About**
  - The Asian elephant (Elephas maximus) weighs about 5,500 kg and has a shoulder height of up to 3.5 metres.
  - The Asian elephant includes three subspecies: the Indian, or mainland (E. maximus indicus), the Sumatran (E maximus sumatranus), and the Sri Lankan (E. maximus maximus).
  - African elephants have much larger ears, which are used to dissipate body heat.
  - Elephants are keystone species as well as the Natural Heritage Animal of India.
  - India has the largest number of wild Asian Elephants. The elephant population in the country is estimated to be over 30,000.
  - Karnataka has the highest elephant population in India.
  - **Conservation Status:**
    - Convention of the Migratory Species (CMS): Appendix I
    - Wildlife (Protection) Act, 1972: Schedule I
    - International Union for Conservation of Nature (IUCN) Red List of threatened species:
    - **Asian Elephant: Endangered**
    - African Forest Elephant: Critically Endangered
    - African Savanna Elephant: Endangered

Karnataka to capture rogue wild elephants and fix radio collars

The Hindu Bureau
HIVAMOGGA

The Forest Department will release or translocate jumbos after fixing radio collars

he Forest Department in arnataka has launched an peration to capture trou-le-causing wild elephants nd fix radio collars in Has-an division.

The operation that start-d on Wednesday will con-inue up to April 24.

Sourabh Kumar, Deputy onservator of Forests of lassan Division, informed he media on Wednesday hat the Principal Chief onservator of Forests Wildlife) has given permis-ion to capture rogue ele-hants roaming in parts of lur, Belur, Sakaleshpur, eshur and Arakalgud rang-s of forest. The depart-nent would either release or translocate them after fixing radio collars.

The department fixes radio collars on elephants that lead the herds so that their movements can be tracked. The officer has sought the cooperation of the farming community and the locals during the operation. Many elephants have been roaming in sev-eral parts of Hassan. The locals have been demand-ing the government to cap-ture all the elephants and translocate them.

4. The Great Indian Bustard and climate action verdict
GS 3 (Environment)

- **Why in News:** The Supreme Court of India recently acknowledged a fundamental right to be free from the adverse impacts of climate change in a significant judgment. This editorial examines the implications of the judgment beyond the protection of the Great Indian Bustard, focusing on inclusive climate action.
- **Right against adverse effects of Climate change**
  - **Recognition of Climate Change Right:** The Supreme Court recognized the existence of a right against the adverse impacts of climate change, citing Articles 14 and 21 of the Indian Constitution It emphasized the threat posed by climate change to the right to life and equality, rooted in scientific consensus and international commitments.
  - **Lack of Articulation:** While acknowledging the right, the Court refrained from articulating it further, diverging from its usual practice in environmental cases. This deliberate restraint allows for a more informed discourse on climate rights.
  - **Future Implications:** Although not binding per se, the recognition of the right lays the foundation for future climate action and legal developments, providing space for articulation and enforcement.
    - **Just Transition Framework**
  - **Adverse Impacts of Renewable Energy:** The judgment highlighted the competing choices between biodiversity protection and mitigative climate action, particularly in the context of renewable energy projects and the Great Indian Bustard.
  - **Role of Just Transition:** Adopting the just transition framework can reconcile these competing interests by ensuring equitable and inclusive climate action. It emphasizes the protection of underrepresented interests and promotes ecological justice.
  - **Advantages of Just Transition:** Utilizing the framework can prevent adversarial choices between climate action and biodiversity protection, facilitate the articulation of inclusive climate rights, and set a precedent for considering non-human interests in climate litigation.
    - **A 'Shared Burden'**

The Great Indian Bustard and climate action verdict

- **Opportunity for Inclusive Climate Action:** With the final decision pending, there is an opportunity for the judiciary to apply the just transition framework, promoting inclusive and equitable climate action. This shared burden extends to stakeholders beyond the state, including activists, litigants, and academics.
- **Discourse on Climate Rights:** The recognition of the right against climate change initiates a discourse on its content, emphasizing inclusivity and effectiveness. Stakeholder engagement is crucial in shaping and implementing these rights.
- **Potential for Progress:** Collaboration among stakeholders can lead to significant progress in climate action and biodiversity conservation, ensuring a balanced approach that protects both human and non-human interests.

5. <u>On India's 'Heat Action Plans'</u>
<u>GS 2 (Governance)</u>

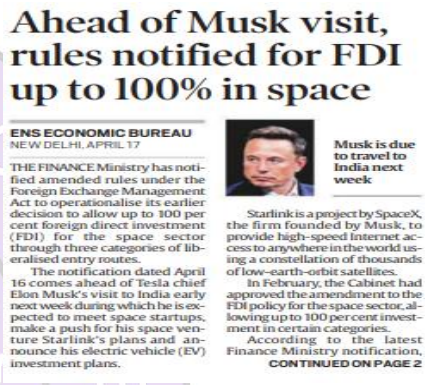
On India's 'heat action plans'

- **Why in News:** With rising temperatures across India and the onset of heat alerts as early as February, the effectiveness of Heat Action Plans (HAPs) in mitigating the impacts of heatwaves warrants examination.
- **Implementation of Heat Action Plans**
  - **State-Level Preparedness:** Governments at various levels have devised HAPs to enhance readiness and minimize adverse effects of heatwaves. Collaborative efforts between the National Disaster Management Authority, IMD, and 23 states aim to develop comprehensive HAPs tailored to local conditions.
  - **Community Engagement:** Effective implementation of HAPs requires active involvement and awareness among communities. Public participation through awareness campaigns, community meetings, and capacity-building workshops enhances the effectiveness of heat resilience measures.
  - **Inter-Agency Coordination:** Seamless coordination among various agencies and departments is vital for the successful execution of HAPs. Integration of efforts between health departments, disaster management authorities, and urban planning bodies ensures a holistic approach to heatwave management.
- **Recommendations and Strategies**
  - **Mitigation Measures:** HAPs advocate a range of strategies including early warning systems, public education campaigns, establishment of cooling centers, and provision of clean water to combat dehydration.
  - **Healthcare Preparedness:** Hospitals are advised to equip themselves with necessary supplies and trained personnel to manage heat-related illnesses, while long-term measures emphasize urban planning for heat resilience.
- **Challenges and Limitations**
  - **Local Contextualization:** HAPs face challenges in accurately defining heatwaves at local scales and incorporating factors like urban heat islands and humidity levels. A broader understanding of heatwave impacts beyond temperature is crucial for effective planning.
  - **Methodological Consistency:** Variability in vulnerability assessments across HAPs underscores the need for standardized climate risk assessments and hotspot mapping to prioritize interventions effectively.
  - **Addressing Vulnerable Populations:** While HAPs prioritize vulnerable groups, targeted interventions accounting for socio-economic disparities and infrastructure limitations are essential for equitable heat resilience.
  - **Resource Allocation and Integration:** Dedicated funding and integration of HAPs with broader urban resilience plans can enhance implementation and ensure effective utilization of resources.
  - **Nature-Based Solutions:** HAPs should emphasize nature-based solutions alongside infrastructural developments, incorporating green and blue spaces to combat extreme heat in hotspots effectively.
- **Heat Wave**
  - Heat wave is a condition of air temperature which becomes fatal to human body when exposed.
  - Quantitatively, it is defined based on the **temperature thresholds over a region in terms of actual temperature or its departure from normal**.

- For declaring a heat wave, the temperature should be 4.5 °C above normal for that time in a region.
- The criteria for the coastal station maximum temperature should be greater than or equal to 37 °C.

- **Favourable conditions of heat wave formation**
  - **Transportation / Prevalence of hot dry air over a region**: There should be a region of warm dry air and appropriate flow pattern for transporting hot air over the region.
  - **Absence of moisture in the upper atmosphere:** As the presence of moisture restricts the temperature rise.
  - **The sky should be practically cloudless**: To allow maximum insulation over the region.
  - **Large amplitude anti-cyclonic flow** over the area.

6. Ahead of Elon Musk's Visit, Ministry of Finance Changes Rules in FDI
GS 3 (Economy)


Ahead of Musk visit, rules notified for FDI up to 100% in space

ENS ECONOMIC BUREAU
NEW DELHI, APRIL 17

THE FINANCE Ministry has notified amended rules under the Foreign Exchange Management Act to operationalise its earlier decision to allow up to 100 per cent foreign direct investment (FDI) for the space sector through three categories of liberalised entry routes.

The notification dated April 16 comes ahead of Tesla chief Elon Musk's visit to India early next week during which he is expected to meet space startups, make a push for his space venture Starlink's plans and announce his electric vehicle (EV) investment plans.

Musk is due to travel to India next week

Starlink is a project by SpaceX, the firm founded by Musk, to provide high-speed internet access to anywhere in the world using a constellation of thousands of low-earth-orbit satellites.

In February, the Cabinet had approved the amendment to the FDI policy for the space sector, allowing up to 100 per cent investment in certain categories.

According to the latest Finance Ministry notification,

CONTINUED ON PAGE 2

- **Why in News:** The Ministry of Finance has changed rules under the Foreign Exchange Management Act to allow up to 100 per cent foreign direct investment (FDI) for the space sector through three categories of liberalised entry routes.
- **What is FDI?**
  - Foreign direct investment (FDI) is an investment from a party in one country into a business or corporation in another country with the intention of establishing a lasting interest.
  - With FDI, foreign companies are directly involved with day-to-day operations in the other country.
- **How does FDI Enter in India?**
  - Foreign Investment in India is governed by the FDI policy announced by the Government of India and the provisions of the **Foreign Exchange Management Act (FEMA), 1999**.
  - FDI enters in India through either of the two routes:
    - Automatic route
    - Government-approval route
  - **Automatic route**:
    - The non-resident or Indian company does not require prior nod of the RBI or government of India for FDI.
  - **Government route**:
    - The government's approval is mandatory.
    - The company will have to file an application through Foreign Investment Facilitation Portal, which facilitates single-window clearance.
    - The application is then forwarded to the respective ministry, which will approve/reject the application in consultation with the **Department for Promotion of Industry and Internal Trade (DPIIT)**, Ministry of Commerce.
    - DPIIT will issue the Standard Operating Procedure (SOP) for processing of applications under the existing FDI policy.
- **Sectors in which FDI is Prohibited:**
  - There are a few industries where FDI is strictly prohibited under any route. These industries are:
    - Atomic Energy Generation
    - Any Gambling or Betting businesses
    - Lotteries (online, private, government, etc.)
    - Investment in Chit Funds
    - Nidhi Company
    - Agricultural or Plantation Activities (although there are many exceptions like horticulture, fisheries, tea plantations, Pisciculture, animal husbandry, etc.)
    - Housing and Real Estate (except townships, commercial projects, etc.)
    - Trading in TDR's
    - Cigars, Cigarettes, or any related tobacco industry
- **FDI in Space Sector:**
  - The Finance Ministry has notified amended rules under the Foreign Exchange Management Act to operationalise its earlier decision to allow up to **100 per cent FDI for the space sector through three categories of liberalised entry routes**.
  - The notification comes ahead of Tesla chief Elon Musk's visit to India early next week.
  - During this visit, he is expected to meet space startups, make a push for his space venture Starlink's plans and announce his electric vehicle (EV) investment plans.
  - Earlier in February, the Union Cabinet had approved the amendment to the FDI policy for the space sector, allowing up to 100 per cent investment in certain categories.
- **100% FDI for Manufacturing, Operation of Satellites:**
  - As per the latest Finance Ministry notification, 100 per cent FDI has been allowed for the space sector category of **manufacturing and operation of satellites**, **satellite data products**, and **ground segment and user segment**.
    - Out of this, up to **74 per cent would be through the automatic route** and government nod would be required for investment beyond 74 per cent.
    - Under the earlier policy, any foreign investment in manufacturing and operating satellites is allowed only with government approval.
  - Automatic **FDI has also been permitted up to 49 per cent for launch vehicles and associated systems or subsystems**, and creation of spaceports for launching and receiving spacecraft. Government approval would be required for investments beyond 49 per cent.
  - Manufacturing of components and systems or sub-systems for satellites, ground segment and user segment will be fully under the 100 per cent automatic route.

7. 2023 GLOF event in Sikkim
GS 3 (Disaster management)

Unusually heavy rainfall preceded glacial lake flooding last Oct: Sikkim govt to NGT

NIKHIL GHANEKAR
NEW DELHI, APRIL 17

IN ITS first attempt at explaining the reasons leading up to last year's flooding that killed over 40 people, the Sikkim government has informed the National Green Tribunal (NGT) that "more than usual heavy rainfall" — possibly a cloudburst — had preceded the glacial lake outburst flood (GLOF) event in the South Lhonak lake.

The state government has based its conclusion on a report by the North East Space Application Centre (NESAC), which supports the Northeastern region with space science and technology. NESAC analysed rainfall before and after the GLOF using satellite data.

Crucially, however, its report mentioned that satellite data for rainfall was not available for about three hours when the incident happened. But, it added, it had rained heavily before the GLOF and there had been chances of more rain.

The Sikkim government's account — filed in its affidavit to the Kolkata bench of NGT, which had taken suo motu cognisance of the October 3 disaster — seems to confirm the initial suspicion of the National Disaster Management Authority that heavy rainfall could have triggered the series of events that resulted in the disaster.

Last year, 40 people were killed and 76 went missing during floods in at least four districts of Sikkim after the water levels of the Teesta River rose as the South Lhonak Lake — a glacial lake situated in the state's northwest at 17,000 feet — burst, leading to the release of water in downstream areas.

In a press release issued on October 4, the NDMA had said that while scientists were investigating the exact cause of the flash floods, the primary reason for the sudden surge appears to be a likely combination of excess rainfall and a GLOF event at South Lhonak Lake.

Later, it also became known that an ice avalanche sank into South Lhonak creating tall waves that led to the flash flood downstream in Teesta, though scientists are still investigating what triggered the ice avalanche.

"The unusually heavy rainfall over the region appears to have resulted in rapid downstream flow of the Teesta River in much greater volumes than precedented and which exceeded the capacity of the dams installed at the hydropower project at Chungthang Dam," the Sikkim affidavit said.

According to the NESAC report on which the affidavit is based, satellite data on rainfall activity was not available from 10:15 pm on October 3 to 1:30 am on October 4, the period during which the GLOF event and the subsequent dam breach occurred.

There was, it said, good amount of rainfall over north western Sikkim around 10 pm on October 3 and conditions were favourable for further heavy rainfall over northern Sikkim area beyond 10 pm and till the lake burst occurred. "However, this could not be confirmed because of the absence of satellite images after 22.15 PM," the report said.

Himanshu Thakkar of the South Asia Network on Dams, Rivers and People said that even if rainfall was a causative factor of the disaster, the Sikkim government should explain what action they took when they got the information about the GLOF.

"Why was the Teesta 3 dam not emptied when there was almost an hour between when they got the information about the GLOF and the point when Teesta 3 dam broke. The fact is South Lhonak lake was known to be a potential source of flood since at least the 1990s due to rapidly changing sizes of glaciers," said Thakkar.

- **Why in News:**
  - The Sikkim government has informed the National Green Tribunal (NGT) that more than usual heavy rainfall — possibly a cloudburst — had preceded the glacial lake outburst flood (GLOF) event in the South Lhonak lake. The state government has based its conclusion on a report by the North East Space Application Centre (**NESAC**).
  - At least 40 people were killed 76 went missing in Sikkim in October 2023 after the South Lhonak Lake - a glacial lake situated in the state's northwest at 17,000 ft - burst due to incessant rains.

- **National Green Tribunal (NGT)**
  - It was established in October 2010 under the National Green Tribunal Act 2010 for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources.
  - It is a specialized body equipped with the necessary expertise to handle environmental disputes involving multi-disciplinary issues.
    - **India became the third country** in the world to set up a specialised environmental tribunal, only after Australia and New Zealand.
- **Structure & Members of NGT**
  - The Principal Bench of NGT has been established in New Delhi, with regional benches in
    - Pune (Western Zone Bench); Bhopal (Central Zone Bench); Chennai (Southern Bench) and Kolkata (Eastern Bench).
  - The Chairperson of the **NGT is a retired Judge of the Supreme Court.**
    - Other Judicial members are retired Judges of High Courts. Each bench of the NGT will comprise of at least one Judicial Member and one Expert Member.
    - Expert members should have a professional qualification and a minimum of 15 years' experience in the field of environment/forest conservation and related subjects.
- **Powers of NGT**
  - The Tribunal is not bounded by the procedure laid down under the Code of Civil Procedure, 1908. **It is guided by principles of natural justice.**
  - The Tribunal is mandated to make and endeavour for disposal of applications or appeals within 6 months of filing of the same.
  - NGT has the power to hear all civil cases relating to environmental issues and questions that are linked to the implementation of **laws listed in Schedule I of the NGT Act.**
  - It should be noted that the NGT has not been vested with powers to hear any matter relating to
    - the Wildlife (Protection) Act, 1972,
    - the Indian Forest Act, 1927 and
    - various laws enacted by States relating to forests, tree preservation etc.

- **Glacial Lake Outburst Floods (GLOFs)**
  - **Glacial lakes**
    - Glacial lakes are large bodies of water that sit in front of, on top of, or beneath a melting glacier.
    - Glacial lakes are formed when a glacier erodes and then melts, filling the depression created by the glacier.
      - They are typically found in high-altitude or polar regions.
      - The more the glacier recedes, the bigger and more dangerous the lake becomes.
    - Glacial lakes are generally divided into two main groups:
      - **Ice-contact lakes**: These lakes have glacier ice that terminates in the lake water.
      - **Distal lakes**: These lakes are distant from glaciers or ice sheets, but are still influenced by their presence.
  - **About GLOFs**
    - Glacial lakes are mostly dammed by unstable ice or sediment composed of loose rock and debris.
    - In case the boundary around them breaks, huge amounts of water rush down the side of the mountains, which could cause flooding in the downstream areas — this is referred to as a GLOF event.
  - **Factors triggering GLOFs**
    - GLOFs can be triggered by various reasons, including **glacial calving**, where sizable ice chunks detach from the glacier into the lake, inducing sudden water displacement.
    - Incidents such as avalanches or landslides can also impact the stability of the boundary around a glacial lake, leading to its failure, and the rapid discharge of water.

- **How did South Lhonak Lake Become Susceptible to GLOF?**
  - **With the rising global temperatures**, glaciers in Sikkim Himalayan have been melting rapidly, giving rise to many glacier lakes and expanding the already existing ones in the region.
  - According to the Sikkim State Disaster Management Authority (SDMA), **there are currently more than 300 glacial lakes in Sikkim Himalayan**, and 10 (including South Lhonak Lake) have been identified as vulnerable to outburst floods.
  - An earthquake of magnitude 4.9 in 1991 near the parent glacier feeding the South Lhonak Lake and the recent earthquake (6.9) in 2011 **may have weakened the boundaries of the lake.**
  - The recent incessant rains caused the lake to burst.

- **North East Space Application Centre (NESAC)**
  - NESAC is a regional space center in **Umiam, Meghalaya** that was established in 2000.
  - It is a joint initiative between the Department of Space (DOS) and the North Eastern Council (NEC).
  - It provides developmental support to the North Eastern Region (NER) using space science and technology.

8. China's Economic Growth and its Challenges
GS 3 (Economy)

Why China economy grew faster than expected, what lies ahead

ANIL SASI
NEW DELHI, APRIL 17

CHINA HAS reported a stronger-than-projected economic growth of 5.3% per cent in the January-March quarter of 2024, despite challenges ranging from a lingering property market downturn to continued sluggishness in domestic demand.

The quarterly gross domestic product (GDP) print is sharply higher than the 4.6-5% growth projected by economists, and more than the 5.2% expansion recorded in the fourth quarter of last year.

EXPLAINED GLOBAL

Drivers of growth

The numbers released by China's National Bureau of Statistics on Tuesday showed growth was propelled by an expansion in the services sector, and a pickup in external demand that boosted export growth, especially in the industrial sector.

Fixed-asset investment grew by 4.5% in the first three months of this year, indicating government support to growth. This is despite the weakness in February when industrial production was disrupted by the Chinese Lunar New Year holiday. There are however questions mark over how enduring the government support would be in the coming months.

Amid the overall positives, the jobless rate has come in at 5.2% for March, which is a remarkably low for an economy said to be undergoing a transition. The unemployment rate for 30 major cities was even lower than the nationwide figure.

Potential headwinds

Economists find it hard to come up with a consistent read-through of the Chinese GDP data because of multiple pressure points. The trade friction with the US is a case in point. Washington is having tripped higher tariffs on Chinese exports, which has progressively clouded Beijing's trade forecasts. The slowdown in some economies of Western Europe, especially Germany, is another major economic risk factor for China.

Retail sales grew by 3.1% in March on a year-on-year basis, compared with a combined growth of 3.5% in January and February. This slowdown in consumption will be a continuing worry for Chinese policymakers going forward, given how strongly retail sales are tied with the consumption story, for a lot of Chinese people, investable surpluses are stuck in real estate investments that are now mired in delays. The PBOC has cut its short operating rate by 10 basis points to 1.70% in February, and the Chinese government has also announced a slew of measures to support the property market, including reducing the minimum down payment ratio for first home loans to 15% from 25%, and for second home loans to 25% from 35%. However, the impact of these measures is yet to be seen.

The broader impact

Any uptick in the growth figures of the world's second largest economy would have an impact on global growth. A more-than-5% growth for a $18.6 trillion economy is no mean feat, especially when it is coming on the back of an average growth of 10% per year in the three decades after the country's economic reforms in 1978.

The World Bank had forecast China's growth to be 5.2% in 2023, before it slowed to a projected 4.5% in 2024. The tough challenge for Beijing, therefore, would be to keep the economic growth momentum at the January-March rate in the coming quarters.

The growth outlook is clouded by certainties and weaknesses in the real estate sector and at anticipated weakness in global demand over the short term. Add to this the continued structural constraints to growth, including high debt levels, an aging population, and slower productivity growth that is in the past, and really be a major stimulus on a set back in the coming quarters.

- **Why in News:** China recently reported a stronger-than-projected economic growth of 5.3% in January-March 2024 quarter despite facing challenges.
- **Drivers of China's Economic Growth**
  - As per China's National Bureau of Statistics, growth was propelled by an expansion in services sector, as well as upbeat external demand boosting export growth, especially in industrial sector. Indicating government support, China's **fixed-asset investment** grew by 4.5% in first three months of 2024 despite weakness in February when Chinese Lunar New Year holidays disrupted industrial production.
- **Challenges Faced**
  - Trade friction with the US (higher tariffs on Chinese exports); Slowdown in some economies of Western Europe, especially Germany; slowdown in consumption as investable surplus stuck in real estate is impacting citizens spending power; Troubled property market with declining investment; High debt levels; Population ageing, Slower productivity growth; Weaker global demand and increased geo-economic tensions; Climate change and extreme weather events.
- **Concerns Raised**
  - The World Bank forecasted China's GDP growth at 5.2% in 2023 slowing to 4.5% in 2024. Economists are attributing the latest growth trends to an ongoing reallocation of investment from troubled real estate to manufacturing and questioning if government has the resolve and resources to continue driving up this growth momentum in coming quarters.
- **Impact of China's Economic Growth**
  - Any uptick in China's growth figures would have its impact on global growth. An above 5% growth for an $18.6 trillion economy is remarkable given the context that its growth averaged 10% a year in 3 decades after 1978 economic reforms. If the property sector **downturn were to extend** beyond initial expectations, it would impact consumer sentiment and spending and could have a cascading impact, putting pressure on suppliers, creditors, and local government revenues, and lead to a slide in public investment (which supported growth during latest quarter).

9. What's Behind Heavy Rainfall in Dubai?
GS 3 (Environment)

WHAT WAS BEHIND THE HEAVY RAINFALL THAT FLOODED DUBAI?

ALIND CHAUHAN
NEW DELHI, APRIL 17

THE UNITED ARAB EMIRATES (UAE) recorded the heaviest rain ever after a severe thunderstorm hit the country on Monday night, killing at least one person, and causing damage to homes and businesses.

According to the state-run WAM news agency, the rain was "a historic weather event" that surpassed "anything documented since the start of data collection in 1949" — that was before the UAE was established in 1971.

Heavy rain is unusual in the UAE, which is an arid, Arabian peninsula country. However, it occasionally rains in the region during the cooler winter months.

What happened?

The thunderstorm began on Monday night, and by Tuesday evening had dumped more than 142 millimetres (mm) of rain on to the desert city of Dubai. Usually, the city witnesses this much rain in a year and a half. An average year sees 94.7 mm of rain at Dubai International Airport.

The heavy rain led to disruption of air travel as flights were either diverted or delayed. Operations at the airport were temporarily suspended for 25 minutes on Tuesday afternoon. Across Dubai, homes were flooded and vehicles were abandoned on roadways. Popular shopping centres like Dubai Mall and Mall of the Emirates were also flooded.

The city of Al Ain, which is nearly 130 kilometres (km) away from Dubai, witnessed record rainfall of 254 mm.

What led to the heavy rainfall?

The primary reason for this heavy rain was a storm system, which was passing through the Arabian peninsula and moving across the Gulf of Oman.

A person walks in flood water in Dubai on Wednesday. Reuters

According to a report by the Associated Press, the rain could have been exacerbated by cloud seeding, a process of spraying salt mixtures in clouds that would result in condensation of the cloud and eventually cause rainfall. The UAE's National Center for Meteorology had flown six or seven cloud-seeding flights before the rain, the AP report said.

Some experts suggested that climate change could also be behind the heavy rain. The UAE's average surface temperature has increased by 0.4 degree Celsius between 2003 and 2022.

Higher temperatures cause evaporation of water not only from land but also oceans and other water bodies, meaning a warmer atmosphere holds more moisture. For every 1 degree Celsius rise in average temperature, the atmosphere can hold about 7% more moisture. This leads to an increase in precipitation intensity, which ultimately can cause severe flooding.

However, it is extremely difficult to attribute any particular extreme weather event to climate change. Multiple factors, like patterns of natural climate variability, such as the El Niño, contribute to such events.

- **Why in News:** The United Arab Emirates (UAE) recorded the heaviest rain ever - **"a historic weather event"** that surpassed anything documented since the start of data collection in 1949.
- **What Exactly Happened in the UAE?**
  - The thunderstorms had dumped **more than 142 mm of rain** onto the desert city of **Dubai** in a day. Usually, the city witnesses this much rain in a year and a half. Across Dubai, **homes and popular shopping centres**(like Dubai Mall) **were flooded and vehicles were abandoned on roadways**. The heavy rains led to disruption of air travel as flights were either diverted or delayed.
- **Why is it an Unusual Weather Event?**
  - **An average year sees 94.7 mm of rain** at Dubai International Airport - the world's 2nd busiest airport, which recorded more than 80 million visitors in 2023. Heavy rains are unusual in the UAE, which is an **arid, Arabian Peninsula country**. However, they **occasionally occur in the region during cooler winter months.**
- **What Led to the Heavy Rains in the UAE?**
  - The primary reason for these heavy rains was **a storm system**, which was passing from the Arabian Peninsula to the Gulf of Oman. According to a report, **rains could have been exacerbated by cloud seeding,** a process of spraying salt mixtures in clouds that would result in condensation of the cloud and eventually cause rainfall.
- **Is Climate Change Responsible for the Event?**
  - The **soaring global temperatures** could also be behind the event. Studies have found that **for every 1-degree Celsius rise in average temperature, the atmosphere can hold about 7% more moisture**, making storms more dangerous. However, **it is extremely difficult to attribute any particular extreme weather event to climate change**. It is because there are multiple factors (like **El Niño and La Niña**) that contribute to such events.

19th April, 2024

1. A world in disarray, a concern about the future
GS 2 (International Relations)

A world in disarray, a concern about the future

- **Why in News:** The global geopolitical landscape is marked by unprecedented uncertainty, with various regions facing conflicts and leadership crises. This editorial explores the factors contributing to this disarray and the implications for international stability.
- **Growing Chaos and Absent Leadership:**
  - **Reckless Leadership**: Leaders like Ukraine's Volodymyr Zelenskyy and Israel's Benjamin Netanyahu contribute to ongoing conflicts without a clear strategy for resolution, exacerbating tensions.
  - **Deterioration of International Order**: The rules-based international order, established post-World War II, is faltering. The weakening of Western influence and the rise of new power dynamics have led to increased instability.
  - **Lack of Global Leadership**: Leaders across nations lack the qualities needed to sustain international peace. The absence of influential and responsible leadership worsens conflicts and complicates resolution efforts.
- **A New Set of Alliances:**
  - **Shift in Power Dynamics**: Great power rivalry appears superficial, with conflicts limited to specific regions like Ukraine and Gaza. China's economic challenges and the diminishing influence of the U.S. and Europe have led to the formation of new alliances.
  - **Economic and Technological Drivers**: Economic forecasts signal potential crises in major economies like the U.S. and Europe. Additionally, advancements in technology, particularly in artificial intelligence, pose new challenges to conventional power structures.
  - **Impact of Oil Politics**: The alliance between China, Russia, and Iran indicates potential disruptions in global oil politics. Economic sanctions lose effectiveness, and the world faces the prospect of a major economic slowdown.
- **The Disruptors:**
  - **Technological Disruptions**: Advances in technology, particularly in artificial intelligence and military surveillance, redefine conventional warfare. Smaller nations leverage technology to challenge traditional military powers.
  - **Nuclear Threats**: With arms control agreements fraying, the development of new nuclear warheads and cruise missiles raises concerns about the escalation of conflicts to nuclear levels.
  - **Doomsday Predictions**: Debates arise regarding the use of low-level battlefield nuclear weapons and the potential escalation to larger nuclear conflicts, highlighting the urgent need for diplomatic resolutions and arms control agreements.

2. A nuanced approach in the South China Sea
GS 2 (International Relations)

India's nuanced approach in the South China Sea

- **Why in News:** India's stance on the South China Sea has undergone significant evolution, reflecting its broader strategic and economic aspirations on the global stage. Against the backdrop of escalating tensions between Manila and Beijing, India's External Affairs Minister's statement during a visit to Manila in March 2024 signals a departure from its previous cautious approach.
- **Policy Evolution:**
  - **From Look East to Act East**: Initially, India's engagement in the South China Sea was primarily economic under the Look East Policy, focused on economic integration and securing energy resources. However, under Prime Minister Narendra Modi's administration, India transitioned to the Act East Policy, emphasizing strategic partnerships and expanded security cooperation with countries in the Indo-Pacific region.
  - **Strategic Partnerships and Security Cooperation**: The Act East Policy emphasizes not only economic integration but also strategic partnerships and expanded security cooperation with countries like Vietnam, Malaysia, Singapore, and the Philippines. India has strengthened its capacities through forward positioning, mission-based deployments, and reinforced maritime domain awareness.
  - **Support for International Maritime Law**: India's engagement reflects support for the principle of freedom of exploration and exploitation of maritime resources within the bounds of international law, particularly UNCLOS. This signifies India's commitment to a rules-based international maritime order.

- **India's Complex Ties with China:**
  - **Historical Border Disputes**: India and China have a history of border disputes, intensified since the Galwan Valley incident of 2020. China's assertive posture and periodic incursions into Indian Territory contribute to regional tensions.
  - **Demonstration of Capability**: India's response to Chinese aggression includes sending a frontline warship to the South China Sea, demonstrating India's capability for asymmetric deterrence and commitment to regional security.
  - **Counter to China's Assertiveness**: India's strategic engagements, including naval exercises and military cooperation with Southeast Asian nations, serve as a counter to China's unlawful assertions in the South China Sea and along India's land borders.
- **The ASEAN Factor:**
  - **Regional Security Implications**: India recognizes the critical importance of the South China Sea to regional security and the global maritime order. Disputes in the region impact principles vital for India's trade and energy transportation routes, as well as those of countries across the globe.
  - **India as a Responsible Stakeholder**: As a responsible stakeholder in the Indo-Pacific, India advocates for a rules-based international maritime order, emphasizing UNCLOS. India's centrality in the Indo-Pacific requires it to buttress the ASEAN position and contribute to regional stability.
  - **Challenges and Imperatives**: While advocating for a rules-based order, India faces challenges due to differences within ASEAN. However, India's nuanced approach aims to safeguard its interests while contributing to maintaining peace, stability, and respect for international law in the Indo-Pacific region.

3. Why has private investment dropped?
GS 3 (Economy)

Why have private investments dropped?

What is private Gross Fixed Capital Formation? When did private investments pick up in India? Will strong consumption spending increase private sector confidence? How do government policies affect private capital formation?

EXPLAINER

Prashanth Perumal

The story so far:

The failure of private investment, as measured by Gross Fixed Capital Formation (GFCF) as a percentage of gross domestic product (GDP) at current prices, to pick up pace has been one of the major issues plaguing the Indian economy. Private investment witnessed a steady decline since 2011-12 and the government has been bridging the gap with debt-creation to keep the economy and ramp up investment. In fact, in 2000, the Centre slashed corporate taxes from 30% to 22% hoping that the move would encourage private investment.

What is GFCF and why does it matter?

GFCF refers to the growth in the size of fixed capital in an economy. Fixed capital refers to things such as buildings and machinery, for instance, which require investment to be created. As private GFCF can serve as a rough indicator of how much the private sector in an economy is willing to invest, high GFCF is also necessary for a healthy growth of investment by the government.

GFCF matters because fixed capital, by helping workers produce a greater amount of goods and services each year, helps to boost economic growth and improve living standards. In other words, it is a key factor in determining the size of the overall output of an economy, and hence what consumers can actually purchase in the market. Developed economies such as the U.S. possess more fixed capital per capita than developing economies such as India.

What is the trend seen in private investment in India?

In India, private investment began to pick up significantly shortly after the economic reforms of the late-1980s and the early-1990s that improved private sector confidence. From independence to economic liberalisation, private investment largely remained either slightly below or above 10% of the GDP. Public investment as a percentage of GDP, on the other hand, steadily rose over the decades from less than 2% of GDP in 1950-51 to eventually private investment as a percentage of GDP. In the 1980s, however, began to drop post-liberalisation with private investment taking on the leading role in fixed capital formation.

The growth in private investment lasted until the global financial crisis of 2007-08. It rose from around 10% of GDP in 1980-81 to around 27% in 2007-08. From 2010-12 onwards, however, private investment began to drop and hit a low of 19.6% of the GDP in 2020-21.

Why has private investment fallen?

Many economists in India have blamed low private consumption expenditure as the primary reason behind the failure of private investment to pick up over the last decade, and particularly since the onset of the pandemic. Their reasoning is that strong consumption spending is required to give businesses the confidence that there will be sufficient demand for their goods and services in the future to justify building fixed capital. Hence these economists have advised that the government should put more money into the hands of the people to boost consumption expenditure, and thus help kick start private investment.

However, the recent increase in private consumption has not led to a rise in private investment in India. In fact, a drop in consumption spending has boosted private investment rather than dampening it. Private final consumption expenditure dropped steadily from nearly 56% of GDP in 1950-51 to hit a low of 54% in 1973-74. It then rose by the next year to where private investment hit a peak and began its long decline. And since 2011-12, private consumption has risen while private investment has witnessed a worrying fall as a percentage of GDP. The inverse relationship between consumption and investment is logical because the money that is allocated towards savings and investment, either by the government or by private businesses, comes at the cost of lower consumption expenditure. Other economists believe that structural problems may likely be the reason behind the slowdown and fall in private investment as a percentage of GDP over the last decade or so. They have cited unfavourable government policy and policy uncertainty as major issues affecting private investment. The rise in private investment in the 1990s and the 2000s correlated with the pace of economic progress made in the 1990s. The drop in private investment, on the other hand, correlated with the slowdown in the pace of reform in the last two decades under both the UPA (second term) and NDA governments. Further, policy uncertainty can discourage private investment as investors expect stability to carry out risky long-term projects.

What about low private investment?

The biggest cost of low private investment would be slower economic growth as a larger fixed capital base is crucial to boost economic output. The push by the government to increase investment is also seen as a negative by some who believe that it crowds out private investment.

Others, however, think that government investment compensates for the lack of private investment. It should be noted that public capital expenditures are considered to be better allocators of capital than public officials, helping avoid wasteful spending. Further, taxes imposed to raise money for public spending can be a significant drag on the economy.

THE GIST

Gross Fixed Capital Formation refers to the growth in the size of fixed capital in an economy. Fixed capital refers to things such as buildings and machinery, for instance, which require investment to be created.

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However, the recent increase in private consumption has not led to a rise in private investment in India. In fact, a drop in consumption spending has boosted private investment rather than dampening it. Private final consumption expenditure dropped steadily from nearly

- **Why in News:** The decline in private investment, particularly evident since 2011-12, remains a significant challenge for the Indian economy. Despite various measures undertaken by the government, private investment has failed to regain momentum. Understanding the factors contributing to this decline is crucial for devising effective policy interventions.
- **Understanding GFCF and its Significance**
  - **Definition and Importance:** GFCF, or Gross Fixed Capital Formation, denotes the growth in the size of fixed capital within an economy. Fixed capital, encompassing assets like buildings and machinery, requires investment for creation. This metric serves as an indicator of the private sector's willingness to invest, crucial for economic growth and improved living standards.
  - **Influence on Economic Growth:** Fixed capital plays a pivotal role in boosting economic growth by enhancing the productivity of workers, ultimately leading to increased output and improved standards of living. The level of fixed capital within an economy significantly influences its overall production capacity and, consequently, the purchasing power of consumers.
- **Trends in Private Investment in India**
  - **Historical Perspective:** Private investment in India witnessed a notable surge post the economic reforms of the late-1980s and early-1990s, signifying enhanced confidence within the private sector. However, since 2011-12, there has been a consistent decline in private investment as a percentage of GDP, marking a departure from the earlier growth trajectory.
  - **Recent Developments:** The trajectory of private investment reached its zenith around 2007-08 but has since experienced a downward trend. Despite governmental efforts, private investment dwindled to 19.6% of GDP in 2020-21, reflecting a concerning decline.
- **Factors behind the Drop in Private Investment**
  - **Impact of Consumption Expenditure:** Many economists attribute the subdued private investment to **low private consumption expenditure**, especially in the aftermath of the pandemic. They argue that robust consumer spending is essential to instil confidence among businesses regarding future demand, thereby encouraging investment.
  - **Policy Environment and Uncertainty:** Conversely, structural issues and policy uncertainty are also deemed significant contributors to the decline in private investment. Unfavourable government policies and regulatory uncertainties have deterred private investors from committing to long-term projects, exacerbating the investment slowdown.

- **Historical Correlations:** Interestingly, historical data challenges the notion that an increase in private consumption directly spurs private investment in India. Moreover, the inverse relationship between consumption and investment suggests a more complex interplay of economic factors influencing investment decisions.

- **Implications of Low Private Investment**
  - **Economic Growth Concerns:** The stagnation in private investment raises concerns about its adverse impact on economic growth. A robust fixed capital base is indispensable for driving economic output, and the current trend threatens to impede the nation's growth trajectory.
  - **Role of Government Investment:** While government-led investments may mitigate the shortfall in private investment, concerns regarding crowding out private sector involvement and inefficiencies in resource allocation persist. Private investors are often perceived as more adept at capital allocation, thereby fostering economic efficiency.

4. Nirbhay cruise missile
GS 3 (Science and Tech)

- **Why in News:** DRDO successfully test fires indigenous long range subsonic cruise missile
- **More on News:**
  - Nirbhay (lit. 'Fearless') is a long range, all-weather, subsonic Cruise Missile.
  - The missile can be Launched from Multiple Platforms and is capable of carrying conventional and nuclear warheads.
  - Nirbhay is powered by a solid rocket booster.
  - The missile, also known as Indigenous Technology Cruise Missile (ITCM), is equipped with an indigenous propulsion system and the Manik turbofan engine.
  - The missile is claimed to have sea-skimming and loitering capability.

Indigenously built cruise missile successfully tested

The Defence Research and Development Organisation (DRDO) conducted a successful flight test of a "long range subsonic indigenously developed cruise missile" from the Integrated Test Range (ITR) in Chandipur off the coast of Odisha, the DRDO announced on Thursday. "The missile followed the desired path using waypoint navigation and demonstrated very low altitude sea-skimming flight. During the test, all subsystems performed as per expectation," the DRDO said in a statement. The details or the specifications of the missile were not mentioned but the missile looked a lot similar to the Nirbhay subsonic cruise missile.

- **Cruise Missile**
  - A cruise missile is an unmanned selfpropelled (till the time of impact) guided vehicle that
  - sustains flight through aerodynamic lift for most of its flight path and whose primary mission is to place
  - an ordnance or special payload on a target. They fly within the earth's atmosphere and use jet engine
  - technology.
  - These vehicles vary greatly in their speed and ability to penetrate defences.Cruise missiles can be categorised by size, speed (subsonic or supersonic), range and whether launched from land, air, surface ship or submarine

5. Activity-based curriculum drawn up for anganwadis
GS 2 (Governance)

- **Why in News:** The National Framework of Early Childhood Stimulation, 2024, underscores the critical role of early learning in shaping a child's development. With a focus on children from birth to the age of three, this framework emphasizes the importance of age-appropriate activities conducted by parents, anganwadi staff, and ASHA workers to lay a strong foundation for future learning.

Activity-based curriculum drawn up for anganwadis

NEP-based framework document says learning begins at birth; staff in 14 lakh anganwadis to be trained and parents encouraged to engage toddlers in activities to reach key milestones

Maitri Porecha
NEW DELHI

A child's learning begins at month zero, emphasises the National Framework of Early Childhood Stimulation, 2024, which lays down month-by-month activities to be conducted by parents, anganwadi staff and ASHA workers for children from birth to the age of three.

The framework document has been finalised by an internal committee comprising representatives from the Ministries of Women and Child Development, Health and Family Welfare and Education, the Department of School Education and Literacy, the National Council of Educational Research and Training, the Institute of Home Economics, the University of Delhi and civil society organisations.

Continuous learning

Titled 'Navchetana', the activity-based curriculum follows the National Education Policy, 2020 that calls for a continuum of learning. Staff in 14 lakh anganwadis will be given training in the curriculum.

The curriculum involves talking, playing, moving, listening to music and sounds, and simulation of all the senses – particularly sight and touch in order to reach developmental milestones across domains, and develop "early language, and emergent literacy and numeracy".

As much as 75% of the brain develops in the first three years of a child's life, says Namya Mahajan, a member of the internal committee and founder of Rocket Learning. The national framework provides detailed information on the importance of brain development in the first three years, and step by step instructions for caregivers and frontline workers on conducting early stimulation activities, she said.

This involves getting the child's attention, communicating with and responding to the child, introducing age and skill appropriate activities for play, and following the child's lead during the activities.

It also involves helping the child with a new task, and praising the child for her efforts.

The document entails 36 sets of activities for children from months 0 to 36. It encourages the use of household objects such as cups, bottles or leftover pieces of fabric. Activities involve reaching for objects, imitating sounds, spinning bangles, putting objects in and out of a jar and removing knots in a handkerchief in the first year.

Step by step

After a year, the activities include encouraging children to feed themselves and explore the house, involving them in the kitchen, playing with dough and introducing them to a mirror.

At the age of 18 months, children are encouraged to scribble with a crayon and at 24 months, the recommended activities include shape sorting and matching. By the age of three, children are introduced to a cycle, asked to say their names and identify colours.

The framework says the activities will help identify children with developmental delays. In such a situation, the anganwadi worker or parent can adapt by picking up activities recommended for children a few months younger.

New approach: The new curriculum involves talking, playing and listening to music. RAJ K PAREKH

- **Fostering Continuous Learning**
  - **'Navchetana' Curriculum:** Aligned with the National Education Policy, 2020, 'Navchetana' introduces an activity-based curriculum aimed at fostering continuous learning from infancy to toddlerhood.
  - **Staff Training Initiatives:** Training programs for staff in 14 lakh anganwadis facilitate effective implementation of the curriculum, equipping frontline workers with the necessary skills and knowledge.
  - **Multifaceted Engagement:** The curriculum emphasizes diverse activities encompassing talking, playing, and sensory stimulation, promoting holistic development across various domains.

- **Key Components of the Curriculum**
  - **Stimulation of Senses:** Recognizing the importance of sensory experiences in early learning, the curriculum prioritizes activities that engage children in sight, touch, sound, and movement.

- **Brain Development Focus:** With 75% of brain development occurring in the first three years, the curriculum provides detailed instructions to optimize cognitive growth through targeted stimulation activities.
- **Language and Literacy Promotion:** Through age-appropriate activities, the curriculum aims to foster early language acquisition, emergent literacy, and numeracy skills critical for future academic success.

- **Progressive Activities**
  - **Developmental Milestones:** The curriculum delineates 36 sets of activities aligned with developmental milestones, enabling caregivers to track and support children's progress.
  - **Personalized Interventions:** In cases of developmental delays, the framework empowers caregivers to adapt activities and interventions tailored to individual children's needs, ensuring inclusive learning environments.
  - **Empowering Caregivers:** By providing step-by-step guidance and leveraging household objects, the curriculum empowers caregivers to facilitate meaningful interactions and learning experiences conducive to children's holistic development.

6. Srinagar
Recent events of importance

Srinagar likely to be tagged as World Craft City from India

The World Crafts Council International (WCCI), a Kuwait-based organisation working on recognition and preservation of traditional crafts, has picked Srinagar for mapping its craft clusters before its final nomination as the World Craft City (WCC) from India this year. A three-member team of the WCCI is in the city to inspect craft clusters, processes involved, and the status of artisans. The final announcement about the city's inclusion is likely in the next two months. "The craft work we witnessed so far in Srinagar is flawless. The world needs to know about it," a WCCI member, told *The Hindu*.

- **Why in News:** The World Crafts Council International (WCCI), a Kuwait-based organisation working on recognition and preservation of traditional crafts across the globe, has picked Srinagar for mapping its craft clusters before its final nomination as the World Craft City (WCC) from India this year.
- **More on News:**
  - The WCC-World Craft City Programme, a groundbreaking initiative launched in 2014 by the **World Crafts Council AISBL (WCC-International)** in recognition of the pivotal role local authorities, craftspeople, and communities play in cultural, economic, and social development worldwide.
  - It Showcase the reputation and assets of creative cities/regions specializing in specific craft disciplines, raw materials, articles, or a variety of crafts on a global platform.
  - Promote the exchange of know-how, experiences, and best practices in various craft fields at the national, regional, and international levels.
  - Srinagar has several clusters where artisans were working on local crafts like Pashmina shawls, carpets, papier mâché etc.
  - Srinagar, spread over 416 square kilometres, has a registered artisan base of 20,822 craftsmen, who are involved in multiple disciples of papier mâché, walnut wood carving, hand-knotted carpet, Kani shawl, Khatamband, pashmina, Sozni craft etc.
  - The total craft related workforce in Srinagar stands at 1.76% approximately.
  - The contribution of the handicraft to the overall economy of J&K stood at 2.64% by 2016-17.

7. Infectious respiratory particles or IRPs
GS 2 (Health)

WHO defines pathogens that transmit through air

Pathogens that transmit through the air will be described by the term 'infectious respiratory particles' or IRPs, according to the World Health Organization (WHO). The world health body has thus ended the lack of a common terminology to describe the transmission of these pathogens, which was particularly challenging during the global COVID-19 pandemic. The announcement on Thursday came following wide-ranging consultations across multiple steps in 2021-2023. "Varying terminologies contributed to challenges in public communication and efforts to curb the transmission of the pathogen," the WHO noted.

- **Why in News:** Pathogens that transmit through the air will be described by the term 'infectious respiratory particles' or IRPs, according to the World Health Organization (WHO).
- **More on News:**
  - There was a lack of a common terminology to describe the transmission of these pathogens, which was particularly challenging during the global COVID-19 pandemic.
  - Varying terminologies highlighted gaps in common understanding and contributed to challenges in public communication and efforts to curb the transmission of the pathogen.
  - Individuals infected with a respiratory pathogen can **generate and expel infectious particles containing the pathogen through their mouth or nose** by breathing, talking, singing, spitting, coughing, or sneezing, and these particles should be described with the term IRPs.
  - IRPs exist on a continuous spectrum of sizes, and no single cut-off points should be applied to distinguish smaller from larger particles.
  - Under the umbrella of 'through the air transmission', two descriptors can be used:
    - **Airborne transmission or inhalation**, for cases when IRPs are expelled into the air and inhaled by another person.

- **Direct deposition**, for cases when IRPs are expelled into the air from an infectious person, and are then directly deposited on the exposed mouth, nose or eyes of another person nearby, then entering the human respiratory system and potentially causing infection.

8. Mount Ruang volcano
GS 3 (Disaster Management)

- **Why in News:** Indonesia's Mount Ruang volcano erupted five times in a row, prompting the closure of a nearby airport and a tsunami alert.
- **More on News:**
  - Ruang is situated in the **Sangihe Islands arc**, North Sulawesi, Indonesia.
  - It comprises an island that is 4 by 5 kilometers wide, with a summit containing a partial lava dome reaching an altitude of 725 meters (2,379 ft).
  - From its summit, peaks such as Klabat, Siau, and Ternate can be observed in the south, north, and east, respectively.
  - The top of the mountain is partially filled with a lava dome formed as a result of activity in 1904.

Indonesia evacuates thousands after volcano erupts, raises tsunami threat

Agence France-Presse
MANADO

Indonesian rescuers raced to evacuate thousands of people on Thursday after a volcano erupted five times, forcing authorities to close a nearby airport and issue a warning about falling debris that could cause a tsunami.

Mount Ruang's crater flamed with lava against a backdrop of lightning bolts overnight after erupting four times on Wednesday, pushing an ash column more than a mile into the sky and forcing authorities to raise its alert level to the highest of a four-tiered system.

Taka, a local fisherman who only gave one name, was at sea helping people to safety by boat when the crater unleashed a fiery orange column. The volcano, which sits on a remote island in Indonesia's outermost region with a peak 725 metres above sea level, was still billowing a column of smoke up to 800 metres high on Thursday morning, officials said.

Houses on the neighbouring remote island of Tagulandang were riddled with holes from falling volcanic rocks on Thursday, rescuers said.

"The current condition, particularly the road condition, is covered by volcanic material," local rescuer Ikram Al Ulah said the Tagulandang seaport.

There were no reports of deaths or injuries but authorities said they were rushing to evacuate more than 11,000 residents from the area around Tagulandang, home to around 20,000 people.

Authorities also evacuated a prison on Tagulandang island, ferrying 17 inmates along with 11 officials and 19 residents by boat to Likupang seaport in northern Sulawesi island.

Authorities also warned of a possible tsunami as a result of the eruptions.

Indonesia, a vast archipelago nation, experiences frequent seismic and volcanic activity due to its position on the Pacific "Ring of Fire", an arc where tectonic plates collide that stretches from Japan through Southeast Asia and across the Pacific basin.

Catastrophic activity: Mount Ruang volcano in Indonesia, during a series of eruptions on Wednesday. AP

- **Types of Volcanoes:**
  - **Stratovolcanoes vs. Shield Volcanoes**
    - **Stratovolcanoes:** Steep, cone-shaped with more viscosity. Strato Volcanoes comprise the **largest percentage** (~60%) **of** the **Earth's individual volcanoes**, and most are characterized by **eruptions of andesite and dacite**, **lavas** that are **cooler and more viscous than basalt.**
    - **Shield Volcanoes:** Low-profile, resembling a shield lying on the ground.
  - **Variety of Volcanic Features**
    - Cinder cones, lava domes, and other features form from erupted magma
    - Geological processes shape the diverse forms of volcanoes.

9. Nestle baby food sold in India has higher sugar content
GS 2 (Health)

- **Why in News:** Nestle, a global giant in food and beverage, has come under scrutiny due to variations in sugar content in its baby food products sold across different regions, particularly in India, Africa, and Latin America compared to European markets.
- **Key Findings of the Report**
  - A report by the Swiss NGO **Public Eye and International Baby Food Action Network (IBFAN)** revealed significant variations in sugar content in Nestlé's baby food products across different regions.
  - Products such as Cerelac for six-month-old babies, which contain **no added sugars in the UK and Germany,** were found to have **substantial added sugar content in India, Ethiopia, and Thailand**.
  - The disparity in sugar content raises concerns about adherence to nutritional standards and regulatory oversight in different markets.

Report flags sweetened Nestlé products: how added sugar harms babies

RISHIKA SINGH & ANOMNA DUTT
NEW DELHI, APRIL 18

NESTLÉ'S PRODUCTS for babies sold in India and other Asian, Latin American, and African countries have significant added sugar, while those same products sold in Europe or the UK are, a report by the Swiss investigative organisation Public Eye and the nonprofit International Baby Food Action Network has said.

Nestlé is the world's biggest packaged food company and, according to Public Eye, controls 20% of the baby food market, valued at nearly $70 billion. The report said that in India, all 15 products of Nestlé's Cerelac brand, meant for babies of ages 6 months and older, contained on average 2.7 grams of added sugar per serving. The sugar content was declared on the packaging in India.

A spokesperson for Nestlé India said "declaration of added sugars is optional" and "over the past few years, we have already reduced added sugars by over 30%". The spokesperson said compliance with food safety guidelines "is an essential characteristic of Nestlé India and we will never compromise on that".

The Food Safety and Standards Authority of India (FSSAI), did not comment on the report. However, government officials said the full reports of the samples from India will be sought, which will then be examined by the FSSAI's subject-expert committee.

What are added sugars?

Sugar occurs naturally in some foods. According to the American Heart Association (AHA), sugars "from dairy (lactose) and fruit (fructose) and products that contain milk (such as yogurt, milk or cream) or fruit (fresh, dried) contain some natural sugars".

Added or free sugars are sweetening agents that are added to processed foods and beverages. Added sugars can "include naturally occurring sugars such as white sugar, brown sugar, and honey, as well as other caloric sweeteners that are chemically manufactured (such as high fructose corn syrup)," the AHA says.

Added sugars are considered to be more harmful than naturally occurring sugars found in fruits and milk.

Why are added sugars especially harmful for babies?

The World Health Organization (WHO) advises against the introduction of added sugars before the age of 2. The introduction of added sugar to baby foods can contribute to the development of addictive eating habits and a preference for sweet tastes from an early age.

"Exposure to excessive sugar can lead to weight gain, obesity and an increased risk of developing chronic diseases such as type 2 diabetes, heart disease, and certain cancers later in life. Additionally, high sugar consumption in infancy has been associated with an increased risk of dental caries (tooth decay) and poor nutrient intake, as sugary foods often displace more nutritious options in a child's diet," Dr Richa Chaturvedi, an endocrinologist at Indraprastha Apollo Hospitals, New Delhi, said.

Dr Arun Gupta of the Breastfeeding Promotion Network of India (BPNI), which was the India partner for the report, said, "When you add sugars to baby formula feed, babies are much more likely to drink it up because of the pleasing taste. With happy parents purchasing the products, it boosts the bottomline of companies. And they can get by because the regulations are weak."

How much sugar is too much?

In 2015, the WHO called on countries to reduce free sugar intake in children and adults to 10% of their total energy intake. It also made a conditional recommendation of cutting it to 5% or 25 grams per day. The recommendation did not apply to natural sugars.

A UNICEF-supported study from December 2023 found that 448 of the 1,660 infant cereals, snacks, and ready-to-eat meals marketed as young children in Southeast Asia included added sugars and sweeteners.

What do Indian guidelines say?

The Indian regulation that prescribes standards for infant nutrition does not prescribe any upper limit for added sugar. It prescribes requirements for various macronutrients such as proteins, fats, and carbohydrates, and micronutrients such as vitamin C and D, iron, and zinc.

The regulations allow for the use of corn syrup and malt in cereal-based infant food. It also allows the use of sucrose and fructose as a carbohydrate source, provided it makes up less than 20% of the carbohydrates in the food.

- **Regulatory Standards and Compliance**
  - **Global Recommendations vs. Local Regulations:** The World Health Organization (WHO) recommends no added sugars in foods for children under three, setting a global standard for infant nutrition. However, Indian regulations permit limited amounts of sucrose and fructose in baby food, creating discrepancies in nutritional guidelines across regions.
  - **Challenges in Uniform Compliance:** Inconsistencies in regulatory standards highlight challenges in ensuring uniform compliance and oversight in the infant nutrition industry. This raises questions about the adequacy of regulatory frameworks to safeguard infant health across different markets.
- **Impact on Child Health**
  - **Risk of Long-Term Health Issues:** Introduction of added sugars in infant diets can lead to the development of addictive eating habits, contributing to long-term health risks such as obesity and diabetes. Early exposure to high sugar content in baby foods may predispose children to a preference for sweet tastes, potentially influencing dietary preferences and habits later in life.

- **Importance of Early Nutrition:** WHO's warning about the adverse effects of added sugar emphasizes the critical importance of ensuring optimal nutrition during early childhood for long-term health outcomes. The disparity in sugar content raises concerns about the nutritional adequacy of infant diets and its impact on public health.

- **Corporate Responsibility**
  - **Commitment to Nutritional Improvement:** Nestlé India's commitment to reducing added sugars in their products reflects corporate awareness of the need for nutritional improvements and compliance with global standards.
  - **Adherence to Standards:** Emphasizing adherence to CODEX standards and local specifications demonstrates Nestlé's recognition of the importance of regulatory compliance in maintaining consumer trust.
  - **Evolution of Corporate Responsibility:** The company's assertion of prioritizing nutritional quality and compliance highlights the evolving landscape of corporate responsibility towards public health and consumer well-being. However, questions remain regarding the efficacy of corporate self-regulation in ensuring the nutritional adequacy of infant products.

NEELOFER CIVIL SERVICE CLASSES UPSC WITH NSCS DELHI IAS

20th April 2024

1. SC assails poll-time prohibitory orders
GS 2 (Elections)

SC assails poll-time prohibitory orders

Krishnadas Rajagopal
NEW DELHI

Decide applications seeking permission for yatras, meetings in three days, Bench tells Magistrates

The Supreme Court on Friday questioned the basis of Executive Magistrates issuing blanket orders prohibiting yatras to uphold democratic and electoral values, dharnas and public meetings during the entire duration of the Lok Sabha election, till the declaration of poll results.

"How can such orders be passed?" Justice B.R. Gavai exclaimed in open court. The indignant query from the Bench, also comprising Justice Sandeep Mehta, came when advocates Prashant Bhushan, Prasanna S. and Cheryl D'Souza, for petitioner-activists Aruna Roy and Nikhil Dey, said the prohibitory orders under Section 144 of the Criminal Procedure Code had been issued in the past six months on the ground of elections.

Authorities deal with applications seeking permission for public meetings and yatras with a deafening silence, keeping them pending without responses indefinitely, Mr. Bhushan said.

The petitioners said the phenomenon had been seen in many States, including Rajasthan, Gujarat and Delhi. The Bench directed Magistrates to decide the applications within three days.

"These blanket prohibitory orders directly affect the civil society and general public from freely discussing, participating, organising or mobilising on issues affecting them ahead of elections," Mr. Bhushan submitted in the court.

"The conduct of elections – being the ostensible reason for invoking Section 144 – is neither a valid ground recognised under Section 144, nor an emergent situation to justify imposition of sweeping prohibitory orders," Mr. Bhushan submitted.

The court issued notice to the Union government and the Election Commission of India.

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- **Why in News:** The Supreme Court questioned the basis of Executive Magistrates issuing blanket orders prohibiting yatras to uphold democratic and electoral values, dharnas and public meetings during the entire duration of the Lok Sabha election, till the declaration of poll results.
- **Legality and Basis of Orders**
  - **Judicial Scrutiny:** The recent remarks by the Supreme Court indicate a growing judicial scrutiny of the legality and necessity of blanket prohibitory orders issued during election periods. This scrutiny highlights the need for a clear legal basis and justification for such orders, emphasizing the principle of proportionality.
  - **Executive Discretion vs. Democratic Rights:** The debate revolves around the balance between executive discretion and democratic rights. While authorities argue for the need to maintain law and order during elections, critics raise concerns about the infringement of fundamental rights, including the right to assembly and expression.
  - **Constitutional Validity:** Advocates argue that prohibitory orders issued solely on the grounds of elections lack constitutional validity. They emphasize that elections, while significant, do not constitute an emergent situation justifying the imposition of sweeping restrictions on public activities.
- **Impact on Democratic Rights**
  - **Hindrance to Political Participation:** Blanket prohibitory orders significantly hinder political participation by restricting public gatherings, protests, and awareness campaigns. This impediment undermines the democratic process by limiting citizens' ability to engage in political discourse and activism.
  - **Suppression of Civil Society:** The prolonged duration of these orders suppresses civil society initiatives aimed at promoting voter awareness and monitoring election processes. Such suppression undermines the role of civil society in ensuring free and fair elections and fosters a culture of restricted civic engagement.
  - **Effect on Freedom of Expression:** The fear of reprisal due to prohibitory orders creates a chilling effect on freedom of expression. Citizens, fearing legal repercussions, refrain from voicing their opinions or organizing peaceful demonstrations, thereby stifling dissent and diversity of political discourse.
- **Lack of Response to Applications**
  - **Administrative Inefficiency:** The lack of response from authorities to applications seeking permission for public gatherings reflects administrative inefficiency. Many applications remain pending indefinitely, depriving citizens of their right to assemble and express their views.
  - **Violation of Due Process:** The failure to respond to applications violates due process and procedural fairness. Citizens are left in a state of uncertainty, unable to plan or organize events effectively, which undermines the principle of rule of law.
  - **Obstruction of Democratic Engagement:** The non-responsive approach of authorities obstructs democratic engagement by creating barriers to civic participation. This obstruction undermines the vibrancy of democracy and erodes trust in the electoral process.
- **Section 144**
  - **Section 144** of CrPC is meant for **emergency situations.**
  - It empowers a district magistrate, a sub-divisional magistrate, or any other executive magistrate empowered by the state government, to issue orders to prevent and address urgent cases of apprehended danger or nuisance.
  - The written order by the officer may be directed **against an individual or individuals residing in a particular area, or to the public at large**.
  - In urgent cases, the magistrate can pass the order without giving prior notice to the individual targeted in the order.
- **Powers under the Provision:**
  - The provision allows the magistrate to direct any person to **abstain from a certain act**, or to pass an order with respect to a certain property in the possession or under the management of that person.
  - This usually means **restrictions on movement, carrying arms, and unlawful assembly**. It is generally understood that an **assembly of three or more people is prohibited** under Section 144.

- When aimed at restricting a single individual, the order is passed if the magistrate believes it is likely **to prevent obstruction, annoyance or injury to any lawfully employed person**, or a danger to human life, health or safety, or a disturbance of the public tranquility, or a riot, etc.
  - **Time limit**: Orders passed under Section 144 remain in force for **two months**, unless the state government considers it necessary to extend it. But in any case, the total period for which the order is in force cannot be more than **six months**

2. Heat or polls, Thrissur Pooram still a major draw
GS 1 (Art and Culture)

Heat or polls, Thrissur Pooram still a major draw

Mini Muringatheri
THRISSUR

Dripping with sweat, people huffed and puffed. It was a sultry Friday. Neither the balmy weather nor the election fervour could deter the spirit of pooram lovers. A sea of humanity converged at the Thekkinkadu Maidan to savour the glory of Thrissur Pooram.

The Thrissur Pooram signifies a symbolic meeting of the deities of 10 famous temples in the region. The Thiruvambadi and Paramekkavu temples are the main participants of the 30-hour-long event.

Processions taken out

The meticulously planned festivities began with the arrival of Kanimangalam Sastha early in the morning. It was followed by processions (Cherupoorams) from Bhagavathy temples of Ayyanthole, Karamukku, Lalur, Neythilakkavu, Choorakkattukara, Chembukkavu, and Sastha temple of Panamukkumpally. Accompanied by percussion ensembles, these deities were brought on caparisoned tuskers to the Sree Vadakkunnathan temple.

Festival-carnival

Thrissur Pooram is a mixture of ceremonies, traditional ensembles, pyrotechnic shows, and elephant parades. It is a socio-religious festival and carnival put together.

Percussion ensemble

One gets to hear the State's best percussion ensembles at Thrissur Pooram. The Ilanjithara Melam of the Paramekkavu Devaswom and the Thiruvambadi Devaswom's Melam at Sreemoolasthanam are the best platforms for Pandimelam. The Madathil Varavu ceremony of Thiruvambadi will have the best Panchavadyam played in the State.

The Kudamattam, in which colourful parasols are displayed atop caparisoned elephants, is the most spectacular event of pooram. Each team competes with the other to display the most attractive parasols. Rama Lalla and Ayodhya temple were included in the themes of special umbrellas this year.

Early morning fireworks are another essential part of Thrissur Pooram.

Tight security

There was tight security for the pooram, with the deployment of more than 3,500 police personnel.

Though strictly conservative in nature, the pooram is fun with roaring crowds, loud music, and plenty of food and drinks. Wayside hawkers were busy catering to revellers with peanuts, chilli bajji, and ice creams. Fortune-tellers were also present.

The festival will end after Pakal Pooram on Saturday.

Festival highlight: People watching Kudamattam, the most spectacular event of Thrissur Pooram, on Friday. K.K.NAJEEB

- **Why in News:** The Thrissur Pooram, a grand festival celebrated in Kerala, continues to captivate thousands despite the scorching heat and concurrent political fervor. It symbolizes the convergence of deities from 10 renowned temples in the region, with the Thiruvambadi and Paramekkavu temples as the central figures.
- **Festive Processions and Ceremonies**
  - **Processions of Divine Splendor:** The festival commences with the arrival of Kanimangalam Sastha, followed by a series of processions (Cherupoorams) from various Bhagavathy temples Caparisoned tuskers, accompanied by melodious percussion ensembles, carry the deities to the Sree Vadakkunnathan temple, creating a spectacle of divine grandeur.
  - **Traditional Ensembles and Pyrotechnics:** Thrissur Pooram is a harmonious blend of traditional ceremonies, captivating ensembles, and breathtaking pyrotechnic displays. It offers a kaleidoscope of cultural expressions, enhancing the socio-religious fabric of the event.
- **Musical Extravaganza and Artistic Competitions**
  - **State's Finest Percussion Ensembles:** The festival is renowned for showcasing the State's best percussion ensembles. The Ilanjithara Melam of Paramekkavu Devaswom and Thiruvambadi Devaswom's Melam at Sreemoolasthanam are prestigious platforms for Pandimelam, captivating audiences with their rhythmic brilliance.
  - **Spectacular Artistic Competitions:** The **Kudamattam**, featuring elaborately adorned elephants with colorful parasols, is a visual feast. Teams compete to display the most attractive parasols, often incorporating themes such as Rama Lalla and Ayodhya temple. Additionally, the Madathil Varavu ceremony presents the best Panchavadyam performance in the State.
- **Security Measures and Festive Atmosphere**
  - **Tight Security Arrangements:** Despite its festive nature, Thrissur Pooram is meticulously organized with tight security, deploying over 3,500 police personnel. This ensures the safety of participants and spectators, allowing everyone to enjoy the festivities without concerns.
  - **Joyous Revelry and Culinary Delights:** The pooram exudes a joyous ambiance filled with lively crowds, vibrant music, and a plethora of food and drinks. From savory snacks like peanuts and **chilli bajji** to delectable ice creams, wayside hawkers cater to the culinary desires of the attendees.

3. Forests a national asset and major contributor to financial wealth: SC
GS 3 (Environment)

Forests a national asset and major contributor to financial wealth: SC

The judgment comes at a pivotal time when the controversial Forest Conservation (Amendment) Act of 2023 has attracted widespread criticism; court says concepts of carbon credit and green accounting to evaluate national wealth now a reality

Krishnadas Rajagopal
NEW DELHI

The Supreme Court has asserted in a judgment that forests in India are a national asset and a major contributor to the nation's financial wealth.

"It is the spirit of the forest that moves the earth," a Bench headed by Justice M.M. Sundresh observed in a judgment based on an appeal filed by the State of Telangana against a High Court decision "graciously gifting" forest land to a private person. The State's forest officials had made matters worse by filing conflicting affidavits in court. The apex court ordered ₹5 lakh in costs from both the State government and the private persons. The State was asked to open an enquiry against its own forest officials.

The judgment has come at a pivotal time when the controversial Forest (Conservation) Amendment Act (FCAA) 2023, has attracted widespread criticism. The FCAA is accused of giving a free hand to States to regularise encroachments in protected forests and determine diversions of forestlands. The Act has been criticised for paving the way for the commercial exploitation of forests.

"Depletion and disappearance of forests would ultimately lead to a massive extinction of organisms," Justice Sundresh observed.

The court said concepts of carbon credit and green accounting to evaluate a nation's wealth had become a reality. "A country with excess forest cover would be in a position to sell its excess carbon credit to the one in deficit. This in turn underlines the significance of forests in contributing to the financial wealth of a country," the court noted.

A major sink

The judgment said India's forests serve as a major sink of carbon dioxide (CO2). The value of mitigation has put a conservative $5 per tonne of CO2 locked in forests, this huge sink of about 24,000 mt of CO2 is worth $120 billion, or ₹6 lakh crores.

The court quoted from a 2009 report of the Ministry of Environment and Forests titled *'India's Forest and Tree Cover: Contribution as a Carbon Sink'*, which said that from "1995 to 2005, the carbon stocks stored in our forests and trees have increased from 6,245 million tonnes (mt) to 6,662 mt, registering an annual increment of 38 mt of carbon or 138 mt of CO2 equivalent".

Justice Sundresh highlighted the protective role of forests against climate change. It referred to a 2022-2023 report of the Reserve Bank of India (RBI) on the macroeconomic impact of climate change and changing patterns of rainfall. These factors could cost the economy 2.8% of its GDP and depress the living standards of nearly half of its population by 2050.

"India could lose anywhere around 3% to 10% of its GDP annually by the year 2100 due to climate change," the judgment noted from the RBI document.

"The report of the RBI presents a very disturbing scenario. The report clearly suggests the enormous potential impact of climate change on society, leading to serious job losses in every sector. Therefore, the adverse effect will be on the future of the nation as a whole, as against an identifiable group," the judgment said.

Green assets: The FCAA is accused of giving a free hand to States to regularise encroachments in protected forests.

- **Why in News:** The Supreme Court has asserted in a judgment that forests in India are a national asset and a major contributor to the nation's financial wealth. Forests are not just a collection of trees; they are a vital asset for the nation's economy and environment.
- **Importance of Forests**
  i. **Biodiversity Conservation:** Forests harbor a rich diversity of plant and animal species, playing a crucial role in preserving biodiversity. They provide habitats for various flora and fauna, contributing to the ecological balance.
  ii. **Carbon Sequestration:** Forests act as carbon sinks, absorbing carbon dioxide from the atmosphere and mitigating climate change. India's forests sequester approximately 24,000 million metric tonnes of carbon dioxide, helping to regulate the global climate.
  iii. **Soil and Water Conservation:** Trees and vegetation in forests prevent soil erosion, regulate water cycles and maintain groundwater levels. Forests act as natural water filters, purifying water and ensuring its availability for human consumption and agriculture.

- **Economic Value of Forests**
  - **Carbon Trading:** Forests contribute to a nation's financial wealth by earning revenue through carbon trading. Countries with excess forest cover can sell carbon credits, incentivizing forest conservation and sustainable management practices.
  - **Timber and Non-timber Forest Products:** Forests provide valuable timber resources and non-timber forest products (NTFPs) such as medicinal plants, fruits, and resins. These products contribute to local economies and provide livelihoods to forest-dependent communities.
  - **Tourism and Recreation:** Forests attract tourists and nature enthusiasts, generating revenue through ecotourism activities such as wildlife safaris, trekking, and camping. Sustainable tourism practices can promote conservation efforts and support local communities.
- **Threats to Forests and Conservation Measures**
  - **Forest Conservation Laws:** Strong legal frameworks and enforcement mechanisms are essential to protect forests from illegal logging, encroachment, and unsustainable land use practices. The Forest (Conservation) Amendment Act (FCAA) 2023 should be reviewed to ensure it upholds the principles of forest conservation.
  - **Community Participation:** Involving local communities and indigenous groups in forest management and conservation efforts can help in sustainable resource utilization and conflict resolution. Community-based forest management initiatives empower local stakeholders and promote stewardship of forest resources.
  - **Monitoring and Enforcement:** Regular monitoring, surveillance, and strict enforcement of forest laws are crucial for preventing deforestation, forest degradation, and wildlife poaching. Technology, such as satellite imagery and remote sensing, can aid in monitoring forest cover changes and illegal activities.

4. Brahmos
GS 2 (Security)

- **Why in News:** India delivers first batch of BrahMos supersonic missiles to Philippines
- **More on News:**
  - The BrahMos supersonic cruise missile has a two-stage solid propellant booster engine as its first stage which takes it to supersonic speed.
  - The second stage is the liquid ramjet engine which takes it closer to Mach 3 (3 times the speed of sound) speed in the cruise phase.
  - The BrahMos missile is universal for multiple platforms and can be launched from air, land, and sea platforms.
  - The missile works on the 'Fire and Forget principle', meaning it doesn't require further guidance after launch, and it maintains a high supersonic throughout the flight.

India delivers first batch of BrahMos supersonic missiles to Philippines

Dinakar Peri
NEW DELHI

India delivered the first batch of BrahMos supersonic cruise missiles to the Philippines on Friday. In January 2022, the Philippines concluded a $375-million deal with India for three batteries of a shore-based, anti-ship variant of the BrahMos becoming the first export customer for the joint venture missile between India and Russia.

The first batch was delivered aboard a transport aircraft of the Indian Air Force which landed in the Philippines on Friday afternoon. Specifics of the delivery made were not immediately available. The Philippines is acquiring the systems under the Horizon 2 of the Revised Armed Forces of the Philippines Modernisation Programme.

The delivery comes amid the showdown between the Philippines and China in the South China Sea and will significantly augment the defensive posture of the Philippines armed forces once the systems are operationalised.

During his visit to the Philippines in March, External Affairs Minister S. Jaishankar in a meeting with the Secretary of National Defence of the Philippines Gilberto C. Teodoro, Jr. reaffirmed India's commitment to upholding a rules-based international order and promoting peace and security in the Indo-Pacific region.

In January 2022, then Philippines Defence Secretary Delfin N. Lorenzana, who signed the contract said, "As the world's fastest supersonic cruise missiles, the BrahMos missiles will provide deterrence against any attempt to undermine our sovereignty and sovereign rights, especially in the West Philippine Sea."

The contract includes the delivery of three missile batteries, training for operators and maintainers as well as the necessary Integrated Logistics Support package. The coastal defence regiment of the Philippine Marines will be the primary user of the missile systems.

From January 23 to February 11, 2023, 21 Philippine Navy personnel were trained in the operations and maintenance of the systems in Nagpur and were awarded interim missile badges by the Indian Navy chief, Admiral R. Hari Kumar.

As reported earlier, several countries have expressed interest in acquiring BrahMos systems and discussions are in advanced stages with Indonesia and Thailand, among others.

BrahMos is a joint venture between the DRDO and Russia's NPO Mashinostroyeniya and the missile derives its name from Brahmaputra and Moskva rivers. The missile is capable of being launched from land, sea, sub-sea and air against surface and sea-based targets and has been long inducted by the Indian armed forces.

The batch was transported on an Indian Air Force aircraft that landed in the Philippines on Friday. SPECIAL ARRANGEMENT

- **Brahmos NG**
  - The BrahMos-NG (Next Generation) will be a scaled-down variant of the current BrahMos missile.
  - Compared to the present BrahMos, it is anticipated to be 50% lighter, three meters smaller, and have the same 290-kilometer range and Mach 3.5 speed.
  - It would have advanced next generation stealth.
  - Greater effectiveness against ECCM.
  - higher versality in underwater combat applications.
  - launch readiness from Torpedo tube and vertical orientation

5. FSSAI
GS 2 (Governance)

- **Why in News:** The Consumer Affairs Ministry asked the Food Safety and Standards Authority of India (FSSAI) to initiate "appropriate action" against the Nestle group for allegedly selling baby products with high sugar content in India.
- **More on News:**
  - Food Safety and Standards Authority of India (FSSAI) is an autonomous statutory body established under the Food Safety and Standards Act, 2006 (FSS Act).
  - Ministry of Health & Family Welfare, Government of India is the administrative Ministry of FSSAI.
  - The FSSAI consists of a chairperson and 22 members.
  - The FSSAI is in charge of establishing food standards so that consumers, traders, manufacturers, and investors only have to deal with one organization.
- **Statutory powers granted to FSSAI**
  - Framing of Regulations to lay down food safety standards
  - Laying down guidelines for accreditation of laboratories for food testing
  - Providing scientific advice and technical support to the Central Government
  - Contributing to the development of international technical standards in food
  - Collecting and collating data regarding food consumption, contamination, emerging risks, etc.
  - Disseminating information and promoting awareness about food safety and nutrition in India.

Centre asks FSSAI to initiate 'appropriate action' against Nestle

Bindu Shajan Perappadan
NEW DELHI

The Consumer Affairs Ministry on Friday asked the Food Safety and Standards Authority of India (FSSAI) to initiate "appropriate action" against the Nestle group for allegedly selling baby products with high sugar content in India.

The Ministry initiated this action following a report that said that Nestle's Cerelac products sold in India contained 2.7 grams of added sugar per serving, while the products sold in countries such as Germany, Switzerland, France, and the United Kingdom did not contain added sugar.

'Serious concerns'

"High sugar content in baby products raises serious concerns about the potential implications for the health and safety of children in our country. The health and well-being of our citizens, especially infants and young children, is of paramount importance, and any deviation from safety standards could lead to serious health concerns," the letter to FSSAI noted.

The WHO has for several years warned against the presence of high sugar content in baby food products

Arun Gupta from the Breastfeeding Promotion Network of India said that India needs to review its food safety laws and ensure that they are implemented in a strict manner. "Any laxity in the laws will ensure that the health of the citizens and in this case vulnerable infants gets compromised," he said.

The World Health Organization (WHO) has for several years now warned against the presence of high sugar content in baby food products.

6. Vasuki Indicus
GS 3 (Environment)

- **Why in News:** Researchers have reported the discovery of fossils of one of the largest snakes that ever existed and likely lived 47 million years ago during Middle Eocene period. The fossils were found in Kutch, Gujarat, and the reptile, named Vasuki Indicus
- **More on News:**
  - It is a giant predator snake estimated to be as large as the longest snake ever discovered.
  - The fossilised remains, measuring 10-15 metres long, were found in Gujarat's Panandhro Lignite Mine in Kutch.
  - Madtsoiidae are Gondwanan terrestrial snakes that lived between the Upper Cretaceous (100.5 million to 66 million years ago) and the Late Pleistocene (0.126 million years ago to 0.012 million years ago).
  - The giant madtsoiid snake identified in the new study is one of the largest snakes ever reported.

Fossils of huge prehistoric snake found in Kutch mine

Jacob Koshy
NEW DELHI

Researchers at the Indian Institute of Technology (IIT), Roorkee have reported the discovery of fossils of one of the largest snakes that ever existed and likely lived 47 million years ago during a period called the Middle Eocene. The fossils were found in Kutch, Gujarat, and the reptile, named Vasuki Indicus, could have been anywhere between 10 metres and 15 metres long, or as big as a modern-day school bus.

It belonged to the now-extinct Madtsoiidae snake family but represents a unique lineage from India, the authors note.

Professor Sunil Bajpai and post-doctoral researcher Debajit Datta at the IIT-Roorkee stumbled upon 27 pieces of a "partial, well preserved" vertebral column of the snake at the Panandhro Lignite Mine in Kutch.

The Panandhro Lignite Mine where the fossils were found. Red arrow indicates the level at which the remains were discovered.

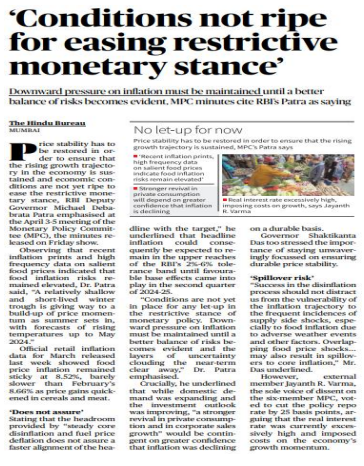
The discovery, the authors report in the peer-reviewed journal, *Nature Scientific Reports*, could improve understanding of how the Madtsoiidae species evolved in different kinds of climate, as well as the factors that contributed to large body sizes. One of the causative factors is held to be high temperatures in the tropical climate of that time.

Vasuki Indicus existed at a time when the earth looked quite different from today, and Africa, India and South America were one, conjoined landmass. It likely had a cylindrical body, hinting at a robust and powerful build, and was as big as Titanoboa, a massive snake that once roamed the earth and is reportedly the longest ever known, said a press statement from IIT-Roorkee.

"This discovery is significant not only for understanding the ancient ecosystems of India but also for unravelling the evolutionary history of snakes on the Indian subcontinent...," Dr. Bajpai said in a statement.

7. 'Conditions not ripe for easing restrictive monetary stance'
GS 3 (Economy)

- **Why in News:** The recent meeting of the Monetary Policy Committee (MPC) highlighted the need to maintain a restrictive monetary stance due to persistent risks to price stability, as outlined by RBI Deputy Governor Michael Debabrata Patra.
- **Key Highlights of the Meeting**
  - **Inflation Concerns:** Recent inflation data, especially in food prices, indicates ongoing risks. Food inflation, which remained at 8.52% in March, shows resilience, particularly in cereals and meat.
  - **Price Momentum:** Patra pointed out a build-up of price momentum with rising temperatures as summer approaches, indicating potential challenges until May 2024.
  - **Headline Inflation:** Despite some disinflation in core areas and fuel, headline inflation might remain on the higher side until favorable base effects kick in during the second quarter of 2024-25.
- **Reasons for Maintaining Restrictive Stance**



'Conditions not ripe for easing restrictive monetary stance'

Downward pressure on inflation must be maintained until a better balance of risks becomes evident, MPC minutes cite RBI's Patra as saying

The Hindu Bureau
MUMBAI

Price stability has to be restored in order to ensure that the rising growth trajectory is sustained, Reserve Bank of India (RBI) Deputy Governor Michael Debabrata Patra emphasised at the April 3-5 meeting of the Monetary Policy Committee (MPC), the minutes released on Friday show.

Observing that recent inflation prints and high frequency data on salient food prices indicated that food inflation risks remained elevated, Dr. Patra said, "A relatively shallow and short-lived winter trough is giving way to a build-up of price momentum as summer sets in, with forecasts of rising temperatures up to May 2024."

Official retail inflation data for March released last week showed food price inflation remained sticky at 8.52%, barely slower than February's 8.66% as price gains quickened in cereals and meat.

'Does not assure'

Stating that the headroom provided by "steady core disinflation and fuel price deflation does not assure a faster alignment of the headline with the target," he underlined that headline inflation could consequently be expected to remain in the upper reaches of the RBI's 2%-6% tolerance band until favourable base effects came into play in the second quarter of 2024-25.

"Conditions are not yet in place for any let-up in the restrictive stance of monetary policy. Downward pressure on inflation must be maintained until a better balance of risks becomes evident and the layers of uncertainty clouding the near-term clear away," Dr. Patra emphasised.

Crucially, he underlined that while domestic demand was expanding and the investment outlook was improving, "a stronger revival in private consumption and in corporate sales growth" would be contingent on greater confidence that inflation was declining on a durable basis.

Governor Shaktikanta Das too stressed the importance of staying unwaveringly focussed on ensuring durable price stability.

'Spillover risk'

"Success in the disinflation process should not distract us from the vulnerability of the inflation trajectory to the frequent incidences of supply side shocks, especially to food inflation due to adverse weather events and other factors. Overlapping food price shocks... may also result in spillovers to core inflation," Mr. Das underlined.

However, external member Jayanth R. Varma, the sole voice of dissent on the six-member MPC, voted to cut the policy repo rate by 25 basis points, arguing that the real interest rate was currently excessively high and imposed costs on the economy's growth momentum.

No let-up for now

Price stability has to be restored in order to ensure that the rising growth trajectory is sustained, MPC's Patra says

- "Recent inflation prints, high frequency data on salient food prices indicate food inflation risks remain elevated"
- Stronger revival in private consumption will depend on greater confidence that inflation is declining

Real interest rate excessively high, imposing costs on growth, says Jayanth R. Varma

- **Persistent Inflation Risks:** The steady core disinflation and fuel price de-escalation do not ensure a quick alignment of headline inflation with the target. Until significant base effects are seen, maintaining a restrictive stance is crucial.
- **Uncertainty in Inflation Trajectory:** Patra stressed the importance of maintaining downward pressure on inflation until clearer signs of a durable decline in inflation are evident and uncertainties in the near term are resolved.

- **Impact of Loose Monetary Policy**
  - **Inflationary Pressure:** Loose monetary policy could fuel inflationary pressures, particularly with the vulnerability of the inflation trajectory to frequent supply-side shocks, especially in food inflation due to adverse weather conditions.
  - **Price Stability Concerns:** Governor Shaktikanta Das emphasized the need to remain focused on ensuring durable price stability, highlighting the risks associated with supply-side shocks spilling over into core inflation.
- **Required Measures**
  - **Balancing Growth and Inflation:** Any relaxation in the monetary stance should be contingent on a durable decline in inflation and a more balanced risk outlook, ensuring that it doesn't compromise the objective of maintaining price stability.
  - **Enhanced Confidence:** Patra mentioned that a stronger revival in private consumption and corporate sales growth requires greater confidence in a sustained decline in inflation.

Key-terms in the monetary policy review	
Repo rate	• Repo rate is an interest rate at which the RBI provides liquidity under the liquidity adjustment facility (LAF) to banks against the collateral of government and other approved securities. • **Currently, the repo rate is at 6.50 percent.**
Standing Deposit Facility (SDF) Rate	• SDF rate is a rate at which the RBI accepts uncollateralised deposits, on an overnight basis, from banks. • The SDF is also a financial stability tool in addition to its role in liquidity management. The SDF rate is placed at 25 basis points below the policy repo rate. • **Currently, SDF rate is at 6.25 percent.**
Marginal Standing Facility (MSF) Rate	• The penal rate at which banks can borrow, on an overnight basis, from the central bank by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a predefined limit (2 per cent). • **MSF rate currently stands at 6.75 percent.**
Fine Tuning Operations	• The main liquidity operation is supported by fine-tuning operations, overnight and/or longer tenor, to tide over any unanticipated liquidity changes during the reserve maintenance period. • In addition, the RBI conducts, if needed, longer-term variable rate repo/reverse repo auctions of more than 14 days.
Monetary policy stance	There are various stances: • **Accommodative Stance**, which means the central bank is prepared to expand the money supply to boost economic growth. • **Neutral stance** suggests that the central bank can either cut rate or increase rate. This stance is typically adopted when the policy priority is equal on both inflation and growth. • **Hawkish stance** indicates that the central bank's top priority is to keep the inflation low. During such a phase, the central bank is willing to hike interest rates to curb money supply and thus reduce the demand. • **Calibrated tightening** means during the current rate cycle, a cut in the repo rate is off the table.

CPI Inflation	• Consumer Price Index (CPI) based Inflation is a measure of changes in the price levels of goods and services purchased by households.

8. Elon Musk's Visit & the Growing EV Sector in India
GS 3 (Economy)

Musk set to arrive: potential win-win for Tesla and India, some challenges too

- **Why in News:** Tesla's CEO Mr. Elon Musk is scheduled to visit India for a 2-day trip starting from April 21st.
- **Background:**
  - On his visit to India over the weekend, Tesla CEO Mr. Elon Musk could make a pledge to invest more than USD2 billion into a car manufacturing facility in the country.
  - He is scheduled to participate in a roundtable with India's space startups, and have a meeting with Prime Minister Narendra Modi.
  - The **Central government has rolled out a policy tailored for Tesla to import 8,000 electric cars annually into India at a reduced 15% duty**.
  - The tariff policy break for Tesla is consistent with the Government's approach to tap marquee brands and sectoral flagbearers. For example, Apple in electronics manufacturing, Micron for semiconductor chips, and Tesla for EVs.
  - Also, the Government has amended Rules under the **Foreign Exchange Management Act (FEMA)** to allow up to 100% foreign direct investment (FDI) for the space sector through three categories of liberalised entry routes.
  - On his two-day visit, Elon Musk is expected to make a push for **Starlink**, a project by his company SpaceX, to offer high-speed Internet using a constellation of thousands of low Earth orbit satellites.
- **EV Sector in India:**
  - Electric vehicle sales in India jumped 49.25 per cent year-on-year to more than15 lakh units in 2023, according to a data released by the Federation of Automobile Dealers' Association (FADA).
    - The EV industry had recorded a total sales of around 10 lakh units in 2022, as per the data.
  - The surge in sales can be attributed to increase in the availability of products in the market, high fuel prices, state subsidies and sops offered under the **FAME-II Initiative**.
- **About FAME-II Scheme:**
  - Launched in 2015, the Fame India scheme is an **incentive scheme that encourages the adoption of electric and hybrid vehicles.**
  - The full form of **FAME India** scheme is "Faster Adoption and Manufacturing of Electric and Hybrid Vehicles in India".
  - In 2019, the Central government approved Phase-II of FAME Scheme with an outlay of **10,000 Crore for a period of 3 years**.
    - Earlier this year, it was extended to March 31, 2024.
  - **Phase-II aims to generate demand by way of supporting 7000 e-Buses, 5 lakh e-3 Wheelers, 55,000 e-4 Wheeler Passenger Cars (including Strong Hybrid) and 10 lakh e-2 Wheelers.**
  - Nearly 2 lakh vehicles have been supported under the FAME-II scheme.
- **Other Measures taken by the Government to promote use of EVs:**
  - **Battery Swapping Policy**:
    - Battery swapping is an alternative which involves exchanging discharged batteries for charged ones and provides flexibility to charge them separately.
    - This de-links charging and battery usage and keeps the vehicle in operational mode with negligible downtime.
    - NITI Aayog, recently, released a draft battery swapping policy under which all metropolitan cities with a population above 40 lakh will be prioritised for development of battery swapping network under the first phase.
    - **Battery swapping is an alternative which involves exchanging discharged batteries for charged ones and provides flexibility to charge them separately.**
    - This de-links charging and battery usage and keeps the vehicle in operational mode with negligible downtime.
  - **Switching to an EV**:
    - Central/State governments provide an upfront subsidy that reduces the overall costs of electric vehicles.
  - **E-AMRIT Portal**:
    - The e-AMRIT portal offers various resources to help ease the migration to electric vehicles
- **Updated EV Policy to Make India as Manufacturing Hub:**
  - The Government of India has approved a scheme to promote India as a manufacturing destination so that e-vehicles with the latest technology can be manufactured in the country.
  - The policy is designed to attract investments in the e-vehicle space by reputed global EV manufacturers.
  - This will provide Indian consumers with access to latest technology, boost the Make in India initiative, strengthen the EV ecosystem by promoting healthy competition among EV players.
  - It will also leading to high volume of production, economies of scale, lower cost of production, reduce imports of crude Oil, lower trade deficit, reduce air pollution, particularly in cities, and will have a positive impact on health and environment.
- **Key Features of the Policy:**
  - Minimum Investment required: **Rs 4,150 Cr**;
  - No limit on maximum Investment;
  - **Timeline for manufacturing**:
    - 3 years for setting up manufacturing facilities in India, and to start commercial production of e-vehicles, and reach 50% domestic value addition (DVA) within 5 years at the maximum.
  - **Domestic value addition (DVA) during manufacturing**:
    - A localization level of 25% by the 3rd year and 50% by the 5th year will have to be achieved.
  - The **customs duty of 15%** (as applicable to CKD units) would be applicable for a period of 5 years

- **Not more than 8,000 EVs per year** would be permissible for import under this scheme. The carryover of unutilized annual import limits would be permitted.
- The Investment commitment made by the company will have to be backed up by a bank guarantee in lieu of the custom duty forgone.

NEELOFER CIVIL SERVICE CLASSES UPSC WITH NSCS DELHI IAS

22nd April, 2024

1. Avian Flu

GS 2 (Health)

Amid avian flu fears, more birds culled in Alappuzha district

Members of rapid response teams engaged in culling ducks at Cheruthana in Alappuzha on Friday. SPECIAL ARRANGEMENT

The Hindu Bureau
ALAPPUZHA

Amid fears of avian flu spreading, mass bird deaths have been reported from Muttar and Ambalappuzha North in Alappuzha district.

District Animal Husbandry Officer Sajeev Kumar K.R. said a farmer raising 2,300 ducks at Muttar lost 164 in recent days. At Ambalappuzha North, 90 chickens of the total 650 in a poultry farm had perished during the period.

"Following bird deaths, we collected samples from two places and sent them to the Avian Disease Diagnostic Laboratory at Thiruvalla for testing. The tests carried out at the laboratory suspect bird flu. We have decided to send the samples to the National Institute of High-Security Animal Diseases (NIHSAD) in Bhopal for final confirmation. It will be dispatched to Bhopal on Monday and the results are expected in a couple of days," Dr. Kumar said.

An avian flu outbreak can only be declared after confirmation from the NIHSAD. He said Muttar and Ambalappuzha North had been under surveillance following the bird flu outbreak at Edathua and Cheruthana last week.

Over 17,480 birds, mostly ducks, within a one-km radius of bird flu hotspots, were culled earlier

Surveillance up

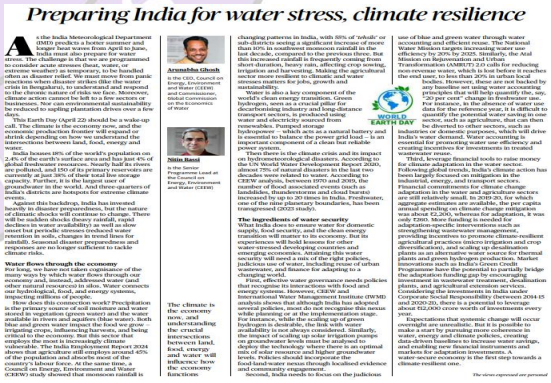
After the presence of the H5N1 subtype of the Influenza A virus was confirmed in ducks of these farmers – one at Edathua grama panchayat (Ward 1) and two at Cheruthana panchayat (Ward 33) – rapid response teams of the Animal Husbandry Department culled 17,480 birds, mostly ducks, within a one-km radius of bird flu hotspots on April 19.

The avian influenza virus can be transmitted to humans. The Health department has tightened preventive steps and urged people to maintain caution. Surveillance has been strengthened within a 10-km radius of the hotspots.

- **Why in News:** Amid fears of avian flu spreading, mass bird deaths have been reported from Muttar and Ambalappuzha North in Alappuzha district.
- **What is bird flu?**
  - **Avian influenza or Bird Flu** refers to the disease caused by infection with avian (bird) influenza (flu) Type A viruses.
  - These viruses occur naturally among wild aquatic birds worldwide and can infect domestic poultry and other bird and animal species.
  - It is a **zoonotic disease** that affects wild and domestic bird populations.
  - **Avian flu viruses** do not normally infect humans.
- **Spread:**
  - The disease makes its presence felt particularly during winter in most of India and other parts of the globe.
  - This is because, as **wintering, migratory birds arrive** and bring pathogens with them.
  - **Temperature is also a factor**: the virus thrives better in cooler climes, thus enabling its spread during winter.
- **Types of Influenza Virus:**
  - There are four types of influenza viruses: **influenza A, B, C, and D**
    - **Influenza A and B** are the two types of influenza that cause epidemic seasonal infections nearly every year.
    - **Influenza C mainly occurs in humans** but has been known to also occur in dogs and pigs.
    - **Influenza D is found mainly in cattle**. It's not known to infect or cause illness in humans yet.
- **Avian influenza Type A viruses:**
  - Type A viruses are classified based on two proteins on their surfaces – **Hemagglutinin (HA) and Neuraminidase (NA).** There are about **18 HA subtypes and 11 NA subtypes**.
  - Several combinations of these two proteins are possible e.g., **H5N1, H7N2, H9N6, H17N10, H18N11, etc.**
  - All known subtypes of influenza A viruses **can infect birds**, except subtypes **H17N10 and H18N11**, which have only been found in bats.

2. Water Stress and Climate Resilience in India

GS 3 (Environment)


Preparing India for water stress, climate resilience

Aranshba Ghosh is the CEO, Council on Energy, Environment and Water (CEEW) and Commissioner, Global Commission on the Economics of Water

Nitin Bassi is the Senior Programme Lead at Council on Energy, Environment and Water (CEEW)

The climate is the economy now, and understanding the crucial interactions between land, food, energy and water is all the more the economy functions

changing patterns in India, with 80% of 'rehab' or sub-districts seeing a significant increase of more than 10% in southwest monsoon rainfall in the past 30 years (1990-2019). Ironically, part of this increased rainfall is frequently coming from short-duration, heavy rain, affecting crop sowing, irrigation and harvesting. Making the agricultural sector more resilient to climatic and water variability changes for jobs, growth and sustainability.

Water is also a key component of the world's clean energy transition. Green hydrogen, seen as a crucial pillar for decarbonising sectors where clean substitutes are hard to find, is produced using water and electricity sourced from renewables. Pumped storage hydropower – which acts as a natural battery and is considered a flexible power source – is also an important component of a clean, but reliable power system.

Then there's the climate crisis and its impact on India's hydrological disasters. According to the UN World Water Development Report 2020, almost 75% of natural disasters in the last two decades were related to water. According to CEEW's analysis, between 2005 and 2019, 45% of flood-associated events (such as landslides, thunderstorms and cloud bursts) increased by up to 20 times in India. Freshwater, one of the nine planetary boundaries, has been transgressed (2023 study).

The ingredients of water security

What India does to ensure water for domestic supply, food security, and the clean energy transition in the next 25 years will be based on its experiences will hold lessons for other water-stressed developing countries and emerging economies. Attaining this water security will need a mix of the right policies, data, technology, and governance for urban and wastewater, and finance for adapting to a changing world.

First, effective water governance needs policies that recognise its interactions with food and energy systems, and the risks that changing systems, impacting millions of people.

How does this connection work? Precipitation is the primary source of soil moisture and water stored in vegetation (green water) and the water in rivers, lakes, groundwater (blue water). Both blue and green water impact the food we grow – irrigating crops, influencing harvests, and being critical to the economy. But this sector that employs the most is increasingly climate-sensitive. The 2019-20 Economic Survey report 2024 shows that agriculture still employs around 45% of the population and absorbs most of the country's labour force. At the same time, a Council on Energy, Environment and Water (CEEW) study showed that monsoon rainfall is

Water flows through the economy

For long, we have not taken cognisance of the many ways by which water flows through our economy and, instead, addressed water (and other natural resources) in silos. Water connects the hydrological, food, and energy systems, impacting millions of people.

How does this connection work? Precipitation is the primary source of soil moisture and water stored in vegetation (green water) and the water in rivers, lakes, groundwater (blue water). Both blue and green water impact the food we grow – irrigating crops, influencing harvests, and being critical to the economy. But this sector that employs the most is increasingly climate-sensitive. The 2019-20 Economic Survey report 2024 shows that agriculture still employs around 45% of the population and absorbs most of the country's labour force. At the same time, a Council on Energy, Environment and Water (CEEW) study showed that monsoon rainfall is

use of blue and green water through water accounting and efficient reuse. The National Water Mission targets increasing water use efficiency by 20%. Similarly, the Atal Mission on Rejuvenation and Urban Transformation (AMRUT) 2.0 calls for reducing non-revenue water, which is lost before it reaches the end user, to less than 20% in urban local bodies. Both these goals can be achieved by any baseline set using water accounting principles that will help quantify the, say, "20 per cent" change in freshwater use. For instance, in the absence of water use data, it is difficult to quantify the 20% target, quantify the potential water saving in one sector, such as agriculture, that can then be diverted to other sectors, such as industries or domestic purposes, which will drive the economy. Water accounting is also essential for promoting water use efficiency and creating incentives for investments in treated wastewater.

Third, leverage financial tools to raise money for climate adaptation in the water sector. Following global trends, India's climate action has been largely focused on mitigation in the energy sector, with limited attention to adaptation. Financial commitments for climate change adaptation in the water and agriculture sectors are still relatively small. In 2019-20, for which aggregate estimates are available, the per capita annual public climate finance for adaptation was about ₹2,200, whereas for adaptation, it was only ₹260. More funding is needed for adaptation-specific interventions such as strengthening wastewater management, groundwater recharge, promoting more resilient agricultural practices (micro-irrigation and crop diversification), and scaling up desalination plants as an alternative water source for thermal plants and green hydrogen production. Market mechanisms such as the Green Credit Programme have the potential to partially bridge the adaptation funding gap by encouraging investment in wastewater treatment, desalination plants, and agricultural extension services. Additionally, the implementation of India's Corporate Social Responsibility (between 2014-15 and 2020-20, there is a potential to leverage about ₹2,000 crore worth of investments every year.

Expectations that systemic change will occur overnight are unrealistic. But it is possible to make a start by pursuing more coherence in water, energy and climate policies, creating data-driven baselines to increase water savings, and developing water-use efficiency tools and markets for adaptation investments. A water-secure economy is the first step towards a climate-resilient one.

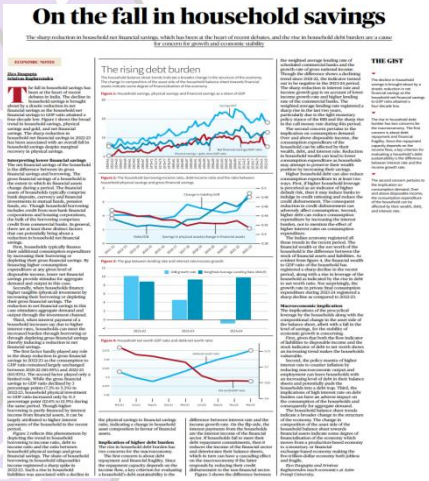
The views expressed are personal

- **Why in News:** As India faces predictions of a hotter summer and longer heat waves, the country must address the impending water stress exacerbated by climate change. While past responses often focused on acute crises, a shift towards understanding and responding to chronic risks is imperative.
- **Challenges of Water Stress and Climate Change:**
  - **Nature of Climatic Shocks**: India must move from reactive responses to climate disasters like water crises in Bengaluru towards understanding the evolving nature of climatic shocks. These include sudden shocks such as heavy rainfall and rapid declines in water availability, as well as slow-onset stresses like changes in rainfall patterns.
  - **Impact on Economic Sectors**: Climate change affects multiple sectors, including agriculture and energy, and has significant economic implications. For instance, agriculture, employing 45% of India's workforce, faces challenges like erratic rainfall patterns affecting crop cycles and irrigation.
  - **Water and Clean Energy Transition**: Water plays a crucial role in the transition to clean energy. Technologies like green hydrogen production and pumped storage hydropower require significant water resources. Balancing clean energy needs with water availability is crucial for sustainable development.
- **Water Flows through the Economy:**

- **Interconnectedness of Water Systems**: Water connects various systems such as agriculture, energy, and food production. Precipitation influences soil moisture, irrigation, and hydroelectric power, impacting food production and energy generation.
- **Vulnerability of Agriculture**: Despite advancements, agriculture remains highly vulnerable to climate change. Changes in rainfall patterns affect crop cycles and yields, influencing food security and economic stability.
- **Role in Clean Energy**: Water is essential for clean energy technologies like green hydrogen production and pumped storage hydropower. However, these technologies also impact water resources and must be managed sustainably.

- **The Ingredients of Water Security:**
  - **Integrated Water Governance**: Policies need to recognize the interconnections between water, food, and energy systems. However, current policies often overlook this nexus, leading to inefficiencies in resource management.
  - **Efficient Water Use**: India must focus on water accounting and efficient water use. Policies like the National Water Mission aim to increase water use efficiency, but a lack of baseline data hampers effective planning and implementation.
  - **Financial Instruments for Adaptation**: Adequate funding for climate adaptation in the water sector is essential. India needs to increase investments in climate-resilient practices such as wastewater management and desalination plants. Financial tools like the Green Credit Programme can help bridge the funding gap.

3. <u>On the fall in household savings</u>
<u>GS 2 (Governance)</u>


On the fall in household savings

The sharp reduction in household net financial savings, which has been at the heart of recent debates, and the rise in household debt burden are a cause for concern for growth and economic stability

The rising debt burden

THE GIST

- **Why in News:** The fall in household savings has become a focal point of discussion in India, particularly with a sharp decline in net financial savings leading to a four-decade low in the household net financial savings to GDP ratio.
- **Interpreting lower financial savings**
  - **Definition:** Household net financial savings are the difference between gross financial savings and borrowing. Gross financial savings include assets like bank deposits, currency, and financial investments.
  - **Factors leading to reduction:**
  - **Consumption Expenditure:** While consumption remained largely unchanged, the reduction in net financial savings suggests increased borrowing or decreased financial savings, stimulating aggregate demand.
  - **Tangible Investment:** The role of increased borrowing for physical investment was limited, indicating a slight increase in physical savings but a significant rise in borrowing.
  - **Interest Payments:** Higher interest rates led to increased interest payments, which households financed by borrowing or depleting financial savings.
- **Implication of higher debt burden**
  - **Financial Fragility:** Increased debt raises concerns about households' ability to repay, impacting financial sector income and possibly leading to credit rationing, affecting the macroeconomy.
  - **Consumption Demand:** Higher debt can reduce consumption as households may seek to preserve wealth by saving more or may face credit rationing due to perceived default risk.
- **Macroeconomic implication**
  - **Vulnerability:** Increasing trends in liabilities to disposable income and debt to net worth indicate household vulnerability.
  - **Policy Implications:** Tight monetary policy, aiming to control inflation, can exacerbate household debt, potentially pushing them into a debt trap.
  - **Impact on Consumption:** High debt burden can decrease consumption, affecting aggregate demand and economic stability.

4. <u>Unique ID must be generated for organ donation: Centre</u>
<u>GS 2 (Governance)</u>

- **Why in News:** The Union Health Ministry has issued a directive to ensure a unique National Organ and Tissue Transplant Organisation (NOTTO)-ID for all cases of organ transplants, whether from a living or deceased donor.
- **Directive to Prevent Commercial Dealing in Organs**

- **NOTTO-ID Implementation**: The directive mandates the generation of a NOTTO-ID for both the donor and recipient, to be issued by the hospital through the NOTTO website (www.notto.mohfw.gov.in).
- **Eliminating Commercial Dealing**: The aim is to eliminate commercial dealing in organs, especially those involving foreign citizens, to ensure ethical practices in organ transplantation.
- **Stricter Monitoring**: The Ministry calls for stricter monitoring of organ transplants involving foreign nationals by local authorities to prevent malpractices.

Unique ID must be generated for organ donation: Centre

Bindu Shajan Perappadan
NEW DELHI

The Union Health Ministry has issued the directive to eliminate commercial dealing in organs

All cases of organ transplants, whether from a living or deceased donor, will be allocated a unique National Organ and Tissue Transplant Organisation (NOTTO-ID) for both the donor and the recipient.

It must be generated by the hospital from the NOTTO website (www.notto.mohfw.gov.in). The Union Health Ministry has issued the directive to eliminate commercial dealing in organs, especially those involving foreign citizens.

The latest order, issued to all States and Union Territories, comes following reports of malpractice and a surge in the number of organ transplants related to foreigners in the country, the Ministry said. It has also called for stricter monitoring of such transplants by the local authorities.

Earlier this month, the Ministry had said that the Appropriate Authority of the State, appointed according to the Transplantation of Human Organs and Tissues Act (THOTA), 1994 should investigate transplants in respect of foreign nationals in the State, apart from any complaints concerning the breach of any provision or rule of the Act, with appropriate action to be taken whenever such violations come to light.

"NOTTO-ID is mandatory for considering allocation of organs in case of deceased donor transplant, this ID in case of a living donor transplant, shall also be generated at the earliest, maximum within 48 hours after the transplant surgery is done," the communication said.

Regular inspection

The Ministry has also called for devising a system of regular inspection of the registered hospital for transplant/retrieval by the appropriate State authority, and to monitor them on-site on the quality of transplantation, post operative follow-up of the donor and recipient, and outcomes.

Any violation of the THOTA, 1994 and its rules have to be probed, and appropriate action includes the suspension of registration for performing organ transplants if hospitals are involved in illegal activities.

- **Ensuring Compliance and Accountability**
  - **Investigation and Action**: Appropriate authorities appointed under the Transplantation of Human Organs and Tissues Act (THOTA), 1994 are directed to investigate transplants involving foreign nationals, taking appropriate action against violations.
  - **Mandatory NOTTO-ID**: NOTTO-ID is mandatory for organ allocation in deceased donor transplants, and for living donor transplants, it should be generated within 48 hours after the surgery.
- **Enforcing Quality and Oversight**
  - **Regular Inspection**: The Ministry emphasizes the need for regular inspection of registered hospitals for transplant/retrieval by appropriate state authorities.
  - **On-site Monitoring**: Monitoring the quality of transplantation, post-operative follow-up of donors and recipients, and outcomes is crucial to ensure compliance with regulations.
  - **Action against Violations**: Hospitals found violating THOTA, 1994 and its rules risk suspension of registration for performing organ transplants, if involved in illegal activities.

5. <u>Permanent Commission for appointing judges</u>
<u>GS 2 (Judiciary)</u>

Former SC judge moots Permanent Commission for appointing judges

The Hindu Bureau
CHENNAI

A Permanent Commission comprising the Chief Justice of India and four retired judges could be constituted for five years to appoint judges and ensure the independence of the judiciary, Rohinton Fali Nariman, former judge of the Supreme Court of India, said here on Sunday.

In an award function organised by juniors of former Advocate General of Tamil Nadu S. Govind Swaminadhan, Mr. Nariman conferred the 'SGS Award for Ethics in the Legal Profession' on Justice Akil Kureshi, former Chief Justice of the High Courts of Tripura and Rajasthan.

Speaking at the event on the topic *Importance of the Independence of the Judiciary and what needs to be done*, Mr. Nariman explained the functioning of the judiciary in the U.S. and the U.K. and summarised the evolution of the judiciary in India after Independence, through various cases, particularly related to appointment of judges to the Supreme Court.

"The independence of the judiciary evolved and it was declared as the basic structure of the Constitution. Every article will be viewed in the light of this principle. When it is mandatory for the government to consult the Chief Justice, it is not merely consultation. It is concurrence. This judgment entirely turned the table and judicial appointments are now entirely in the hands of judges," he said.

He suggested a system to appoint judges: "A permanent commission comprising the Chief Justice of India and four retired judges could be constituted for five years. The selection of retired judges to the Commission could be done by the 33 Supreme Court judges, excluding the Chief Justice, based on the suggestions of select practising lawyers of the Supreme Court and High Court Bars."

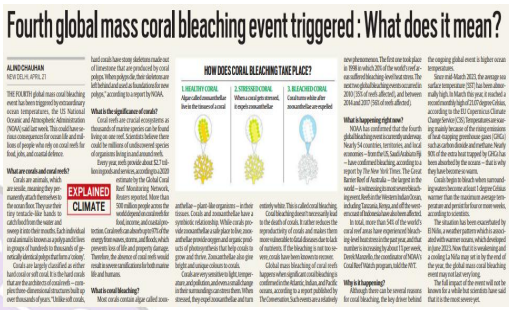
- **Why in News:** Former Supreme Court Judge Rohinton Fali Nariman has proposed the establishment of a Permanent Commission to appoint judges, ensuring the independence of the judiciary.
- **Importance of Independence of the Judiciary**
  - **Evolution in India**: judiciary has evolved by emphasizing its independence as a basic structure of the Constitution.
  - **Judicial Appointments**: There is a shift in the appointment process, where judicial appointments are now predominantly in the hands of judges themselves, ensuring greater independence.
- **Proposed System for Judicial Appointments**
  - **Composition of the Commission**: Experts suggested a Permanent Commission comprising the Chief Justice of India and four retired judges, to serve for five years.
  - **Selection Process for Retired Judges**: The selection of retired judges for the Commission could be done by 33 Supreme Court judges, excluding the Chief Justice. The selection could be based on suggestions from select practising lawyers of the Supreme Court and High Court Bars.
- **Ensuring Judicial Independence**
  - **Role of the Commission**: The Commission would be responsible for appointing judges, ensuring transparency, and safeguarding the independence of the judiciary.
  - **Long-term Stability**: A five-year term for the Commission would provide stability and continuity in the appointment process, reducing undue influence from external factors.

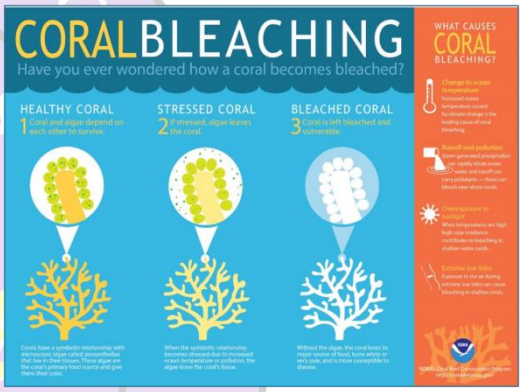
6. <u>World Earth Day</u>
<u>GS 3 (Environment)</u>

- **Why in News:** World Earth Day is celebrated annually across the world on April 22 every year.
- **About World Earth Day:**

- It is also known as **International Mother Earth Day**, is a globally recognised event dedicated to raising awareness and promoting the sustainability of our planet.
- **History**
  - The concept of Earth Day can be traced back to the late 1960s, which saw a surge in public debate over environmental issues, with Rachel Carson's influential book Silent Spring (1962) and the Santa Barbara oil spill (1969) raising awareness about environmental destruction.
  - The first World Earth Day was held **on April 22, 1970,**in the United States. It was organized by a group of environmental activists led by US Senator Gaylord Nelson, who was concerned about the negative impact of industrialization and pollution on the environment.
  - Since then, it has become a global movement that encourages individuals and communities to take action towards protecting our planet.
- **Theme of 2024:** 'Planet vs. Plastics'. It emphasizes the need for collective action to repair and heal the planet's ecosystems, combat climate change and preserve biodiversity.

7. Fourth global mass coral bleaching triggered
GS 3 (Environment)





- **Why in News:** As per the US National Oceanic and Atmospheric Administration (NOAA), the fourth global mass coral bleaching event has been triggered by extraordinary ocean temperatures.
- **Corals and coral reefs**
  - **Corals**
    - Corals are like underwater animals that stay in one place on the ocean floor. They have small tentacles to grab food from the water and bring it into their mouths.
    - Each individual coral animal is known as a **polyp** and it lives in groups of hundreds to thousands of genetically identical polyps that form a colony.
  - **Types of corals**
    - Corals are largely classified as either hard coral or soft coral.
    - Unlike soft corals, hard corals have stony skeletons made out of limestone that are produced by coral polyps.
    - When polyps die, their skeletons are left behind and used as foundations for new polyps.
  - **Coral reefs**
    - It is the hard corals that are the architects of coral reefs — complex three-dimensional structures built up over thousands of years.
    - Coral reefs, also referred to as rainforests of the sea, have existed on the Earth for nearly 450 million years.
    - Australia's Great Barrier Reef is the largest in the world, stretching ~2300 kilometres.
- **Significance of corals**
  - **Biodiversity Hotspots**
    - E.g., the Great Barrier Reef contains over 400 coral species, 1,500 fish species, 4,000 mollusc species and six of the world's seven sea turtle species.
  - **Protection**
    - Coral reefs can absorb up to 97% of the energy from waves, storms, and floods, which prevents loss of life, property damage, and soil erosion.
  - **Economic Value**
    - Coral reefs support industries like fishing and tourism, providing livelihoods for many people around the world.
    - Tourists love to snorkel and dive among vibrant coral reefs.
  - **Medicine and Science**
    - Corals hold potential for new medicines and scientific discoveries. They have already contributed to treatments for diseases like cancer and arthritis.
  - **Carbon Cycling**
    - They help to regulate the Earth's climate by absorbing carbon dioxide from the atmosphere.
- **Coral bleaching**
  - **Symbiotic relationship between corals and zooxanthellae**
    - Most corals contain algae called zooxanthellae (plant like organisms) in their tissues.
    - Corals and zooxanthellae have a symbiotic relationship.
      - Corals provide zooxanthellae a safe place to live.
      - On the other hand, zooxanthellae provide oxygen and organic products of photosynthesis that help corals to grow and thrive.
      - Zooxanthellae also give bright and unique colours to corals.
  - **Coral bleaching**
    - Corals are very sensitive to light and temperature and even a small change in their living conditions can stress them.
    - When stressed, they expel zooxanthellae and turn entirely white. This is called coral bleaching.
    - Coral bleaching doesn't immediately lead to the death of corals. They rather go under more stress and are subject to mortality.
    - Coral bleaching reduces the reproductivity of corals and makes them more vulnerable to fatal diseases.
    - If the bleaching is not too severe, corals have been known to recover.
  - **Global mass bleaching of coral reefs**
    - Global mass bleaching of coral reefs is when significant coral bleaching is confirmed in the Atlantic, Indian and Pacific oceans.
    - Such events are a relatively new phenomenon.
      - The first one took place in 1998 in which 20% of the world's reef areas suffered bleaching-level heat stress.
      - The next two global bleaching events occurred in 2010 (35% of reefs affected) and between 2014 and 2017 (56% of reefs affected).
- **Fourth global bleaching event**
  - **About**
    - NOAA has confirmed that the fourth global bleaching event is currently underway.
    - Nearly 54 countries, territories and local economies — from Florida, the US, Saudi Arabia to Fiji — have confirmed bleaching.
    - The Great Barrier Reef is witnessing its most severe bleaching event.
  - **Key driver**
    - Higher ocean temperatures.

- However, the situation has been exacerbated by El Niño, a weather pattern which is associated with warmer oceans.

- **Impact of the event**
  - As per the IPCC, the world may lose the vast majority of its coral reefs at 1.5 degree Celsius of warming, and virtually all at 2 degree.

NEELOFER CIVIL SERVICE CLASSES
UPSC WITH NSCS
DELHI IAS

23rd April, 2024

1. Restoring earth's right to 'good health'
GS 3 (Environment)

Restoring earth's right to 'good health'

- **Why in News:** The **European Court of Human Rights** holds Switzerland accountable for **inadequate climate action**, signalling a **new era** where **climate change intersects with human rights**. Similar recognition emerges in India, emphasizing the right to be free from climate change impacts.
- **Legal Recognition of Climate Change as a Human Rights Issue**
  - **Guilty:** European Court of Human Rights finds Switzerland guilty of violating women's rights due to inadequate climate action.
  - **Recognition in India:** Supreme Court of India recognizes the right to be free from adverse climate impacts under constitutional provisions.
  - **Urgency to address climate change:** World Meteorological Organization's report highlights 2023 as the hottest year on record, underscoring the urgency of addressing climate change as a human rights crisis.
- **India's Progress and Vulnerabilities**
  - **India's vulnerability:** India achieves two **Nationally Determined Contribution** targets ahead of schedule, but remains highly vulnerable to climate change.
  - **Risk of residence:** Over 80% of India's population resides in districts at risk of climate-induced disasters, exacerbating socio-economic inequalities.
  - **Rights perspective of climate change:** Urgent need to address climate change impacts from a rights perspective to safeguard health, life, and liberty.
- **Pathways for Enhanced Climate Action**
  - **Proposal for an overarching regulation on climate change** in India to strengthen governance **and accountability.**
  - **Adoption of climate change framework laws** from countries like Germany and South Africa can guide India in enhancing climate governance.
  - **Leveraging India's localisation model** for Sustainable Development Goals to integrate climate action into local-level planning and implementation.

2. Political space for disability rights, a silver of hope
GS 2 (Social Issues)

Political space for disability rights, a sliver of hope

- **Why in News:** Amidst election manifestos, the proposal to include **disability as a distinct ground for discrimination** under **Article 15 of the Constitution** has garnered attention, offering hope to the disability rights movement for constitutional reform.
- **Call for Constitutional Amendment**
  - **Coverage:** Disability rights advocates push for amending **Article 15** to explicitly cover disability as a discrimination ground.
  - **India's obligation: UN Committee on the Rights of Persons with Disabilities** echoes this demand in 2019, highlighting India's obligation under international conventions.
  - **Persistent gap:** Despite global strides in disability rights, India has yet to address this longstanding omission in its constitutional framework.
- **Legal Framework and Constitutional Recognition**
  - **Significant achievement:** Adoption of the UNCRPD in 2006 and the enactment of the Rights of Persons with Disabilities Act in 2016 mark significant milestones.
  - **Gaps in current provisions:** Current legal provisions offer protection against discrimination on a statutory basis, falling short of constitutional guarantee.
  - **Need of constitutional recognition**: There is urgent necessity of constitutional recognition to provide robust remedies and demonstrate a deeper commitment to disability rights.
- **Political Will and Advocacy Efforts**
  - **Growing awareness:** Inclusion of disability as a ground under Article 15 gains traction within political discourse, reflecting growing awareness of disability rights.
  - **Efforts in the right direction:** Noteworthy initiatives by disability rights organizations, like the release of a disability-focused manifesto, underscore the persistent advocacy efforts.
  - **Shift in attitudes:** Furthermore, it signals a potential shift in political attitudes towards addressing the longstanding demands of the disability rights movement.

3. Star Campaigner
GS 2 (Elections)

What are rules around star campaigners?

What does the Representation of the People Act, 1951 state about the expenditure incurred by leaders of a political party? What was the advisory issued by the Election Commission to star campaigners? What did the Supreme Court rule with respect to the matter in 2023?

EXPLAINER

Gujarat: A

The story so far:

Smriti Irani, wife of Delhi Chief Minister Arvind Kejriwal, was appointed as a 'star campaigner' by the state Aadmi Party (AAP) for its campaign in Gujarat.

What are the legal provisions?

Section 77 of the Representation of the People Act, 1951 (RP Act) provides for law relating to expenditure incurred by leaders of a political party'. These 'leaders of a political party' are popularly known as 'star campaigners'. These star campaigners are usually the top leaders of a political party but can include other celebrities as well. The only requirement is that these persons have to be members of the political party that appoints them. The RP Act provides that a recognised political party (national or State) can appoint a maximum of 40 star campaigners while a registered unrecognised political party can appoint up to 20. These names are to be communicated to the Election Commission (EC) and Chief Electoral Officer (CEO) of the State concerned within seven days from the date of notification of such election. In case of a multi-phase election, a political party can submit separate list of star campaigners for different phases. However, it is noted that all major parties provide a single list for a State that is applicable for all phases.

What are the benefits?

The RP Act provides that expenditure incurred by the 'leaders of a political party' on account of travel by air or any other means of transport for campaigning for their political party shall not be deemed to be part of the election expenditure of a candidate of such party. The election expenditure limit for candidates is ₹95 lakh per Lok Sabha constituency in larger States and ₹75 lakh in smaller States. The cost of star campaigners would be over-and-above the candidate-set-up by respective parties without affecting their expenditure limit. However, this is applicable only if the star campaigners limit themselves to general campaigning for the party. If in any public meeting, any star campaigner seeks votes in the name of contesting candidate(s) or shares the dais with them, then the rally/meeting expense shall be apportioned to the account of candidate(s). Similarly, if the star campaigner incurs boarding/lodging expenses while campaigning for any candidate(s), it shall be included in the expenditure account of such candidate(s) irrespective of whether it is paid for by the candidate(s). Further, if any candidate(s) travel with the star campaigner in his/her vehicle, the expenditure of the star campaigner shall also be apportioned to such candidate(s).

What are the issues?

The EC has issued an advisory to all political parties to maintain decorum and dignity in campaigning and raise the level of election to 'issue' based debate. It also put star campaigners on notice in case of any violations. The star campaigners of all parties have been warned against using communal or divisive words against leaders of other political parties – appealing to caste/communal feelings of electors and making unsubstantiated allegations. In January 2020, during a campaign for the Delhi Assembly election, the EC had ordered removal of Anurag Thakur and Parvesh Verma of BJP from the list of star campaigners for making inflammatory utterances that violated the Model Code of Conduct. In another instance in November 2020, during the campaign for the Bihar Assembly, the Supreme Court vacated the order of the EC revoking the star campaigner status of Kamal Nath of the Congress party for making a derogatory statement against a woman candidate of the BJP. The court observed that the EC has no power in the matter. The underlying issue is with respect to the assessment of expenditure incurred for the rallies/meetings of such star campaigners which is always significantly lower than the actual expenditure. This may be due to the ease used by the EC that does not count the travel expenses in the various heads. The result is lower apportionment of expenditure to contesting candidates.

What needs to be done?

At present, the RP Act stipulates that political parties can appoint or revoke the appointment of star campaigners. As per Article 324 of the Constitution, the EC is the highest authority that has been vested with the powers of superintendence and direction of elections. The EC may be empowered to authorise the EC to revoke the 'star campaigner' status of a leader, in case of any serious violation of Model Code of Conduct, thereby depriving the party candidates of expenditure relief to their campaign. This would be quickly effective in disciplining political parties and ensure that campaigns maintain the necessary decorum and restraint. Also, the assessment and apportionment of rallymeeting expenses incurred by star campaigners for a particular candidate(s) should be made more robust.

Anupreeta A is a former IAS officer and author of 'Policy Simplified'. She trains civil service aspirants at Vajiram IAS Academy. Views expressed are personal.

THE GIST

- Section 77 of the Representation of the People Act, 1951, RP Act, provides for law relating to expenditure incurred by leaders of a political party. These 'leaders of a political party' are popularly known as 'star campaigners'.
- The EC has issued an advisory to all political parties to maintain decorum and dignity in campaigning and raise the level of election to 'issue' based debate. It also put star campaigners on notice in case of any violations.
- In January 2020, during a campaign for the Delhi Assembly election, the EC had ordered removal of Anurag Thakur and Parvesh Verma of BJP from the list of star campaigners for making inflammatory utterances that violated the Model Code of Conduct.

- **Why in News:** In the wake of Lok Sabha Elections, political parties have started releasing the names of 'star campaigners'.
- **About star campaigner**
  - A star campaigner is a celebrity vote seeker in an election for a party.
  - **Section 77 of the Representation of the People Act, 1951 (RP Act)** provides for law relating to expenditure incurred by 'leaders of a political party'. These 'leaders of a political party' are popularly known as **'star campaigners'.**
  - These star campaigners are usually the top leaders of a political party but can include other celebrities as well.
  - **Requirement:** The only requirement is that these persons **have to be members of the political party that appoints them.**
  - **Numbers:** The RP Act provides that a recognised political party (national or State) can appoint a maximum of 40 star campaigners while a registered unrecognised political party can appoint up to 20.
  - The list has to be sent to the **Election Commission of India.**
  - **Cost:** ECI has fixed Rs 95 lakh expenseslimit for candidates of bigger Lok Sabha constituencies and up to Rs 75 lakh for candidates of smaller constituencies.
    - Political parties cover all costs of star campaigners under the RP Act. But the star campaigner's expenses are **not deducted from the candidate's expenditure.**
    - Thus it allows the candidates extra spending opportunity beyond the poll panel's Rs 75 – Rs 95 Lakh limitfor Lok Sabha polls.

4. 2024 Padma Awards
Recent events of importance

Padma awards: Venkaiah Naidu, Mithun Chakraborty, Usha Uthup honoured

The Hindu Bureau
NEW DELHI

Former Vice-President M. Venkaiah Naidu, actor-turned-politician Mithun Chakraborty, singer Usha Uthup and tennis player Rohan Bopanna were among a host of prominent personalities who were conferred with Padma awards by President Droupadi Murmu on Monday.

Along with Mr. Naidu, Sulabh International's founder Bindeshwar Pathak and Bharatanatyam dancer Padma Subrahmanyam were conferred with Padma Vibhushan. Pathak was given the award posthumously and it was received by his wife, Amola.

Apart from Mr. Chakraborty, popularly known as Mithunda, singer Usha Uthup, former Uttar Pradesh Governor Ram Naik and industrialist Sitaram Jindal were conferred with the Padma Bhushan.

Gujarat-based cardiologist Tejas Madhusudan Patel, veteran Marathi film director Dattaray Ambadas Mayaloo, alias Rajdutt, and Chandreshwar Prasad Thakur, a physician known for his contribution to research and policy on Kala Azar, were the other notable Padma Bhushan recipients.

Vice-President Jagdeep Dhankhar, Prime Minister Narendra Modi, Union Home Minister Amit Shah and External Affairs Minister S. Jaishankar, were present at the function.

Padma Shri awardees include master carpet weaver from Uttar Pradesh Khalil Ahamad, Madhya Pradesh's folk singer Kaluram Bamaniya, Bangladeshi singer Rezwana Choudhury Bannya and Chikankari embroidery artist from Uttar Pradesh Naseem Bano.

(With PTI inputs)

President Droupadi Murmu confers Padma Vibhushan on former Vice-President M. Venkaiah Naidu in New Delhi on Monday. ANI

- **Why in News:** The **Padma Awards 2024** have been announced, and the list includes 132 recipients, with 30 of them being women and 8 from the categories of foreign **non-resident Indian (NRI), person of Indian origin (PIO),** and **overseas citizenship of India (OCI).**
- **About Padma Awards:**
  - The Padma Awards are one of the **highest civilian honours**only after Bharat Ratna of India announced annually on the eve of Republic Day.
  - The Awards are given in three categories**:**
    - **Padma Vibhushan (for exceptional and distinguished service)**
    - **Padma Bhushan (distinguished service of higher order)**
    - **Padma Shri (distinguished service)**
  - The Padma Awards are conferred on the recommendations made by the **Padma Awards Committee, which is constituted by the Prime Minister every year**.
  - The awards are presented by the **President of India**usually in the **month of March/April every year** where the awardees are presented a Sanad (certificate) signed by the President and a medallion.
  - The award does not amount to a title and cannot be used as a **suffix or prefix**to the awardees' name.
  - The total number of awards to be given in a year (excluding posthumous awards and to NRI/foreigners/OCIs) should not be more than 120.
  - **Eligibility:**
    - All persons without distinction of **race, occupation, position or sex** are eligible for these awards.
    - Government servants including those working with PSUs, except doctors and scientists, are not eligible for these Awards.
    - The award is normally not conferred posthumously. However, in highly deserving cases, the Government could consider giving an award posthumously.

5. Denying child-care leaves to mother violates constitution: SC
GS 2 (Social Issues)

- **Why in News:** The Supreme Court said that denying child care leave to working mothers of disabled children violated the constitutional mandate for equal participation of women in the workforce.
- **Significance of Child-Care Leaves (CCL)**
  - **Constitutional entitlement**: A bench of Supreme Court emphasised that the participation of women in the work force is not just a matter of privilege but constitutional entitlement by **Article 15 of the Constitution.**

- **Violation of constitutional mandate**: The court said the provision of Child-Care Leaves (CCL) to women subserves an important constitutional object, and denying the same to mothers of children with disabilities would **violate the constitutional duty** to ensure equal women participation in the workforce.

- **Barriers addressed by this ruling**

- **Systematic barriers**: At its core, this ruling addresses the systemic barriers faced by women in balancing their professional careers with caregiving duties, particularly when they have children with disabilities.
- **Gender disparity and undermined children's rights**: Denying child care leave to these mothers not only perpetuates gender disparities in the workforce but also undermines the rights of children with disabilities to receive adequate care and support from their parents.
- **Societal attitudes towards caregiving:** Moreover, the ruling underscores the broader societal attitudes towards caregiving, gender roles, and the inclusion of persons with disabilities.
- **State's obligations:** Additionally, the ruling emphasizes the obligation of the state and employers to adopt inclusive policies that promote gender equality and support the diverse needs of working parents, including those with children with disabilities.

- In conclusion, the Supreme Court's verdict on child care leave for mothers of disabled children reflects a significant step towards upholding gender equality, safeguarding the rights of children with disabilities, and fostering an inclusive society. It underscores the imperative for legislative and policy reforms that prioritize the needs of marginalized groups and promote a more equitable and supportive environment for all members of society.

6. Britain's Rwanda migrant deportation
GS 2 (International Relations)

'Rwanda deportation flights in 10-12 weeks'

Sunak to push through a Bill, the current version of which declares Rwanda a safe country to send asylum seekers; this clause was designed to circumvent a U.K. Supreme Court ruling that said the policy was unlawful; over 5,000 people arrived in the U.K. in the first quarter of this year

Sriram Lakshman
LONDON

U.K. Prime Minister Rishi Sunak said on Monday he would push through a parliamentary vote on his government's highly controversial Rwanda deportation legislation, as he promised that flights would begin taking asylum seekers to Rwanda in 10-12 weeks.

A record number – just under 5,000 – people had arrived in the U.K. on boats via the English Channel in the first quarter of this year, according to U.K. government data. Afghanistan, Iran, Pakistan, India and Bangladesh were the top five countries of origin for migrants arriving in boats in 2023.

"Parliament will sit there tonight – and vote – no matter how late it goes," Mr. Sunak said at a press conference in Downing Street on Monday. The House of Commons and Lords were scheduled to consider the Safety of Rwanda (Asylum and Immigration) Bill on Monday.

The House of Lords, where Mr. Sunak's Conservative party does not have a majority, had passed amendments last week to exempt Afghan asylum seekers who had helped British operations in Afghanistan and to establish an independent body to review Rwanda's asylum system.

Immigration is a highly sensitive issue in the U.K., which is moving towards a general election in the second half of 2024. The initial plan to send illegal migrants to Rwanda was announced by the Boris Johnson government in 2022. The policy has faced numerous legal challenges, including from the European Court of Human Rights (EHCR) and no flights to Rwanda have taken off to date.

The current version of the Rwanda Bill declares that Rwanda is a safe country to send asylum seekers – a clause designed to circumvent a November 2023 U.K. Supreme Court ruling that said the policy (as it existed at the time) was unlawful. The deportation process would kick off as soon as the vote was over, Mr. Sunak said, as he outlined some of the preparations - from courtrooms to security escorts and flight slots.

People smuggling

"The first flight will leave in 10-12 weeks," the he said, implying that the earlier declared spring deadline would not be met. He said multiple flights would take place through the summer (June- August) and beyond.

The Conservatives have focused on the role of people smuggling gangs as part of their messaging around the deportation Bill and Mr. Sunak, on Monday, said the gangs were currently targeting vulnerable Vietnamese migrants, whose numbers had "increased tenfold" and who accounted for "almost all" the increase in migrant-carrying small boats arriving across the English Channel.

Mr Sunak's party has trailed the opposition Labour Party in polls for some time and stopping the boat crossings has been one of the Prime Minister's pledges. On Monday, he accused Labour of not having a plan to prevent boat crossings and was "resigned to the idea that you will never fully solve this problem".

Steadfast resolve: Britain's Prime Minister Rishi Sunak speaks during a press conference at the Downing Street on Monday. AFP

- **Why in News:** Britain's parliament has passed **Safety of Rwanda (Asylum and Immigration) Act** to deport asylum seekers to Rwanda who arrived illegally.
- **Issue of migration in Britain**
  - Tens of thousands of people have crossed the **English Channel** in small boats in recent years, many fleeing war and poverty.
  - Britain's migration issue stems from various factors such as **economic opportunities, political instability, and humanitarian crise**s, driving individuals to seek refuge or better prospects in the country.
    - Official figures put 2022 annual net migration to Britain at a record of 745,000.
  - The influx of migrants, including asylum-seekers and undocumented immigrants, has sparked debates on **national security, social cohesion, and resource allocation**.
  - Policy responses, such as the **Rwanda Bill,** aimed at curbing migration often face criticism for their ethical implications, effectiveness, and feasibility, highlighting the complex challenges and controversies surrounding migration management in Britain.
- **Agreement to reduce immigration in other countries**
  - **Germany** has tightened the border controls to address immigration concerns.
  - European lawmakers recently approved a **revamped migration system** to reduce unwanted immigration.
  - **Denmark** has also signed a similar agreement with Rwanda, but any development has not yet taken place. **Italy** has announced plans to build reception centres in
  - **Israe**l scrapped a similar deal with Rwanda after five years.
- **Questionable Human Rights**
  - Safety of Rwanda (Asylum and Immigration) Act 2024 might not be compatible with the **European Convention on Human Rights**, affirms that **Rwanda** is a safe country.
  - The UK Supreme Court ruling has already shown that Rwanda's asylum practices are "not safe" and "unreliable".
- **About Britain's Rwanda Plan**
  - The Act will allow the government to transfer illegal migrants seeking to enter the United Kingdom after Jan. 1, 2022 to Rwanda instead, some 4,000 miles away.
  - Partly this is in order to reduce the costly process of assessing migration claims and accommodating those applicants are successful.
- **English Channel (Location)**
  - The English Channel is an arm of the **Atlantic Ocean** that separates Southern England from Northern France.
  - It is located between the Isle of Great Britain's southern coast and France's northern coast and separated from the North Sea on the north by the Strait of Dover.
  - The **Strait of Dover** is the Channel's narrowest point.
  - **Important towns:** Calais, Dover, Isle of Wight, and the Island of Jersey.

7. Gukesh D becomes youngest challenger for world chess title
Recent events of importance

Gukesh scripts history, youngest challenger to world chess champ

AMIT KAMATH
MUMBAI, APRIL 22

IF ANYONE still had any doubts about this, the era of the Indian teenage chess prodigies is here. Chennai boy D Gukesh, 17, has become the youngest winner of the prestigious Candidates chess tournament, the event designated to decide the challenger to take on the world champion.

Playing black in the final round, Gukesh drew with Hikaru Nakamura of the US to take an unassailable lead and earn the right to take on China's Ding Liren in a world title fight next year.

The final moments of the highly-competitive event were not without drama. Gukesh's fate depended on the game between two other contenders — Russia's Ian Nepomniachtchi and Fabiano Caruana of the US. A win for either Nepomniachtchi or Caruana would have seen them play Gukesh in a tie-breaker.

Unable to take the pressure of watching the tournament-deciding game on the adjoining board, Gukesh went for a walk to soothe his nerves. It was his father who broke the news to him that he had walked into history.

The new poster boy of Indian chess, known for his deadpan expression, would confess to being "completely emotional".

"I am so relieved and so happy. I was following this crazy game (Caruana vs Nepomniachtchi), and I was completely emotional, but now, after the

CONTINUED ON PAGE 2

EXPLAINED

Why the win is significant

EVER SINCE the pandemic, India has seen a chess boom. Streaming platforms have become popular and the GM count has gone to 84. Chennai hosted the Chess Olympiad and IPL-kind franchise league too kicked off. With this win, Gukesh has shown Indians don't just have the numbers, but quality too.

RELATED REPORT
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- **Why in News:** Teenage Indian chess prodigy **Gukesh Dommaraju**, better known as **Gukesh D,** became the youngest player to claim the **men's Candidates Tournament in Toronto, Canada.**
- **More on News:**
  - Gukesh is ranked 16th in the world by the **International Chess Federation (FIDE).**
  - Gukesh is set to become the **youngest player** ever to challenge for a world chess title.
  - The previous youngest winner of a Candidates tournament was Russian prodigy Kasparov then 20, in 1984.
  - Joining Gukesh in the men's Candidates tournament was **Rameshbabu Praggnanandhaa (R Praggnanandhaa), 18,**who famously stunned the chess world by beating Carlsen in 2022.
    - "Pragg", as he is known to fans, became the youngest international chess master at the age of 10 and the second-youngest grandmaster in the world at 12.
    - Last year, he and his sister, 22-year-old Rameshbabu Vaishali (R Vaishali), became the first-ever brother and sister duo to obtain grandmaster titles.
  - Gukesh is the second Indian to play in a world championship after legendary Indian player **Viswanathan "Vishy" Anand**

8. FSSAI to check quality of Spices
GS 2 (Health)

FSSAI asks states to test branded spices amid quality concerns

EXPRESS NEWS SERVICE
NEW DELHI, APRIL 22

THE COUNTRY'S apex food regulator Food Safety and Standards Authority of India (FSSAI) has asked states to collect samples of different brands of powdered spices for test. This comes after authorities in Hong Kong and Singapore ordered that four spice mixes from two of India's top spice manufactures — MDH and Everest — be withdrawn following detection of high levels of ethylene oxide.

The food regulator has also started collecting samples of baby formula to check whether they conform to Indian standards. This comes after an international body highlighted that food and beverage giant Nestle was selling baby formula with higher sugar content in South Asian, African, and Latin American countries.

Earlier, the FSSAI had said that the lab reports of the samples from India will be sought and placed before the existing, in-house subject expert committee for examination. A consolidated report on spices is likely to come out in 25 days, according to officials in the know of the matter.

"Samples of spice mixes from all brands will be tested for the presence of ethylene oxide — the compound is not allowed in food products as per the regulations," the officials said. The International Agency for Research on Cancer (IARC) classifies ethylene oxide as carcinogenic.

- **Why in News:** The **Food Safety and Standards Authority of India (FSSAI)** has ordered a pan-India sampling and testing drive of spices products of various brands to check on safety and quality parameters after **Hong Kong's Centre for Food Safety** asked consumers not to consume few Indian spice brands allegedly over presence of a **pesticide** called **ethylene oxide.**
- **About FSSAI**
  - FSSAI is an **autonomous statutory body** established under the **Food Safety and Standards Act, 2006 (FSS Act)**
  - **Ministry of Health & Family Welfare** is the administrative Ministry of FSSAI.
  - FSSAI is tasked with enforcement of standards and regulations only in the domestic market.
  - **Spice Board of India** evaluates spice products prior to exports and is also expected to look into this issue.
- **Infant nutrition**
  - FSSAI is also expected to be testing samples of **infant nutrition products** being sold in the country.
  - This comes after a report that has raised concerns regarding **"added sugar" levels** in infant cereal products sold by Nestle in India and other developing markets.
  - According to FSSAI regulations-
    - **Lactose and glucose polymers** shall be the preferred carbohydrates for food for infant nutrition.
    - **Sucrose and/or fructose** shall not be added, unless needed as a carbohydrate source, and provided the sum of these does not exceed 20 per cent of total carbohydrate.

9. Llama 3 - Meta's most sophisticated large language model
GS 3 (Science and Tech)

Llama 3, Meta's new, most capable LLM yet

BIJIN JOSE
NEW DELHI, APRIL 22

META LAST week introduced its latest large language model (LLM) — the backbone of artificial intelligence (AI) chatbots that can comprehend and generate human language text — called Llama 3. It has been integrated into the company's virtual assistant Meta AI, which can be used on Facebook, Instagram, WhatsApp, Messenger, and a standalone website.

What is Llama 3?

Llama or Large Language Model Meta AI is a family of LLMs introduced by Meta AI in February 2023. Llama 3 is the latest iteration, which has been based on the Llama 2 architecture. The new LLM has been released in two sizes, 8 billion and 70 billion parameters — a measure of the size and complexity of an AI model.

Both sizes come with a base model and an instruction-tuned version that has been designed to augment performance in specific tasks. The instruction-tuned version is meant for powering AI chatbots that can hold conversations with users.

All models of Llama 3 support context lengths of 8,000 tokens. This allows for more interactions and complex input handling compared to Llama 2 or Llama 1. More tokens mean more context input or prompts from users, and more content as a response from the model.

How good is Llama 3?

Meta claims that the 8 billion and 70 billion-parameter Llama 3 models are a giant leap over Llama 2, as the company made major improvements in pre-training and post-training of the models.

"Our pre-trained and instruction-fine-tuned models are the best models existing today at the 8B and 70B parameter scale," the company said on its website. The post-training processes have enhanced capabilities like reasoning, code generation, and instruction making Llama 3 more steerable, according to Meta.

The company claims that in benchmark evaluations, Llama 3's 8 billion parameters surpassed other open-source AIs like Mistral 7B and Gemma 7B. Llama 3 outperformed Google's Gemma 7B and Mistral's Mistral 7B, Anthropic's Claude 3 Sonnet, in benchmarks such as MMLU (Massive Multitask Language Understanding), GPQA (a graduate-level Google-proof question and answer benchmark), HumanEval (a benchmark for evaluating the multilingual ability of code generative models), GSM-8K, and Math (maths and word problems).

Although Meta has not officially stated the use cases of Llama 3, considering that it is similar to existing AI chatbots, Llama 3 can be used to create different forms of texts such as poems, code, scripts, and musical pieces. It can summarise factual topics and can also be used to translate languages.

Mark Zuckerberg's Meta launched Llama in 2023. Wikimedia Commons

- **Why in News:** Meta has introduced its most capable Large Language Model (LLM), the Meta Llama 3. It also introduced an image generator, which updates pictures in real-time even as the user types out the prompt.
- **Large Language Models (LLMs)**
  - Large language models use deep learning techniques to process large amounts of text.
  - They work by processing vast amounts of text, understanding the structure and meaning, and learning from it.
  - LLMs are trained to identify meanings and relationships between words.
  - The greater the amount of training data a model is fed, the smarter it gets at understanding and producing text.
    - The training data is usually large datasets, such as Wikipedia, Open Web Text, and the Common Crawl Corpus.
    - These contain large amounts of text data, which the models use to understand and generate natural language.
- **Generative Pre-trained Transformers (GPTs)**
  - **GPTs are a type of LLM** that use transformer neural networks to generate human-like text.
  - GPTs are trained on large amounts of unlabelled text data from the internet, enabling them to understand and generate coherent and contextually relevant text.
  - They can be fine-tuned for specific tasks like: Language generation, Sentiment analysis, Language modelling, Machine translation, Text classification.

- GPTs use self-attention mechanisms to focus on different parts of the input text during each processing step.
- This allows GPT models to capture more context and improve performance on natural language processing (NLP) tasks.
  - NLP is the ability of a computer program to understand human language as it is spoken and written -- referred to as natural language.

- **Llama 3**
  - **About**
    - Llama or Large Language Model Meta AI is a family of LLMs introduced by Meta AI in February 2023.
    - The first version of the model was released in four sizes — 7B, 13B, 33B, and 65 billion parameters.
    - As per the reports, the 13B model of Llama outperformed OpenAI's GPT-3 which had 135 billion parameters.
      - Parameters are a measure of the size and complexity of an AI model.
      - Generally, a larger number of parameters means an AI model is more complex and powerful.
  - **Features**
    - Llama 3 is claimed to be the most sophisticated model with significant progress in terms of performance and AI capabilities.
    - Llama 3, which is based on the Llama 2 architecture, has been released in two sizes, 8B and 70B parameters.
    - Both sizes come with a base model and an instruction-tuned version that has been designed to augment performance in specific tasks.
      - The instruction-tuned version is meant for powering AI chatbots that are meant to hold conversations with users.
    - For now, Meta has released text-based models in the Llama 3 collection of models.
      - However, the company has plans to make it multilingual and multimodal, accept longer context, all while continuing to improve performance across LLM abilities such as coding and reasoning.
    - All models of Llama 3 support context lengths of 8,000 tokens. This allows for more interactions, and complex input handling compared to Llama 2 or 1.
      - More tokens here mean more content input or prompts from users and more content as a response from the model.

10. What do countries and companies want in global plastic treaty talks?
GS 3 (Environment)

- **Why in News:**
  - Global leaders will gather in Canada's capital -Ottawa- to discuss progress in drafting a first-ever global treaty to rein in soaring plastic pollution by the end of the year. This treaty is expected to be finalized by the end of this year.
  - If negotiated and agreed upon by members, this treaty could be the most significant deal relating to climate-warming emissions and environmental protection since the 2015 Paris Agreement.
- **United Nations Environment Assembly(UNEA)**
  - **About**
    - UNEA is the world's highest-level decision-making body on the environment.
    - UNEA enjoys the universal membership of all 193 UN Member States and the full involvement of major groups and stakeholders.
    - It gathers ministers of environment in Nairobi, Kenya every 2 years.
  - **Creation**
    - UNEA was created in 2012, as an outcome of the UN Conference on Sustainable Development (Rio+20), held in Brazil.
  - **Function**
    - UNEA sets the global environmental agenda, provides overarching policy guidance, and defines policy responses to address emerging environmental challenges.

Plastic treaty talks: What do countries, firms want?

GLOBAL LEADERS will gather in Ottawa, Canada, this week to discuss progress in drafting a first-ever global treaty to rein in plastic pollution by the end of the year.

The hoped-for treaty, due to be agreed at the end of this year, could be the most significant deal relating to climate-warming emissions and environmental protection since the 2015 Paris Agreement, in which 195 parties agreed to keep global temperatures from rising beyond 1.5 degree Celsius.

Why are the talks happening?

At the UN Environmental Assembly in 2022, nations agreed to develop a legally binding agreement by the end of 2024 to address the world's plastic pollution crisis.

The treaty is meant to address plastics through their entire lifecycle -- from when they are produced, to how they are used and then disposed of.

What do nations want in the treaty?

Many plastic and petrochemical-producing countries including Saudi Arabia, Iran, and China have opposed mentioning production limits.

They blocked other countries from formally working on proposed treaty language calling for production caps, chemical disclosures or reduction schedules after last year's Nairobi session.

Sixty countries, including EU countries, island nations, and Japan, want to end plastic pollution by 2040. They have called for common, legally binding provisions to "restrain and reduce the production and consumption of primary plastic polymers to sustainable levels". They also are proposing measures such as phasing out "problematic" single-use plastics and banning certain chemical additives.

What do the petrochemical industry and corporate brands want?

The trade group Global Partners for Plastics Circularity represents major petrochemical producers including members of the American Chemistry Council and Plastics Europe. The group argues that production caps would lead to higher prices for consumers, and that the treaty should address plastics only after they are made.

More than 200 consumer-facing companies including Unilever, PepsiCo, and Walmart have joined the so-called Business Coalition for a Plastics Treaty.

These companies, which rely on plastic packaging, have been a major presence in the negotiations. They support a treaty that includes production caps, use "restrictions and phase-outs, reuse policies, product design requirements, extended producer responsibility, and waste management". REUTERS

- **Plastic treaty talks – Background**
  - At the UN Environmental Assembly in 2022, the world's nations agreed to develop a legally binding agreement by the end of 2024 to address the world's plastic pollution crisis.
  - The treaty is meant to address plastics through their entire lifecycle - from when they are produced, to how they are used and then disposed of.
- **Problem with plastics**
  - **Source of pollution**
    - Producing plastics involves releasing greenhouse gas emissions
  - **Contribution in global carbon emissions**
    - The plastic industry now accounts for 5 per cent of global carbon emissions, which could grow to 20 per cent by 2050 if current trends continue.
  - **Increased plastic production**
    - Plastic production is on track to triple by 2060 - unless the treaty sets production limits, as some have proposed. Most virgin plastic is derived from petroleum.
- **Negotiation in Ottawa**
  - **Challenges**
    - Countries have become divided on the issues during three previous rounds of talks - held in Punta del Este (Uruguay), Paris and most recently in Nairobi.
    - At the Nairobi talks, in November 2022, the draft treaty under review ballooned from 30 pages to 70 as some countries insisted on including their objections to more ambitious measures like production limits and phase-outs.
    - Countries are now under pressure to find common ground before the final negotiations are held in December in Busan, South Korea.
  - **What do countries want in the treaty?**
    - **Demands of group of Like-Minded Countries**
      - Many plastic and petrochemical-producing countries have opposed mentioning production limits.
      - These countries include Saudi Arabia, Iran and China and are known collectively as the group of Like-Minded Countries.
    - **Demands of High-Ambition Coalition**
      - The 60-nation High-Ambition Coalition, which includes EU countries, island nations, Japan and the UAE, wants to end plastic pollution by 2040.
      - This coalition has called for common, legally binding provisions to restrain and reduce the production and consumption of primary plastic polymers to sustainable levels.

- They also are proposing measures such as phasing out problematic single-use plastics and banning certain chemical additives that could carry health risks.

- **What does the petrochemical industry want?**
  - The major petrochemical producers argue that:
    - production caps would lead to higher prices for consumers, and
    - the treaty should address plastics only after they are made.
  - These companies want to focus on encouraging the reuse or recycling of plastics, and on developing the market for burning plastics as fuel.
  - In terms of transparency about chemicals used in production, the group says companies should be allowed to disclose those chemicals voluntarily.
- **What do corporate brands want?**
  - More than 200 consumer-facing companies including Unilever, PepsiCo and Walmart have joined the so-called Business Coalition for a Plastics Treaty.
  - Like the petrochemical industry, these companies that rely on plastic packaging for their products have been a major presence in the plastics negotiations.
  - But they support a treaty that includes production caps, use restrictions and phase-outs, reuse policies, product design requirements, extended producer responsibility, and waste management.

11. Why High Court Upheld Karnataka's Ban on Hookah?

Recent events of importance

- **Why in News:** The Karnataka High Court upheld the state government's ban on hookahs as being **in the interest of the general public**, and ruled that hookah bars were **an illegal "service" under India's anti-tobacco law.**
- **What were the Karnataka Government's Arguments in the Court?**
  - **Article 47** (in Part IV - DPSP) of the Constitution places a duty on the State **to raise the level of nutrition** and the standard of living and to improve public health, which includes the prohibition of the consumption of intoxicating drinks and drugs which are injurious to health. Though directive principles **are not enforceable by any court**, they are **fundamental in the governance of the country.**
- **What were the Petitioners' Arguments in the Court?**
  - According to several restaurant owners, the government's notification to ban hookah **violates** their fundamental right to practise any profession, or to carry on any occupation, trade or business guaranteed by **Article 19(1)(g).**

Why HC upheld Karnataka's ban on hookah

AJOY SINHA KARPURAM
NEW DELHI, APRIL 22

THE KARNATAKA High Court on Monday upheld the state government's ban on hookahs as being in the interest of the general public, and ruled that hookah bars were an illegal "service" under India's anti-tobacco law.

On March 11, a single judge Bench of Justice M Nagaprasanna had reserved its judgment on the challenges by several restaurant owners to the government's February 7 notification.

Article 47 and Article 19(1)(g)

The government argued that Article 47 of the Constitution places a duty on the State to "raise the level of nutrition and the standard of living and to improve public health", which includes the "prohibition of the consumption except for medicinal purposes of intoxicating drinks and of drugs which are injurious to health".

Article 47, along with the rest of the provisions in Part IV of the Constitution, is a "directive principle of state policy". According to the Constitution, directive principles are not "enforceable by any court, but the principles therein laid down are nevertheless fundamental in the governance of the country and it shall be the duty of the State to apply these principles in making laws".

The HC held that Article 47 was intrinsically linked with the right to life with dignity under Article 21.

"The paramount duty is cast upon the States and its authorities to achieve appropriate level of protection to human life and health which is a fundamental right guaranteed to the citizens under Article 21," it said.

The petitioners argued that the government's notification violates the fundamental right to "practise any profession, or to carry on any occupation, trade or business" guaranteed by Article 19(1)(g).

However, the court held that this freedom can be subject to certain reasonable restrictions including the prohibition of certain occupations, trades and businesses, if it is "in the general interest of the public".

The court also held that a directive principle such as Article 47 can be used to justify a restriction on citizens' rights under Article 19(1)(g).

EXPLAINED LAW

Illegal 'service' under tobacco law COTPA

Under Section 31 of the Cigarettes and other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003 (COTPA), the Centre can make further Rules to carry out the provisions of the Act. In 2008, the Prohibition of Smoking in Public Places Rules were brought into force.

Justice Nagaprasanna relied on Rule 4(3), which, after an amendment in 2017, states "No service shall be allowed in any smoking area or space provided for smoking". The court asked whether *hookah* smoking "is plain smoking which can be permitted in a designated area or it is a product of service that needs to be rendered".

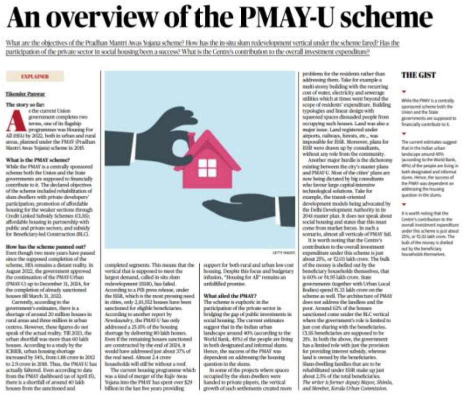
To answer this question, the court compared *hookah* smoking to smoking a cigarette. It found that while "smoking zones created in designated places do not give any other service except creation of a smoking zone", *hookah* smoking "needs rendering of services in the designated area, as it requires external human hand to place all the apparatus on the tables like food or alcohol would be served on those tables".

Thus, the court held, "the very act of preparation to smoke *hookah* tobacco, cannot but be held to be a service", and the state is only implementing a prohibition against "service" that is already in place. The court held that the notification would also apply to "herbal *hookah*", which too requires an "instrument", and thus qualifies as a service under the Rules.

- **What the Karnataka HC Ruled?**
  - The HC held that **Article 47 was intrinsically linked** with the right to life with dignity under **Article 21.** The court held that the freedom guaranteed by Article 19(1)(g) can be subject to **certain reasonable restrictions** in the general interest of the public. A directive principle such as Article 47 can be used to justify a restriction on citizens' rights under Article 19(1)(g).
- **What the Law Says?**
  - In 2008, **the Prohibition of Smoking in Public Places Rules** was brought into force under the Cigarettes and other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act 2003 (**COTPA**). Amended in 2017, the rules states "**No service shall be allowed in any smoking area or space provided for smoking**". However, hookah smoking needs rendering of services in the designated area (The Karnataka HC).

24th April, 2024

1. <u>Pradhan Mantri Awas Yojana (PMAY)</u>
<u>GS 2 (Governance)</u>



An overview of the PMAY-U scheme

What are the objectives of the Pradhan Mantri Awas Yojana scheme? How has the in-situ slum redevelopment vertical under the scheme fared? Has the participation of the private sector in social housing been a success? What is the Centre's contribution to the overall investment expenditure?

EXPLAINER

Tikender Panwar

The story so far:
As the current Union government completes two terms, one of its flagship programmes was Housing For All (HFA) by 2022, both in urban and rural areas, planned under the PMAY (Pradhan Mantri Awas Yojana) scheme in 2015.

What is the PMAY scheme?
While the PMAY is a centrally sponsored scheme both the Union and the State governments are supposed to financially contribute to it. The declared objectives of the scheme included rehabilitation of slum dwellers with private developers' participation; promotion of affordable housing for the weaker sections through Credit Linked Subsidy Schemes (CLSS); affordable housing in partnership with public and private sectors; and subsidy for Beneficiary-led Construction (BLC).

How has the scheme panned out?
Even though two more years have passed since the supposed completion of the scheme, HFA remains a distant reality. In August 2022, the government approved the continuation of the PMAY-Urban (PMAY-U) up to December 31, 2024, for the completion of already sanctioned houses till March 31, 2022.
Currently, according to the government's estimates, there is a shortage of around 20 million houses in rural areas and three million in urban centres. However, these figures do not speak of the actual reality. Till 2023, the urban shortfall was more than 60 lakh houses. According to a study by the ICRIER, urban housing shortage increased by 54%, from 1.88 crore in 2012 to 2.9 crore in 2018. Thus, the PMAY-U has actually faltered. Even according to data from the PMAY dashboard (as of April 15), there is a shortfall of around 40 lakh houses from the sanctioned and completed segments. This means that the vertical that is supposed to meet the largest demand, called in-situ slum redevelopment (ISSR), has failed. According to a PIB press release, under the ISSR, which is the most pressing need in cities, only 2,10,552 houses have been sanctioned for eligible beneficiaries. According to another report by Newslaundry, the PMAY-U has only addressed a 25.15% of the housing shortage by delivering 80 lakh homes. Even if the remaining houses sanctioned are constructed by the end of 2024, it would have addressed just about 37% of the real need. Almost 2.4 crore households will still be without a roof.
The current housing programme which was a kind of merger of the Rajiv Awas Yojana into the PMAY has spent over $29 billion in the last five years providing support for both rural and urban low-cost housing. Despite this focus and budgetary infusion, "Housing for All" remains an unfulfilled promise.

What ailed the PMAY?
The scheme is euphoric in the participation of the private sector in bridging the gap of public investments in social housing. The current estimates suggest that in the Indian urban landscape around 40% (according to the World Bank, 49%) of the people are living in both designated and informal slums. Hence, the success of the PMAY was dependent on addressing the housing question in the slums.
In some of the projects where spaces occupied by the slum dwellers were handed to private players, the vertical growth of such settlements created more problems for the residents rather than addressing them. Take for example a multi-storey building with the recurring cost of water, electricity and sewerage utilities which at times went beyond the scope of residents' expenditure. Building typologies and linear design with squeezed spaces dissuaded people from occupying such houses. Land was also a major issue. Land registered under airports, railways, forests, etc., was impossible for ISSR. Moreover, plans for ISSR were drawn up by consultants, without any role from the community.
Another major hurdle is the dichotomy existing between the city's master plans and PMAY-U. Most of the cities' plans are now being dictated by big consultants who favour large capital-intensive technological solutions. Take for example, the transit-oriented development models being advocated by the Delhi Development Authority in its 2041 master plan. It does not speak about social housing and states that this must come from market forces. In such a scenario, almost all verticals of PMAY fail.
It is worth noting that the Centre's contribution to the overall investment expenditure under this scheme is just about 25%, or ₹2.03 lakh crore. The bulk of the money is shelled out by the beneficiary households themselves, that is 60% or ₹4.95 lakh crore. State governments (together with Urban Local Bodies) spend ₹1.33 lakh crore on the scheme as well. The architecture of PMAY does not address the landless and the poor. Around 62% of the houses sanctioned come under the BLC vertical where the government's role is limited to just cost sharing with the beneficiaries. CLSS beneficiaries are supposed to be 28%. In both the above, the government has a limited role with just the provision for providing interest subsidy, whereas land is owned by the beneficiaries. Slum-dwelling families that are to be rehabilitated under ISSR make up just about 2.5% of the total beneficiaries.
The writer is former deputy Mayor, Shimla, and Member, Kerala Urban Commission.

THE GIST

While the PMAY is a centrally sponsored scheme both the Union and the State governments are supposed to financially contribute to it.

The current estimates suggest that in the Indian urban landscape around 40% (according to the World Bank, 49%) of the people are living in both designated and informal slums. Hence, the success of the PMAY was dependent on addressing the housing question in the slums.

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- **Why in News:** Under the **Pradhan Mantri Awas Yojana (PMAY),** launched in 2015 to facilitate access to affordable housing to those belonging to economically weaker sections of society, the government is close to achieving the target of 30 million houses.
- **About Pradhan Mantri Awas Yojana (PMAY)**
  - PMAY is a **centrally sponsored scheme**, however, both the Union and the State governments are supposed to financially contribute to it.
  - **Objectives:**
    - Rehabilitation of slum dwellers with private developers' participation
    - Promotion of affordable housing for the weaker sections through Credit Linked Subsidy Schemes (CLSS)
    - Affordable housing in partnership with public and private sectors
    - Subsidy for Beneficiary-led Construction (BLC)
  - **Eligibility:** Women and minorities, marginalised groups such as the transgender community, widows, and individuals from lower-income groups.
  - **Types of Pradhan Mantri Awas Yojana (PMAY) scheme**
    - **PMAY Gramin (PMAY-G):** Affordable and accessible housing units to eligible beneficiaries residing in rural areas.
    - **PMAY Urban (PMAY-U):** Addressing the housing needs of urban areas in India, covering 4,331 towns and cities.
  - **Progress so far:** Even though two more years have passed since the supposed completion of the scheme, **Housing For All (HfA)**remains a distant reality. In August 2022, the government approved the continuation of the PMAY-Urban (PMAY-U) up to December 31, 2024, for the completion of already sanctioned houses till March 31, 2022.

2. <u>How is India Planning to Boost EV Production?</u>
<u>GS 3 (Economy)</u>

How is India planning to boost EV production?

How have domestic players reacted to the policy? How can electric vehicle adoption be upscaled?

Saptaparno Ghosh

The story so far:
The Union government on March 15 approved a policy to promote India as a manufacturing hub for Electric Vehicles (EVs). The minimum investment cap has been set at ₹4,150 crore.

What does the policy stipulate?
The policy broadly clears the path for global EV makers like Tesla and Chinese EV maker BYD to foray into the Indian markets. The central goal of this policy is to enable transitioning to localised production in a commercially viable manner and plan as per local market conditions and demand. The most significant provision is the reduction of import duty on electric vehicles imported as a Completely Built Unit (CBU) with a minimum cost, insurance and freight (CIF) value of $35,000 to 15% (for a five-year period) from the present 70%-100%. This is provided the maker sets up a manufacturing unit within three years. The policy also stipulates that a total duty of ₹6,484 crore or an amount proportional to the investment made – whichever is lower– would be waived on the total number of EVs imported. It must be noted that, a maximum of 40,000 EVs can be imported under the scheme at not more than 8,000 units a year, provided the minimum investment made is $800 million. Another important aspect of the scheme is localisation targets. Manufacturers have three years to set up their manufacturing facilities in India. They are expected to attain 25% localisation by the third year of incentivised operation and 50% by the fifth year. Should the localisation targets not be achieved, and if the minimum investment criteria as defined under the scheme is not meet , the bank guarantees of the manufacturers would be revoked.

What about domestic players?
Tata Motors, as reported by *Reuters* in December 2023, had opposed the Tesla proposal. It argued that lowering duties would hit the domestic industry and "the investment climate will get vitiated." Assessing the policy from the perspective of domestic players, Rajat Mahajan, Partner at Deloitte India told *The Hindu*, "Most Indian players are leading in the segments below ₹29 lakh as of now, and hence this policy benefit (from 15% import duty) will likely be for Original Equipment Manufacturers (OEMs) catering to consumers in the higher end of the market." He added that the policy makes it lucrative for global EV players and Indian JVs with such players, to expand sales and manufacture in India.

How does it cater to Indian markets?
I.V. Rao, Distinguished Fellow at The Energy and Resources Institute (TERI), thinks that global players in India must consider local circumstances, like the environment, roads, and usage conditions. Mr. Mahajan from Deloitte notes that while penetration in the two-and three-wheeler segment has been significant, passenger vehicles have seen only a 2.2% contribution thus far. "This is mainly due to lack of proper charging infrastructure, range anxiety, and limited number of products in the affordable range due to limited localisation," he observed. The Confederation of Indian Industry (CII) in a July 2023 report had observed that India may require at least 13 lakh charging stations by 2030 to support "aggressive EV uptake."
Dinesh Abrol, retired professor at the Institute for Studies in Industrial Development explained to *The Hindu* that the associated EV ecosystem must be made capable of addressing reliability and durability of components and service support. Mr. Abrol pointed to how Suzuki enhanced their control in their business partnership with Indian car maker Maruti, resulting in growth of imports. He added that liberalisation and globalisation currents acquiring increased hold of the components' manufacturing system altered its manufacturing priorities. He added that the 21st century cannot be guided only by notions of competitive products, instead, they must also be sustainable. "We need to focus on domestic demand to guide our product and system designs and business portfolios. Exports will follow, he said, adding that "appropriate product and system designs in case of two wheelers and three wheelers and four wheelers will have to guide PLI. Foreign capital would not easily meet this purpose. Indian manufacturers should be directed to this."

THE GIST

The Union government on March 15 approved a policy to promote India as a manufacturing hub for Electric Vehicles (EVs).

Tata Motors, as reported by *Reuters* in December 2023, had opposed the Tesla proposal. It argued that lowering duties would hit the domestic industry.

I.V. Rao, Distinguished Fellow at The Energy and Resources Institute (TERI), thinks that global players setting up shop in India must consider local circumstances, like the environment, roads, driving behaviour and usage conditions.

- **Background:**
  - In March 2024, the Government of India approved a policy to promote India as a manufacturing hub for Electric Vehicles (EVs).
  - The policy is designed to attract investments in the e-vehicle space by reputed global EV manufacturers.
  - This will provide Indian consumers with access to latest technology, boost the Make in India initiative, strengthen the EV ecosystem by promoting healthy competition among EV players.
  - It will also leading to high volume of production, economies of scale, lower cost of production, reduce imports of crude Oil, lower trade deficit, reduce air pollution, particularly in cities, and will have a positive impact on health and environment.
- **Key Features of the Policy:**
  - Minimum Investment required: **Rs 4,150 Cr**;
  - No limit on maximum Investment;
  - **Timeline for manufacturing**:
    - 3 years for setting up manufacturing facilities in India, and to start commercial production of e-vehicles, and
    - Reach 50% domestic value addition (DVA) within 5 years at the maximum.
  - **Domestic value addition (DVA) during manufacturing**:
    - A localization level of 25% by the 3rd year and 50% by the 5th year will have to be achieved.
  - The **customs duty of 15%** (as applicable to CKD units) would be applicable for a period of 5 years
  - **Not more than 8,000 EVs per year** would be permissible for import under this scheme. The carryover of unutilized annual import limits would be permitted.
  - The Investment commitment made by the company will have to be backed up by a bank guarantee in lieu of the custom duty forgone.
- **EVs in India:**
  - Electric vehicle sales in India jumped 49.25 per cent year-on-year to more than15 lakh units in 2023, according to a data released by the Federation of Automobile Dealers' Association (FADA).
    - The EV industry had recorded a total sales of around 10 lakh units in 2022, as per the data.
  - The surge in sales can be attributed to increase in the availability of products in the market, high fuel prices, state subsidies and sops offered under the **FAME-II Initiative**
- **About FAME-II Scheme:**
  - Launched in 2015, the Fame India scheme is an **incentive scheme that encourages the adoption of electric and hybrid vehicles.**
  - The full form of **FAME India** scheme is "Faster Adoption and Manufacturing of Electric and Hybrid Vehicles in India".
  - In 2019, the Central government approved Phase-II of FAME Scheme with an outlay of **10,000 Crore for a period of 3 years**.
    - Earlier this year, it was extended to March 31, 2024.
  - **Phase-II aims to generate demand by way of supporting 7000 e-Buses, 5 lakh e-3 Wheelers, 55,000 e-4 Wheeler Passenger Cars (including Strong Hybrid) and 10 lakh e-2 Wheelers.**
  - Nearly 2 lakh vehicles have been supported under the FAME-II scheme.
- **Other Measures taken by the Government to promote use of EVs:**
  - **Battery Swapping Policy**:

- Battery swapping is an alternative which involves exchanging discharged batteries for charged ones and provides flexibility to charge them separately.
- This de-links charging and battery usage and keeps the vehicle in operational mode with negligible downtime.
- NITI Aayog, recently, released a draft battery swapping policy under which all metropolitan cities with a population above 40 lakh will be prioritised for development of battery swapping network under the first phase.
- **Battery swapping is an alternative which involves exchanging discharged batteries for charged ones and provides flexibility to charge them separately.**
- This de-links charging and battery usage and keeps the vehicle in operational mode with negligible downtime.

- **Switching to an EV**:
  - Central/State governments provide an upfront subsidy that reduces the overall costs of electric vehicles.
- **E-AMRIT Portal**:
  - The e-AMRIT portal offers various resources to help ease the migration to electric vehicles.

3. NABARD's Climate Strategy 2030
GS 3 (Environment)

NABARD unveils strategy to mobilise green financing

The Hindu Bureau
MUMBAI

National Bank for Agriculture and Rural Development (NABARD) on the occasion of Earth Day unveiled its 'Climate Strategy 2030' document aiming to address India's need for green financing.

NABARD said since India requires approximately $170 billion annually to reach more than $2.5 trillion by 2030, the current green finance inflows are woefully insufficient.

"As of 2019-20, India garnered about $49 billion in green financing, merely a fraction of what is needed. With the majority of funds earmarked for mitigation, only $5 billion was allocated towards adaptation and resilience, reflecting the minimal private sector engagement in these areas due to challenges in bankability and commercial viability," it said in statement.

NABARD's Climate Strategy 2030 is structured around four key pillars which include accelerating green lending across sectors, playing a broader market-making role, internal green transformation and strategic resource mobilisation.

'India requires $170 billion annually to reach $2.5 trillion by 2030; green finance inflows insufficient'

Meanwhile, leading real estate developers have pledged for sustainable development.

DLF, said it had been at the forefront of sustainable construction initiatives. By implementing practices like zero-discharge water systems and sewage treatment plants, it had been able to recycle millions of litres of water daily, reducing the strain on local water sources.

As the only Indian real estate company featured in the Dow Jones Sustainability Index for the past three years, DLF said it exemplified commitment to environmental, social, and governance excellence.

Aakash Ohri, Joint MD, DLF said "Our sewage treatment plants recycle over 14 million liters of water daily, supporting horticulture, secondary water usage, and lake replenishment, reducing groundwater reliance. We prioritise greenery preservation."

- **Why in News:** To address India's escalating need for green financing, **National Bank for Agriculture and Rural Development (NABARD)** unveiled its **Climate Strategy 2030** document on the occasion of **Earth Day.**
- **Need to focus on Green Financing**
  - Green finance, which aligns financial investments with sustainable and eco-friendly projects, has emerged as a pivotal force in fostering the advancement of renewable energy in India.
  - India's commitment to renewable energy, aiming to achieve **500 GW of renewable energy** capacity by 2030, requires **green funding.**
  - While facilitating the expansion of renewable energy infrastructure, green finance contributes to a **reduction in the carbon footprint**.
- **Challenges in the sector**
  - **Insufficient green finance:** India requires approximately USD 170 billion annually to reach a cumulative total of over USD 2.5 trillion by 2030, current green finance inflows are critically insufficient.
    - As of 2019-20, India garnered about USD 49 billion in green financing.
  - **Minimal private sector engagement:** With the majority of funds earmarked for mitigation, only USD 5 billion was allocated towards adaptation and resilience.
  - **Viability issues:** Private sector is showing less interest in these areas due to challenges in bankability and commercial viability.
  - **Other hurdles:**Issues such as project risks, policy uncertainties, and the need for standardized green finance metrics pose hurdles for the sector.
- **NABARD's Climate Strategy 2030**
  - NABARD's Climate Strategy 2030 is a comprehensive blueprint designed to tackle India's growing demand for green financing.
  - It is structured around four key pillars.
    - Accelerating green lending across sectors
    - Playing a broader market-making role
    - Internal green transformation of NABARD
    - Strategic resource mobilisation

4. 2G Spectrum Case
Recent events of importance

Centre urges SC to modify its 2012 order in 2G case

EXPRESS NEWS SERVICE
NEW DELHI, APRIL 23

THE CENTRE has moved the Supreme Court seeking modification of its February 2012 judgment in the 2G case, which directed that all natural resources like spectrum should be allocated through auction.

The plea sought allowing the allocation of spectrum through administrative process in addition to auction. It has contended that pursuant to the judgment, auction is the only mode for spectrum to telecommunication service providers has been unreasonably restricted by the telecommunications industry to sale of regular spectrum auctions.

Central Vigilance Commissioner Pradeep Kumar, appearing for the Centre, mentioned an interim application before the bench of CJI D Y Chandrachud and Justice J B Pardiwala.

The plea said, "however, the assessment of spectrum required not only for commercial telecommunication services, but also for strategic purposes and the discharge of sovereign and public interest functions such as defence, law and order, disaster preparedness, etc." which "would squarely fall within the scope of subsection (2) of section 4".

"There are also specific air generis categories of usage, inflight connectivity, for instance where, technical and economic conditions of the use of spectrum are different from a means of assignment of spectrum and that auction as the exclusive means of assignment of issues in the relevant assignment," it stated.

In the "alternative", it pointed out "may require to be undertaken administratively due to the auction process in question being fewer than the supply or due to technical conditions such as spectrum for space communication, where it would be difficult to put the entire block of spectrum to be shared by multiple players, rather than being assigned to a single entity for the sole purpose of exclusive assignment by auction".

The Government said there is an urgent requirement for the SC "to clarify that in the situations mentioned in the above circumstances, the assignment of spectrum through administrative process in addition to auction, if so determined through due process in accordance with law, for the purposes of the discharge of governmental functions, or public interest so requires, or if auction is not feasible or fair due to technical or economic reasons". The plea said "that this clarification is necessary for the objects of national security, safety, and disaster preparedness, as well as enabling the Union of India to undertake dynamic spectrum sharing, as required, to realise the full potential of telecommunications, to the benefit of the common good".

The SC in February 2012 had quashed the 2G spectrum allocations to different companies by then UPA government.

The plea has also pointed out that the SC while answering a presidential reference in September 2012 had clarified that the ban on use of the term perhaps in the February judgement "suggests that auction is the only method of auction for allocation of natural resources was never intended to be a mandatory method or a blanket statement applicable across all natural resources, but simply indicated that auction is the best over the attractiveness of a method like auction in dispose of natural resources and the use of the word 'perhaps' suggests that the learned Judges considered the possibility of any other method other than auction as conceivable and desirable".

- **Why in News:** More than 12 years after it was delivered, the Centre moved the Supreme Court seeking modification of its verdict in the **2G spectrum case** as the Centre wanted to grant 2G spectrum licences in some cases.
- **The settled Judgement of Supreme Court in 2G Spectrum case**
  - **The only mode:** Auction is the only mode for granting licences for natural resources like spectrum, the radio frequencies allocated to the mobile phone industry for communication over the airwaves.
  - **Duty bound:** When it comes to alienation of scarce natural resources like spectrum etc, it is the burden of the State to ensure that a **non-discriminatory method** is adopted for distribution and alienation, which would necessarily result in protection of national/public interest.
- **Significance of 2G spectrum case**
  - The allocation of natural resources, such as spectrum, is a critical issue that affects the functioning of various industries particularly the telecommunications sector. The 2G spectrum case in India serves as a significant landmark in highlighting the **importance of fair and transparent resource allocation methods.**
  - Auctions ensure **transparency, fairness, and maximum revenue generation** for the government, thereby safeguarding public interest.
- **Lessons Learned**

- **Transparency and Accountability:** The 2G spectrum case emphasizes the need for transparent and accountable mechanisms in allocating natural resources. Auctions serve as a robust method to achieve these objectives, ensuring that resources are allocated efficiently and in the best interest of the public.
- **Preventing Corruption and Favoritism:** By mandating auctions as the sole mode of allocation, the Supreme Court's verdict aimed to curb corruption and **favoritism in resource allocation** processes. Auctions minimize the potential for undue influence and ensure equal opportunities for all stakeholders.
- The 2G spectrum case serves as a reminder of the critical importance of fair and transparent allocation of natural resources. By emphasizing the role of auctions and the state's duty to protect public interest, the judgment sets a precedent for ensuring integrity and accountability in resource allocation processes.

- **About 2G Scam**
  - 2G, or second generation licenses for mobile networks, were given at throwaway prices instead of carrying free and fair auctions.
  - According to the **Comptroller and Auditor General of India,** the scam has caused a notional loss of Rs 1.76 lakh crore to the **Indian national exchequer.**

5. Asia worst hit by disasters in 2023: WMO
GS 3 (Education)

- **Why in News:** In the year 2023, Asia faced the most disasters in the world as 79 events associated with **extreme weather, climate, and water-related hazards,** affecting over nine million people in the region and claiming over 2,000 lives, as per a new report by the **World Meteorological Organization (WMO).**
- **Key-highlights of the Report (Climate Disaster Profile)**
  - **Report Title:** State of the Climate in Asia 2023
  - Asia has warmed faster than the global average and the warming trend has nearly doubled since the 1961-1990 period.
  - Key climate change indicators such as surface temperatures, glacier retreat and sea level rise will have major consequences for Asia, its economy and ecosystems.
  - In India alone, severe heatwaves in April and June resulted in about 110 reported fatalities due to heatstroke.
  - In August 2023, India experienced a record-high monthly mean temperature and exceptional rainfall deficit, which can be linked to **El Niño**
  - Floods were the leading cause of death in reported events in 2023 by a substantial margin.

WORLD METEOROLOGICAL ORGANIZATION REPORT

Asia worst hit by disasters in 2023, 79 extreme weather events killed over 2k

Asia warmed faster than global average, warming trend nearly doubled since 1961-1990: Report

NIKHIL GHANEKAR
NEW DELHI, APRIL 23

ASIA WAS the most disaster-hit region in the world in 2023 as 79 events associated with extreme weather, climate and water affected more than nine million people directly and killed over 2,000, a new report by the World Meteorological Organization said.

The report, 'State of the Climate in Asia 2023', said more than 80 per cent of the reported hydrometeorological hazards in Asia were floods and storms. More than 60 per cent of the 2,000 deaths were caused by flooding and over 15 per cent by storms, the report said. Storms affected the largest number of people and also caused the most economic damage.

The number of disasters in 2023 were just two fewer than in 2022. The number of affected people, however, was far lower in 2023 as the Pakistan floods alone had affected more than 30 million people in 2022.

EXTREME WEATHER EVENTS IN INDIA LAST YR

■ APRIL-JUNE: Severe heatwave, 110 people dead from heatstroke.

■ AUGUST: Floods in Himachal, Uttarakhand; 25 deaths, agri, infra damaged.

■ OCTOBER: Glacial lake outburst flood in Sikkim; 40 deaths

■ DECEMBER: Cyclone Michaung makes landfall in Andhra; 22 deaths

During 2023, India experienced extreme weather events such as severe heatwaves, rainfall-induced floods, glacial lake outbursts and tropical cyclones.

The report noted that Asia has warmed faster than the global average and the warming trend has nearly doubled since the 1961-1990 period. The accelerating rate of key climate change indicators – such as surface temperatures, glacier retreat and sea-level rise – will have major consequences for Asia, its economy and its ecosystems, the report emphasised.

WMO's Secretary-General Celeste Saulo said the report's conclusions are sobering. "Many communities here again experienced their hottest year on record in 2023, along with a barrage of extreme conditions, from droughts and heatwaves to floods and storms. Climate change exacerbated the frequency and severity of such events, profoundly impacting societies, economies, and, most importantly, human lives and the environment that we live in," she said.

In April and June 2023 in India, severe heat waves resulted in around 110 deaths due to heatstroke, the report noted. The deaths of these people, many of them senior citizens with co-morbidities, took place in Ballia and Deoria districts of Uttar Pradesh. Temperatures were in the 42-43 degrees Celsius range in the region at that time.

A prolonged heatwave also affected much of South-East Asia in April and May, extending westwards in Bangladesh and eastern India and parts of China too.

Flood events occurred in India during August 2023 and Himachal Pradesh and Uttarakhand recorded 25 deaths as well as extensive damage to infrastructure and agriculture, the report said.

"Triggered by heavy rainfall, the disaster compounded the effects of an earlier monsoon surge in June. The Indian government declared a state of emergency in the worst-affected areas, initiating rescue and relief operations," the report added.

The Indian subcontinent experienced six tropical cyclones in 2023 which formed in the North Indian Ocean. The cyclone activity was slightly above the average of 5.4 cyclones, the report noted. Four out of the six cyclones (Mocha, Hamoon, Michlli and Michaung) formed the Bay of Bengal and two (Biparjoy and Tej) formed over the Arabian Sea. The extremely severe cyclonic storm Mocha made landfall along the Rakhine Coast in Myanmar on May 14 and killed 156 people.

In India, Michaung made landfall in South Andhra Pradesh on December 5 and claimed 22 lives. The report also took note of the 'significant glacial lake outburst flood' that occurred in South Lhonak lake in Sikkim on October 4 last year. The GLOF event had overtopped and breached the Chungthang dam downstream on Teesta River and killed over 40 people, according to the Sikkim government.

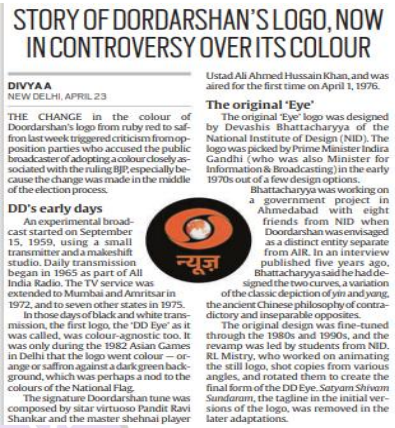
"This type of disaster is increasingly observed because of climate change-induced glacier retreat and highlights the compounding and cascading risks faced by vulnerable mountain communities," the report said.

- **Significance of the Report**
  - The report sheds light on the alarming frequency and severity of climate-related disasters in Asia, emphasizing the urgent need for proactive disaster management strategies.
    - **Urgent Call to Action**: The findings underscore the pressing need for concerted efforts to mitigate the impacts of climate change and enhance resilience to extreme weather events in Asia.
    - **Strengthening Disaster Management**: Effective disaster management strategies, including early warning systems, infrastructure resilience, and community preparedness, are imperative to minimize the loss of life and property during disasters.
    - **Regional Collaboration**: Given the transboundary nature of climate-related disasters, regional cooperation and information sharing are essential for fostering a collective response to the climate crisis.
- **Disaster Management in India:**
  - Disaster Risk Management implies **the systematic process of using administrative decisions, organisation, operational skills, and capacities to implement policies, strategies and coping capacities of the society**and communities to lessen the impact of natural hazards and related environmental and technological disasters.
  - **Disaster risk reduction** aims to reduce disaster risks through systematic efforts to analyse and reduce the causal factors of disasters.
    - **Pre-Disaster risk reduction includes-**Mitigation and Preparedness
    - **Post-Disaster risk reduction includes-**Rescue, Relief and Recovery
- **Required Steps/Initiatives**
  - Increase the coverage of early warning systems
  - Climate proofing infrastructure
  - Invest in disaster risk reduction
  - Building climate and disaster resilience at the sub-national level
  - Integrating possible climate change impacts into the 2005 Disaster Management Actand other existing national frameworks and SOPs.
- **Recent Initiatives**

- **Working group on DRR**: The world's major economies—as part of the G20—now have a working group on **disaster risk reduction (DRR)** for the first time. It has five priority areas: early warning systems, climate resilient infrastructure, financing framework for disaster risk reduction, disaster response systems, and an ecosystem-based approach to risk reduction.
- **Early Warnings for All initiative**: It aims to ensure everyone on Earth is protected from hazardous weather, water, or climate events through life-saving early warning systems by the end of 2027.
- **Coalition for Disaster Resilient Infrastructure:** Launched in 2019, CDRI is now a global coalition of 39 countries and seven organisations.
- **Aapda Mitra Scheme**: Aapda Mitra is a centrally-sponsored scheme by the NDMA aiming to impart training to community volunteers in disaster response in the most affected districts identified across the country on the basis of past disasters

6. Controversy Around Door Darshan's Iconic Logo

Recent events of importance



STORY OF DORDARSHAN'S LOGO, NOW IN CONTROVERSY OVER ITS COLOUR

DIVYA A
NEW DELHI, APRIL 23

THE CHANGE in the colour of Doordarshan's logo from ruby red to saffron last week triggered criticism from opposition parties who accused the public broadcaster of adopting a colour closely associated with the ruling BJP, especially because the change was made in the middle of the election process.

DD's early days

An experimental broadcast started on September 15, 1959, using a small transmitter and a makeshift studio. Daily transmission began in 1965 as part of All India Radio. The TV service was extended to Mumbai and Amritsar in 1972, and to seven other states in 1975.

In those days of black and white transmission, the first logo, the 'DD Eye' as it was called, was colour-agnostic too. It was only during the 1982 Asian Games in Delhi that the logo went colour — orange or saffron against a dark green background, which was perhaps a nod to the colours of the National Flag.

The signature Doordarshan tune was composed by sitar virtuoso Pandit Ravi Shankar and the master shehnai player Ustad Ali Ahmed Hussain Khan, and was aired for the first time on April 1, 1976.

The original 'Eye'

The original 'Eye' logo was designed by Devashis Bhattacharyya of the National Institute of Design (NID). The logo was picked by Prime Minister Indira Gandhi (who was also Minister for Information & Broadcasting) in the early 1970s out of a few design options.

Bhattacharyya was working on a government project in Ahmedabad with eight friends from NID when Doordarshan was envisaged as a distinct entity separate from AIR. In an interview published five years ago, Bhattacharyya said he had designed the two curves, a variation of the classic depiction of *yin* and *yang*, the ancient Chinese philosophy of contradictory and inseparable opposites.

The original design was fine-tuned through the 1980s and 1990s, and the revamp was led by students from NID. RL Mistry, who worked on animating the still logo, shot copies from various angles, and rotated them to create the final form of the DD Eye. *Satyam Shivam Sundaram*, the tagline in the initial versions of the logo, was removed in the later adaptations.

- **Why in News:** Recently, Doordarshan's (DD) logo colour was changed rom ruby red to saffron in the middle of election process striggering criticism from opposition who accused the public broadcaster of adopting a colour associated with the ruling BJP.
- **Evolution of DD Logo**
  - An experimental broadcast of DD started in 1959, daily transmission began in 1965 as part of All India Radio and the TV service was extended to several states in 1975. In those days of black and white transmission, the first logo, 'DD Eye' was colour-agnostic. Satyam Shivam Sundaram was its tagline. The logo was designed by Devashis Bhattacharyya of the National Institute of Design (NID) and was chosen by then Prime Minister Indira Gandhi (also Minister for Information & Broadcasting). The original design was fine-tuned through the 1980s and 1990s. RL Mistry who animated the still logo, shot copies from various angles, and rotated them to create the final form of the DD Eye. The tagline was removed in the later adaptations. It was only during the 1982 Asian Games in Delhi that the logo went colour orange or saffron against a dark green background (matching the colours of National Flag). The logo along with DD tune composed by sitar virtuoso Pandit Ravi Shankar and master shehnai player Ustad Ali Ahmed Hussain Khan(which was aired for the first time in 1976)went on to achieve iconic status with the audience.
- **Response of DD on Allegations of Colour Change**
  - DD said the change was only one of visual aesthetic, and officials pointed out that when the broadcaster went all-colour in the early 1980s, the logo was saffron on a green background.

7. Reservation for Muslims

Recent events of importance

Reservation for Muslims: Andhra Pradesh case and issues before the court

APURVA VISHWANATH
NEW DELHI, APRIL 23

AT A Election rally in Tonk in Rajasthan on Tuesday, Prime Minister Narendra Modi said the Congress has often tried to give reservation to Muslims by reducing the quota for SCs, STs and OBCs. The PM specifically cited attempts at providing 4% quota for Muslims in Andhra Pradesh as a "pilot project, which Congress wanted to try in the entire country".

Reservation for Muslims

Several Muslim communities are included in the Other Backward Classes' (OBC) reservation both at the central and state levels. The criteria for the OBC quota is social and educational backwardness. Article 16 4 of the Constitution provides for reservation for a "backward class of citizens, which in the opinion of the State, is not adequately represented in the services under the State".

The OBC quota works differently in different states.

Andhra Pradesh quota

In Andhra Pradesh, as per the 2011 census, Muslims constitute about 9.56 of the population. Muslim groups such as Dudekula, Jadaful, Pinjari, Noorbash, and Mehtar are included in the state OBC list, which have quota ranging from 7% to 10%. However, there had been a push in the undivided state to include all Muslims in the OBC category.

FIRST ATTEMPT: In June 2004, just a month after the Congress came to power in the state, a Government Order (GO) was issued by the Commissionerate of Minorities Welfare (whose ex-officio head was the state's principal secretary) to look into "socio-economic and educational conditions of Muslim community in the state" to include them as OBCs.

In July 2004, the Commissionerate wrote to the government recommending 32 reservations to "Muslim Minorities in employment, educational and other fields on par with the Backward Classes in the State". The recommendations was implemented a week later.

On September 23, 2004, a five-judge Bench of the Andhra Pradesh High Court struck down the quota as unsustainable. The court's ruling was primarily on two grounds.

First, that the quota was brought in without being referred to the Backward Classes Commission which was mandated by the state's 1993 Backward Classes Act. And second, that the quota did not exclude the "creamy layer", and allowed reservation to Muslims as a whole.

The HC also issued a direction to the state government "to reconstitute the Commission for Backward Classes, and re-examine the question of inclusion and exclusion of Muslim community in the state" in terms of G.O. Ms. No.33, to the Commission for Backward Classes".

However, one of the key question before the court was whether "the Muslims as a group are entitled to affirmative action/social reservations within the constitutional dispensation?"

On this aspect, the HC ruled affirmatively. "Reservations for Muslims or sections/groups among them, is no manner militate against mandatory, which is a part of the basic structure of the Constitution. The concept of secularism is based on a design essentially to benefit all including religious groups and it seeks to advance "good" for all including religious groups," the court said.

SECOND ATTEMPT: In June 2005, the state government brought another Ordinance, which again gave a 5% quota to Muslims.

It is this, when the Ordinance was under challenge before the HC, the government replaced it with legislation. This time, the Backward Classes Commission had recommended that "the entire Muslim Community is socially, educationally and economically backward and therefore steps shall be taken for providing reservations to the members of the Muslim Community for improving their social, educational and economic conditions."

The law stated that while the total reservation of the state (SC/ST and OBC) at that time added up to 46%, an additional 5% to Muslims was just liable even though it crossed the Indra Sahwney threshold of 50%.

"The Backward Classes population in the State comes to more than 77% of total population and therefore, a further reservation of 5% in favour of Muslim Community in addition to existing 46% of social reservations is considered to be just and reasonable," the law said.

However, the HC once again struck down the quota on the ground that the committee did not rely on objective criteria to conclude that Muslims as a group were backward in AP.

"The failure of the Commission to recognise the established heterogeneity of the Muslims, in failure to proceed on data on caste, statistical, social, educational and economic analyses of the class so collected, restricted to Muslims excluding those classes/groups of Muslims already identified and recognised by the Government as backward classes, constitutes a fatal flaw in the conceptual foundations, adopted methodology and social survey of the Commission's exercise and introduces an irredeemable arbitrariness in conclusions and recommendations," the court said.

The ruling of the HC was challenged before the SC. In 2010, in a interim order, the SC directed that status quo be maintained till the court had heard the issue.

Before the High Court's ruling of 2005, some college admissions were made allowing the 5% quota. The top court's interim order ensured no prejudice to these admissions.

The final hearing in the SC case was scheduled in 2022. However, since one of the issues involved was on the Indra Sawhney 50% limit on quotas, the SC had said that it would hear the case after the Economically Weaker Section (EWS) quota case was decided.

The EWS quota, which is also in excess of the 50% ceiling, was cleared by the SC in November 2022. However, the 4% quota issue is yet to be heard.

- **Why in News:** Prime Minister at an election rally said that Congress often tried to give reservation to Muslims by reducing quota for SCs, STs and OBCs by citing example of providing Muslim quota in Andhra Pradesh.
- **Reservation for Muslims**
  - OBC reservation (based on social and educational backwardness) both at central and state levels includes several Muslim communities. It works differently in different states. For example, Karnataka Muslims had a 4% sub-quota within the 32% OBC quota.
- **Andhra Pradesh Quota**
  - Muslim groups like Noorbash, Mehtar etc. are included in state OBC lists, with7-10% quota. But there had been a push in **undivided state** to include **all Muslims** (9.5% as per 2011 census) in OBCs. First attempt was made in **2004,** when **5% reservation was given to Muslim Minorities in employment, educational and other fields on par with state OBCs.** However, state High Court(HC) struck down the quota as it was- brought **without consulting** Backward Classes Commission (BCC), did not exclude" creamy layer" and gave reservation to all Muslims.
  - Second attempt was made in 2005 when the state government brought a legislation **giving 5% quota to Muslims**. The law said that as State's OBC population is more than 77% of total population, a further reservation of 5% to Muslim Community in addition to existing 46% of social reservation is just and reasonable (though it crossed Indra Sawhney threshold of 50%). This time, BCC had recommended reservation for **entire Muslim Community**. But HC struck it down again stating that BCC did not rely on objective criteria to conclude that Muslims as a group were backward in AP. This ruling was challenged in SC. The SC in 2010 directed to maintain status Quo till court had heard the issue. The case is still pending.

25th April, 2024

1. <u>Why has RBI Barred Kotak Mahindra Bank from Onboarding New Customers?</u>
<u>GS 3 (Environment)</u>

RBI tells Kotak Bank not to onboard new customers online

The Hindu Bureau
MUMBAI

The Reserve Bank of India (RBI) on Wednesday directed Kotak Mahindra Bank Ltd. (Kotak Bank) to cease and desist, with immediate effect, from onboarding new customers through its online and mobile banking channels and issuing fresh credit cards.

Kotak Bank is however allowed to continue to provide services to its existing customers, including its credit card customers.

"These actions are necessitated based on significant concerns arising out of Reserve Bank's IT examination of the bank for 2022 and 2023 and the continued failure on the part of the bank to address these concerns in a timely manner," the central bank said in its directive.

"Serious deficiencies and non-compliances were observed in the areas of IT inventory management... data security, business continuity and disaster recovery rigour and drill, etc.," it said.

Kotak Bank cannot issue fresh credit cards. REUTERS

CONTINUED ON » PAGE 10

- **Why in News:** RBI recently barred Kotak Mahindra Bank **from onboarding new customers** through online and mobile banking channels, and from issuing fresh credit cards, with immediate effect.
- **What Powers did RBI use?**
  - Section 35A of the Banking Regulation Act, 1949 empowers the RBI "to prevent the affairs of any banking company being conducted in a manner detrimental to depositors interests or prejudicial to banks interests".
- **Reasons for the Ban**
  - As per RBI's Information Technology (IT) examination of the bank for the years 2022 and 2023-
    - **i.** Serious deficiencies and non-compliances were observed in the areas of IT inventory management, patch and change management, user access management, vendor risk management, data security and data leak prevention strategy, business continuity, disaster recovery rigour and drill.
    - **ii.** Frequent and subsequent outages in banks core Banking System (CBS) and online and digital banking were observed due to absence of a robust IT infrastructure and risk management framework.
    - **iii.** There was increasing load on Bank's IT systems due to rapid growth in the volume of bank's digital transactions, including credit card transactions.
    - **iv.** The bank failed to comply with Corrective Action Plans issued by RBI.
- **What next for Existing Customers?**
  - The RBI clarified that the bank will continue to provide services to its existing customers, including its credit card customers.
- **Bank's Response**
  - The Bank said that it has taken measures for adoption of new technologies to strengthen its IT systems and will continue to work with RBI to swiftly resolve balance issues at the earliest. It assured of providing the existing customers uninterrupted services, including credit card, mobile and net banking and of providing all services except credit card to new customers.

2. <u>The Indian seafarer deserves better in choppy high seas</u>
<u>Recent events of importance</u>

The Indian seafarer deserves better in choppy high seas

K.M. Seethi
an Indian Council of Social Science Research (ICSSR) Senior Fellow, is Director, Inter University Centre for Social Science Research and Extension (IUCSSRE), Mahatma Gandhi University (MGU), Kerala. He was Senior Professor of International Relations and Dean of Social Sciences at the MGU

Amid rising safety concerns among Indian seafarers following the recent attacks on commercial ships in sensitive geographical areas such as the Red Sea and the Strait of Hormuz, India submitted three papers to the 111th Session of the International Maritime Organization's (IMO) Legal Committee (LEG), which is from April 22 to 26, 2024. These submissions address crucial issues such as seafarers' security, contract terms, and broader maritime security challenges. India has stressed the need for a comprehensive approach to maritime security and advocated improved contractual conditions for seafarers. While acknowledging the IMO's efforts to combat maritime fraud, India has called for broader international cooperation to tackle various maritime threats, including piracy, armed robbery, extremist attacks, regional conflicts, and emerging risks such as drone attacks and the use of maritime weapons.

Sea piracy is back

Recent pirate attacks off the coast of Somalia, including hijackings, suggest a resurgence of piracy. In December 2023 and January 2024, Somali pirates targeted vessels such as the *MV Ruen* and *MV Lila Norfolk*. India has called for vigilance, proactive measures, and international cooperation to combat piracy and protect seafarers, in line with the United Nations Convention on the Law of the Sea.

India has also highlighted the impact of unlawful recruitment practices on seafarers' well-being and international trade. Since 2020, over 200 cases of seafarer exploitation have been reported to the Indian Maritime Administration. India has urged international coordination to address these issues and ensure seafarers' rights under the Maritime Labour Convention, 2006.

The maritime industry, vital for global trade, depends heavily on seafarers who often face challenges and risks.

India, with 9.35% of global seafarers and ranking third globally, confronts these issues, evident from recent incidents such as the seizure of *MSC Aries* and the detention of *MT Heroic Idun* at Nigeria (this last case went on for several months).

These events highlight the vulnerabilities of Indian seafarers, catalogued by a survey, showing how a majority lacked legal representation, felt unfairly treated, and were unaware of their rights. India has submitted papers to the IMO's Legal Committee, which emphasise seafarers' security and contract terms. Yet, enhanced international cooperation is needed to safeguard seafarers and ensure uninterrupted navigation, especially amid rising incidents involving Indian seafarers and geopolitical tensions.

Three years ago, the Maritime Union of India highlighted a 40% increase in kidnappings in the Gulf of Guinea, with 134 cases of assault, injury, and threats reported. Incidents such as the kidnapping of 20 Indian nationals from the *MT Duke* (off the western coast of Africa) and the ship owners paying hefty ransoms highlight the dangers faced by seafarers.

With Indians playing a significant role in keeping the global shipping industry running, their welfare and safety acquires significance

An Indian initiative on rights

In response, the Indian government and the National Human Rights Commission (NHRC) launched the 'human rights at sea' initiative. Reports reveal cases of seafarers being held in foreign jails, stranded in foreign waters, and subjected to illegal detentions. 'Human Rights at Sea' has highlighted abuses against Indian seafarers, including 200 held in foreign jails and 65 stranded in Indonesia for 151 days. The NHRC has highlighted the challenges of holding ship owners accountable for violations against Indian seafarers operating under foreign registrations to evade taxes and has stressed the need for proactive cooperation among stakeholders and mechanisms to protect human rights in the maritime industry.

Maritime piracy is a growing concern for Indian seafarers. With around 2,50,000 Indian seafarers serving on specialised cargo vessels worldwide, recent data from the International Maritime Bureau show a more than 10% increase in serious piracy incidents over the last 10 months. Armed pirates have boarded nearly 90% of targeted cargo ships, endangering seafarers.

Addressing piracy requires a comprehensive land-based solution. While private guards on merchant navy ships can deter piracy, the volatile nature of piracy-prone oceans poses challenges, as highlighted by Bjorn Hojgaard, CEO of Anglo-Eastern Univan Group, a major employer of Indian seafarers.

Further, reports suggest that Iranian shipping companies, in collaboration with international recruiters, exploit Indian seafarers by luring them with false promises of high salaries and opportunities in the Middle East. These seafarers often face overwork, are provided insufficient food, and are forced into transporting illegal cargo, despite paying hefty fees to secure overseas jobs.

Seafarers need support

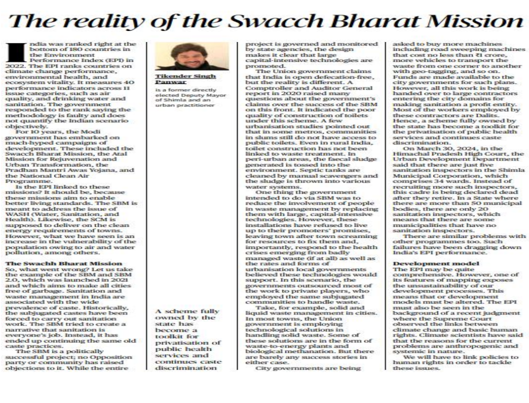
Despite these risks, many Indian seafarers remain committed to their careers at sea, which makes it imperative to have improved rights and protection. Currently representing 9.35% of the global seafaring population, India aims to increase its share to 20% in the next 10 to 20 years, with ship management companies playing a crucial role.

During the COVID-19 pandemic, Indian seafarers demonstrated their resilience and professionalism, enhancing India's standing in the global maritime market. The Ukraine-Russia conflict has also created opportunities for new players in the Indian maritime sector.

Recent attacks on commercial ships have heightened safety concerns among Indian seafarers, with some considering quitting their jobs due to security fears. This underlines the urgent need for government support and enhanced protection measures.

- **Why in News:** India submitted three papers to the 111th Session of the **International Maritime Organization's (IMO) Legal Committee (LEG)** to address **seafarers' security concerns** and broader **maritime security** challenges.
- **Challenges and Concerns for Indian Seafarers:**
  - **Resurgence of piracy:** Recent pirate attacks off the coast of Somalia and the **Gulf of Guinea** indicate a resurgence of piracy, posing significant risks to Indian seafarers and commercial vessels.
  - **Unlawful recruitment practices and exploitation** of seafarers' rights have been reported, leading to concerns about their well-being and safety.
  - **Vulnerabilities of Indian seafarers** have been highlighted by incidents such as the seizure of vessels and kidnappings, underlining the need for enhanced security measures and international cooperation.
- **Initiatives and Responses:**
  - **Improved conditions**: India has submitted papers to the **IMO's Legal Committee** to emphasize seafarers' security and advocate for improved contractual conditions.
  - **Human rights at sea:** The Indian government and the National Human Rights Commission (NHRC) launched the 'human rights at sea' initiative to address abuses against Indian seafarers, including illegal detentions and exploitation.
  - **Future Prospects and Government Action:** India aims to increase its share of the global seafaring population and enhance its standing in the maritime sector. Government support and measures are urgently needed in the face of evolving maritime security threats

3. <u>The reality of the Swachh Bharat Mission</u>
<u>GS 2 (Governance)</u>


The reality of the Swacch Bharat Mission

Tikender Singh Panwar
is a former directly elected Deputy Mayor of Shimla and an urban practitioner

India was ranked right at the bottom of 180 countries in the Environment Performance Index (EPI) in 2022. The EPI ranks countries on climate change performance, environmental health, and ecosystem vitality. It measures 40 performance indicators across 11 issue categories, such as air quality, and drinking water and sanitation. The government responded to the rank saying the methodology is faulty and does not quantify the Indian scenario objectively.

For 10 years, the Modi government has embarked on much-hyped campaigns of development. These included the Swacch Bharat Mission, the Atal Mission for Rejuvenation and Urban Transformation, the Pradhan Mantri Awas Yojana, and the National Clean Air Programme.

Is the EPI linked to these missions? It should be, because these missions aim to enable better living standards. The SBM is meant to address the issue of WASH (Water, Sanitation, and Health). Likewise, the SCM is supposed to deliver on the clean energy requirements of towns. However, what we have seen is an increase in the vulnerability of the population owing to air and water pollution, among others.

The Swachh Bharat Mission

So, what went wrong? Let us take the example of the SBM and SBM 2.0, which was launched in 2021 and which aims to make all cities free of garbage. Sanitation and waste management in India are associated with the wide prevalence of caste. Historically, the subjugated castes have been forced to carry out sanitation work. The SBM tried to create a narrative that sanitation is everyone's job. Instead, it has ended up continuing the same old caste practices.

The SBM is a politically successful project; no Opposition party or community has raised objections to it. While the entire project is governed and monitored by state agencies, the design makes it clear that large capital-intensive technologies are promoted.

The Union government claims that India is open defecation-free, but the reality is different. A Comptroller and Auditor General report in 2020 raised many questions about the government's claims over the success of the SBM on this front. It indicated the poor quality of construction of toilets under this scheme. A few urbanisation studies pointed out that in some metros, communities in slums still do not have access to public toilets. Even in rural India, toilet construction has not been linked to waste treatment. In peri-urban areas, the faecal sludge generated is tossed into the environment. Septic tanks are cleaned by manual scavengers and the sludge is thrown into various water systems.

One thing the government intended to do via SBM was to reduce the involvement of people in waste management by replacing them with large, capital-intensive technologies. However, these installations have refused to live up to their promoters' promises, leaving town after town screaming for resources to fix them and, importantly, respond to the health crises emerging from badly managed waste (if at all) as well as the rates and forms of urbanisation local governments believed these technologies would support. In this scenario, the governments outsourced most of the work to private players, who employed the same subjugated communities to handle waste.

Take, for example, solid and liquid waste management in cities. In most towns, the Union government is employing technological solutions in handling solid waste. Some of these solutions are in the form of waste-to-energy plants and biological methanation. But there are barely any success stories in either case.

City governments are being asked to buy more machines including road sweeping machines that cost no less than ₹1 crore, more vehicles to transport the waste from one corner to another with geo-tagging, and so on. Funds are made available to the city governments for such plans. However, all this work is being handed over to large contractors entering the city domains for making sanitation a profit entity. Most of the workers employed by these contractors are Dalits. Hence, a scheme fully owned by the state has become a toolkit for the privatisation of public health services and continues caste discrimination.

A scheme fully owned by the state has become a toolkit for privatisation of public health services and continues caste discrimination

On March 30, 2024, in the Himachal Pradesh High Court, the Urban Development Department said that there are just five sanitation inspectors in the Shimla Municipal Corporation, which comprises 34 wards. Instead of recruiting more such inspectors, this cadre is being declared dead after they retire. In a State where there are more than 50 municipal bodies, there are only 20 sanitation inspectors, which means that there are some municipalities that have no sanitation inspectors.

There are similar problems with other programmes too. Such failures have been dragging down India's EPI performance.

Development model

The EPI may be quite comprehensive. However, one of its features of mapping exposes the unsustainability of our development processes. This means that or development models must be altered. The EPI must also be seen in the background of a recent judgment where the Supreme Court observed the links between climate change and basic human rights. Climate scientists have said that the reasons for the current problems are anthropogenic and systemic in nature.

We will have to link policies to human rights in order to tackle these issues.

- **Why in News:** India's ranking at the bottom of 180 countries in the **Environment Performance Index (EPI)** in 2022 has sparked debates on the effectiveness of government initiatives like the **Swachh Bharat Mission (SBM)** and their impact on environmental sustainability.
- **Challenges in Environmental Initiatives:**
  - **Questionable implementation:** Despite government initiatives like the Swachh Bharat Mission (SBM), India's performance in the **Environment Performance Index (EPI)** remains poor, raising questions about the efficacy of environmental policies.
  - **Caste issues:** Issues such as sanitation and waste management, deeply entrenched in caste dynamics, pose significant challenges to achieving environmental sustainability goals.
  - **Poor maintenance**: Reports highlighting the poor quality of construction and maintenance of

sanitation facilities under the SBM indicate systemic failures and shortcomings in addressing environmental concerns.

- **Privatization and Caste Discrimination:**
  - **Privatisation and discrimination:** The SBM's reliance on large, capital-intensive technologies has led to the privatization of waste management services, perpetuating caste-based discrimination in sanitation work.
  - **Social inequalities**: The outsourcing of waste management to private contractors, who often employ marginalized communities like Dalits, exacerbates social inequalities and undermines the objectives of inclusive development.
  - **Systemic inadequacies**: Shortages of sanitation inspectors in municipal corporations further reflect systemic inadequacies and hinder effective implementation of environmental policies at the grassroots level.
- **Need for Policy Overhaul:**
  - **Fundamental re-evaluation:** The failures of environmental initiatives like the SBM underscore the need for a fundamental re-evaluation of India's development model.
  - **Prioritisation of human rights:** Addressing environmental challenges requires policies that prioritize human rights and address systemic issues contributing to climate change.
  - **Alignment:** The **link between climate change and basic human rights,** as recognized by the Supreme Court, emphasizes the imperative of aligning policies with principles of social justice.

4. National Clean Air Programme & Challenges
GS 2 (Governance)

On the National Clean Air Programme

Why has the implementation of Clean Air Action Plans been inconsistent? Why are cities not using the allocated funds set aside by the Ministry of Environment, Forest, and Climate Change? What are some of the tools which can improve our understanding of the origins of pollution?

EXPLAINER

Aakshaa Banerjee

The story so far:

When the Indian government launched the National Clean Air Programme (NCAP) in 2019, it set out the concentration of atmospheric Particulate Matter (PM) by 20-30% by 2024, based on 2017 levels. This was later revised to 40% by 2026.

What is the NCAP?

Under NCAP, cities continuously violating annual PM levels in India need to prepare and implement annual Clean Air Action Plans (CAAPs). To facilitate this, the Ministry of Environment, Forest and Climate Change has allocated ₹15,522.73 crore. Most cities proactively submitted their CAAPs, but their implementation has been inconsistent. On average, only 60% of the allocated funds have been used thus far, according to the Ministry, with 27% of cities spending less than 30% of their designated budgets. For example, Delhi and Bengaluru have spent 5% and 1% of their NCAP funds, respectively. Implementation delays hinder NCAP's success, particularly delays in approvals from the competent authorities. For example, the technical specification of tendering processes or for procuring new fleets of machinery of sweepers and electric buses.

There is also a lack of standard operating procedures for the implementation process. Furthermore, there is no mandated to implement control measures and the absence of well-defined timelines create further delays. These issues include bureaucratic red-tape and lingering doubts regarding the effectiveness of proposed mitigation measures. After the recent findings over the inefficacy of anti-smog guns, the government's hesitation is justified. But overcoming this also requires a systemic approach based on Emissions Inventory (EI), Air Quality (AQ) modelling, and Source Apportionment (SA).

How can scientific tools help?

EI and SA studies are critical to identify the sources of pollution. While the former can provide insights into local pollution sources and their contributions, allowing experts to forecast future emissions based on demographic shifts and technological changes, the latter can help identify other factors. It can also help shape targeted pollution control strategies. They have been instrumental in the past in assessing the impact of transboundary pollution sources – such as when determining the effect of stubble-burning outside Delhi on the city's air quality. They can also help in quantifying the contributions from various pollution sources, including those located afar.

However, they aren't suited for predictive analysis and require substantial resources, including specialised equipment and expertise for chemical analysis. As studies also can't distinguish between the origins of pollution, like, say, between a power plant that is 10 km away and 10 km away, because diesel emissions have similar chemical signatures.

These gaps can be bridged through AQ modelling, which informs our understanding of PM dispersion, including from distant sources.

How are these being used?

Ideally, the cities should look into EI and SA data to pinpoint air pollutants and prepare mitigation measures targeting each polluting activity. According to the Ministry, of the 131 cities under the Non-Attainment cities, only 37% of cities have completed EI and SA studies, meaning the remaining 63% don't have a clear idea about what is polluting their air. Thus, the effectiveness of CAAPs is questioned if the cities don't know the origins of pollution to tackle the bulk of their proposed mitigation measures. Based on the potential and infrastructure available, cities must also set proper yearly targets and fund them.

Moreover, the NCAP's reliance on concentration data – a measure of population exposure to harmful pollutants – overlooks the contribution of Pollution from high-emitting industries and other sources outside city limits, paving the way for blanket bans and complicates urban air quality management. Many existing control measures focus only on primary PM emissions, neglecting their secondary counterparts. Thus, there is a need for comprehensive strategies addressing both primary and secondary pollutants in thus urgent need for a fundamental re-evaluation of the NCAP goals, further, the evaluation of the forecast AQ, no city barring Delhi, Pune, Mumbai, and Ahmedabad has a decision support system.

What does NCAP need to succeed?

Beyond the need for data and models, swift implementation on the ground is essential. For this, implementation agencies must adopt a bottom-up, not top-down approach, by utilising shared, standardised technical evaluations. As mentioned earlier, the ability and performance of cities based on the annual average PM concentration reductions, prior budgeting and time management play crucial roles. Technical feasibility, budgeting, and time estimates need to be part of the initial plans.

The journey towards cleaner air is long and challenging. But the first step forward is necessary. NCAP's success hinges on a multifaceted approach that combines rigorous scientific studies, strategic funds, and swift and effective implementation of mitigation measures.

Aakshaa works in Air Quality at Center for Study of Science, Technology and Policy.

THE GIST

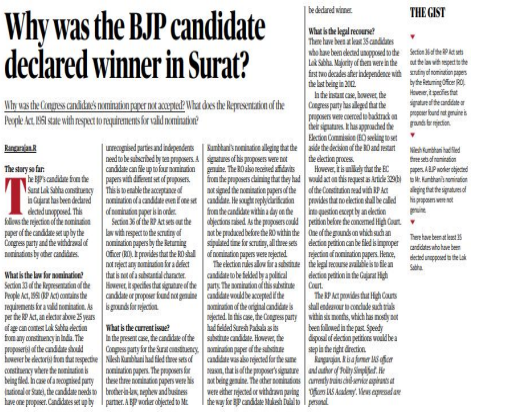
- Most cities proactively submitted their CAAPs, yet their implementation has been inconsistent. On average, only 60% of the allocated funds have been used thus far, according to the Ministry.
- Implementation delays hinder NCAP's success, particularly delays in approvals from the competent authorities.
- Beyond the need for data and models, swift implementation on the ground is essential. For this, implementation agencies must adopt a bottom-up, not top-down approach, by utilising shared, standardised technical evaluations.

- **Why in News:** The Indian government initiated the **National Clean Air Programme (NCAP)** in 2019 with the goal of reducing **atmospheric Particulate Matter (PM)** concentration by 20-30% by 2024, based on 2017 levels. However, this target was subsequently revised to a more ambitious goal of 40% reduction by 2026.
- **Implementation Issues of NCAP**
  - Under the programme, cities continuously violating annual PM levels in India need to prepare and implement annual **Clean Air Action Plans (CAAPs).**
  - **Inconsistency:** Tough most cities proactively submitted their CAAPs, their implementation has been inconsistent.
  - **Implementation issue**: On average, only 60% of the allocated funds have been used thus far, with 27% of cities spending less than 30% of their designated budgets.
  - **Delayed approvals:** Implementation delays hinder NCAP's success, particularly delays in approvals from the competent authorities.
  - **Lack of SOP:** Furthermore, there is lack of standard operating procedures for the implementation process.
  - **Other issues:**
    i. Absence of well-defined timelines create further delays
    ii. Bureaucratic red-tape and lingering doubts regarding the effectiveness of proposed mitigation measures
- **Required Measures**
  - There is need of **swift implementation on the ground** and focus on reducing bureaucratic red tape by utilising shared, standardised technical evaluations.
  - **Prior budgeting and time management** play crucial roles as NCAP funding is linked with the performance of cities (based on the annual average PM concentration reduction).
  - **Technical feasibility, budgeting, and time estimates** need to be part of the initial plans.
- **About NCAP**
  - **Launched in:** 2019
  - **Objective**: to improve air quality in 131 cities (non-attainment cities and Million Plus Cities) in 24 States/UTs by engaging all stakeholders.
  - **Target**: The programme envisages to achieve reductions up to 40% or achievement of **National Ambient Air Quality Standards** for Particulate Matter10 (PM 10) concentrations by 2025-26.

5. Why was the BJP Candidate Declared Winner in Surat?
Recent events of importance

- **Background:**
  - The BJP's candidate from the Surat Lok Sabha constituency in Gujarat has been declared elected unopposed.
  - This happened due to the rejection of the nomination paper of the candidate set up by the Congress party and the withdrawal of nominations by other candidates.
- **What is the Law for Nomination?**
  - Section 33 of the Representation of the People Act, 1951, talks about the rules for contesting in the Lok Sabha elections.

- If a person is 25 or older, he/she can run from any part of the country.
- However, the people who support the candidacy (called 'proposers') must be from the area where you want to run.
- In case of a recognised party (national or state),the candidate only needs one person to propose his/her nomination.
- However, if the candidate is running independently or from a smaller party, he/she will need ten people to support his/her candidature.
- Also, **one can submit up to four sets of nomination papers with different groups of proposers** to make sure that the nomination gets accepted even if there's an issue with one set.
- Section 36 of the same act talks about how the Returning Officer (the person in charge of elections in a particular area) checks these nomination papers.
- They can't reject a nomination unless there's a significant problem with it.
- However, if they find that the signatures on the papers aren't genuine, they can reject the nomination.


Why was the BJP candidate declared winner in Surat?

Why was the Congress candidate's nomination paper not accepted? What does the Representation of the People Act, 1951 state with respect to requirements for valid nomination?

Rangarajan.R

The story so far:

The BJP's candidate from the Surat Lok Sabha constituency in Gujarat has been declared elected unopposed. This follows the rejection of the nomination paper of the candidate set up by the Congress party and the withdrawal of nominations by other candidates.

What is the law for nomination?

Section 33 of the Representation of the People Act, 1951 (RP Act) contains the requirements for a valid nomination. As per the RP Act, an elector above 25 years of age can contest Lok Sabha election from any constituency in India. The proposer(s) of the candidate should however be elector(s) from that respective constituency where the nomination is being filed. In case of a recognised party (national or State), the candidate needs to have one proposer. Candidates set up by unrecognised parties and independents need to be subscribed by ten proposers. A candidate can file up to four nomination papers with different set of proposers. This is to enable the acceptance of nomination of a candidate even if one set of nomination paper is in order.

Section 36 of the RP Act sets out the law with respect to the scrutiny of nomination papers by the Returning Officer (RO). It provides that the RO shall not reject any nomination for a defect that is not of a substantial character. However, it specifies that signature of the candidate or proposer found not genuine is grounds for rejection.

What is the current issue?

In the present case, the candidate of the Congress party for the Surat constituency, Nilesh Kumbhani had filed three sets of nomination papers. The proposers for these three nomination papers were his brother-in-law, nephew and business partner. A BJP worker objected to Mr. Kumbhani's nomination alleging that the signatures of the proposers were not genuine. The RO also received affidavits from the proposers claiming that they had not signed the nomination papers of the candidate. He sought reply/clarification from the candidate within a day on the objections raised. As the proposers could not be produced before the RO within the stipulated time for scrutiny, all three sets of nomination papers were rejected.

The election rules allow for a substitute candidate to be fielded by a political party. The nomination of this substitute candidate would be accepted if the nomination of the original candidate is rejected. In this case, the Congress party had fielded Suresh Padsala as its substitute candidate. However, the nomination paper of the substitute candidate was also rejected for the same reason, that is of the proposer's signature not being genuine. The other nominations were either rejected or withdrawn paving the way for BJP candidate Mukesh Dalal to be declared winner.

What is the legal recourse?

There have been at least 35 candidates who have been elected unopposed to the Lok Sabha. Majority of them were in the first two decades after independence with the last being in 2012.

In the instant case, however, the Congress party has alleged that the proposers were coerced to backtrack on their signatures. It has approached the Election Commission (EC) seeking to set aside the decision of the RO and restart the election process.

However, it is unlikely that the EC would act on this request as Article 329(b) of the Constitution read with RP Act provides that no election shall be called into question except by an election petition before the concerned High Court. One of the grounds on which such an election petition can be filed is improper rejection of nomination papers. Hence, the legal recourse available is to file an election petition in the Gujarat High Court.

The RP Act provides that High Courts shall endeavour to conclude such trials within six months, which has mostly not been followed in the past. Speedy disposal of election petitions would be a step in the right direction.

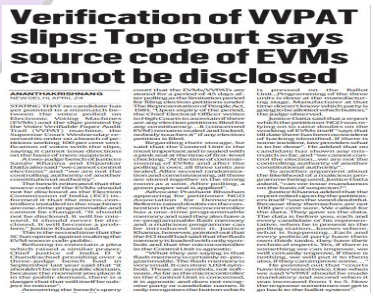
Rangarajan. R is a former IAS officer and author of 'Polity Simplified'. He currently trains civil-service aspirants at Vijfzero IAS Academy. Views expressed are personal.

THE GIST

- Section 36 of the RP Act sets out the law with respect to the scrutiny of nomination papers by the Returning Officer (RO). However, it specifies that signature of the candidate or proposer found not genuine is grounds for rejection.
- Nilesh Kumbhani had filed three sets of nomination papers. A BJP worker objected to Mr. Kumbhani's nomination alleging that the signatures of its proposers were not genuine.
- There have been at least 35 candidates who have been elected unopposed to the Lok Sabha.

- **What Happened in the Case of Surat Lok Sabha Constituency?**
  - In the present case, the candidate of the Congress party for the Surat constituency had filed three sets of nomination papers.
  - The proposers for these three nomination papers were his brother-in-law, nephew and business partner.
  - A BJP worker objected to his nomination alleging that the signatures of his proposers were not genuine.
  - The RO also received affidavits from the proposers claiming that they had not signed the nomination papers of the candidate.
  - He sought reply/clarification from the candidate within a day on the objections raised.
  - As the proposers could not be produced before the RO within the stipulated time for scrutiny, all three sets of nomination papers were rejected.
  - The election rules allow for a substitute candidate to be fielded by a political party.
  - The nomination of this substitute candidate would be accepted if the nomination of the original candidate is rejected.
  - In this case, the Congress party had fielded Suresh Padsala as its substitute candidate.
  - However, the nomination paper of the substitute candidate was also rejected for the same reason, that is of the proposer's signature not being genuine.
  - The other nominations were either rejected or withdrawn paving the way for BJP candidate Mukesh Dalal to be declared winner.
- **What is the Legal Recourse in this Case?**
  - **Past instances**
    - There have been at least 35 candidates who have been elected unopposed to the Lok Sabha.
    - Majority of them were in the first two decades after independence with the last being in 2012.
  - **Present case**
    - In the Surat case, however, the Congress party has alleged that the proposers were coerced to backtrack on their signatures.
    - It has approached the Election Commission (EC) seeking to set aside the decision of the RO and restart the election process.
  - **Legal recourse**
    - However, it is unlikely that the EC would act on this request as Article 329(b) of the Constitution read with RP Act provides that **no election shall be called into question except by an election petition before the concerned High Court**.
    - One of the grounds on which such an election petition can be filed is improper rejection of nomination papers.
    - Hence, the legal recourse available is to file an election petition in the Gujarat High Court.
    - The RP Act provides that High Courts shall endeavour to conclude such trials within six months, which has mostly not been followed in the past.
    - Speedy disposal of election petitions would be a step in the right direction

6. <u>Supreme Court's Verdict on VVPAT Count</u>
<u>GS 2 (Elections)</u>


Verification of VVPAT slips: Top court says source code of EVMs cannot be disclosed

ANANTHAKRISHNAN G

- **Why in News:** The recent Supreme Court ruling rejecting pleas for a full count of **Voter-Verifiable Paper Audit Trail (VVPAT)** slips during **electronic voting machine (EVM) elections** has sparked debates on the integrity and transparency of India's electoral process.
- **Supreme Court's views and directions**
  - The Supreme Court issued directions mandating the sealing of the **Symbol Loading Unit (SLU)** after symbol loading and verification of burnt memory semi-controller in 5% of EVMs per constituency.
  - Candidates can request verification of EVMs, with expenses to be borne by the requesting candidate, ensuring transparency and accountability in the electoral process.
  - **Citizens' Confidence:** Writ petitions highlighted the significance of a complete VVPAT count in enhancing citizens' confidence in the electoral process. Despite calls for transparency, the Court's ruling prioritizes maintaining the integrity of the electoral system.
- **Role of VVPAT Machines:**
  - VVPAT machines provide transparency by displaying voters' selections through paper slips, contributing to electoral transparency.
  - The Supreme Court's decision underscores the importance of adhering to existing protocols and guidelines established by the **Election Commission of India (ECI).**
- **Concerns Over EVMs:**
  - The Court's caution against releasing the source code for EVMs reflects concerns over potential misuse and tampering.
  - This stance raises questions about the robustness of India's electoral infrastructure, despite the ECI's assurances of tamper-proof EVMs.
  - While the Supreme Court's verdict reaffirms the integrity of India's electoral process, ongoing vigilance and scrutiny are essential to address concerns related to transparency, accountability, and electoral integrity. Ensuring trust and confidence in the electoral system remains paramount for upholding the principles of democracy in India.

7. Can the Government Redistribute Privately Owned Property
GS 2 (Constitution)

- **Why in News:**
  - As wealth distribution dominates news headlines in India, a nine-judge bench of the Supreme Court commenced the process for interpretation of **Article 39(b)** of the Indian Constitution.
  - This to determine whether this directive principle of state policy (**DPSP**) provision allows the govt to treat and redistribute privately owned properties under the garb of "**material resources of the community**" for greater common good.

Case before SC: Can Govt redistribute privately owned property?

AJOY SINHA KARPURAM
NEW DELHI, APRIL 24

AS WEALTH DISTRIBUTION dominates news headlines in India, the Supreme Court (SC) on Wednesday began hearing an unrelated case about whether the government can acquire and redistribute privately owned properties if they are deemed as "material resources of the community" – as mentioned in Article 39(b) of the Constitution.

Important minority opinion

Falling under Part IV of the Constitution titled "Directive Principles of State Policy" (DPSP), Article 39(b) places an obligation on the state to create policy towards securing "the ownership and control of the material resources of the community are so distributed as best to subserve the common good". DPSP are meant to be guiding principles for the enactment of laws, but are not directly enforceable in any court of law.

Since 1977, the apex court has weighed in on the interpretation of Article 39(b) on multiple occasions – most notably, in State of Karnataka v Shri Ranganatha Reddy (1977). This case saw a seven-judge Bench, by a 4:3 majority, holding that privately owned resources did not fall within the ambit of "material resources of the community". However, it was Justice Krishna Iyer's minority opinion which would become enshrined in years to come.

Justice Iyer had held that privately owned resources must also be considered material resources of the community. "Every thing of value or use in the material world is a material resource and the individual being a member of the community has resources as part of those of the community. To exclude ownership of private resources from the ambit of Article 39(b) is to (re)license (make hidden) its very purpose of redistribution for social weal," he said.

SC affirms Justice Iyer's opinion

This interpretation of Article 39(b) was later affirmed by a five-judge Bench in Sanjeev Coke Manufacturing Company v Bharat Coking Coal (1983), where the court upheld certain legislation that nationalised coal mines and their respective coke oven plants relying on what Justice Iyer had ruled. It held that the provision "takes within its ambit the transformation of wealth from private ownership into public ownership and is not confined to that which is already public-owned".

EXPLAINED LAW

This judgment did not mention that Justice Iyer's opinion was in the minority. Nor did it mention that the majority specifically distanced themselves from it ("We must not be understood to agree with all that he [Justice Iyer] has said in his judgment in this regard," Justice N L Untwalia's majority opinion had held at the time).

The concurring opinion of Justice Hariprasad in the nine-judge Bench case of Mafatlal Industries Ltd v Union of India (1996) also relied on the interpretation of Article 39(b) offered by Justice Iyer and the Bench in Sanjeev Coke Manufacturing. He held "the words 'material resources' occurring in Article 39 (b) will take in natural or physical resources and also movable or immovable property and it would include all private and public sources of meeting material needs, and not merely confined to public possessions."

Vested properties dispute

The case currently before the SC arose out of a challenge to the 1986 amendment to the Maharashtra Housing and Area Development Act, 1976 (MHADA) by owners of 'vested' properties in Mumbai.

MHADA was enacted in 1976 to address a major problem in the city – old, dilapidated buildings housing 'poor' tenants despite becoming increasingly unsafe. MHADA imposed a cess on the buildings' occupants, which would be paid to the Mumbai Building Repair and Reconstruction Board (MBRRB) to oversee repair and restoration projects.

In 1986, invoking Article 39(b), Section 1A was inserted in MHADA to execute plans for acquiring lands and buildings, in order to transfer them to "needy persons" and the "occupiers of such [unfit or building]". The amendment also inserted Chapter VIII-A to the legislation, which contains provisions allowing the state government to acquire 'vested' buildings (and the land they are built on) if 70% of the occupants make such a request.

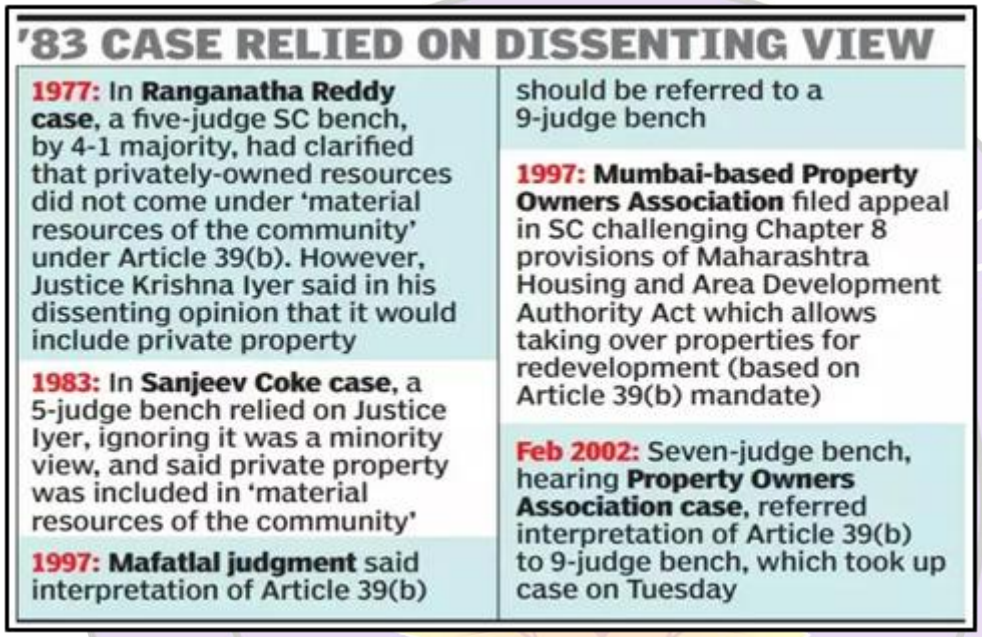
Over three decades with SC

The Property Owners' Association in Mumbai challenged Chapter VIII-A of the MHADA at the Bombay High Court, claiming that the provisions violate the property owners' Right to Equality under Article 14 of the Constitution. The court, however, held that laws enacted in furtherance of DPSP could not be challenged on the grounds that they violated the right to equality, as per Article 31C of the Constitution ("Saving of laws giving effect to certain directive principles").

The Association appealed the decision in the SC. In December 1982, in the apex court, the central question became whether "material resources of the community" as per Article 39(b) includes privately owned resources – which would include (some) buildings. In March 2008, a five-judge Bench heard the case and referred it to a larger Bench, stating that the views expressed in Sanjeev Coke Manufacturing require reconsideration.

In February 2002, a seven-judge Bench took note of Justice Iyer's interpretation, and stated "we have some difficulty in sharing the broad view that material resources of the community under Article 39(b) covers what is privately owned," and referred the challenge to Chapter VIII-A of the MHADA to a nine-judge Bench – which is now hearing the matter.

- **What are the Different Case Laws Interpreting Article 39(b)?**



- **Why is the Apex Court Interpreting Article 39(b) Now?**
  - **Since 1977**, the apex court has weighed in on the interpretation of Article 39(b) on multiple occasions - most notably, in **State of Karnataka v Shri Ranganatha Reddy (1977)**.
  - The interpretation by a (9-judges) bench comprising Chief Justice D Y Chandrachud **stems from Justice V R Krishna Iyer's dissenting view** in Ranganatha Reddy case of 1977.
    - According to Justice V R Krishna Iyer**,** community resources included private properties.
    - After subsequent judgements, confusion over this interpretation led to the matter being referred to a nine-judge bench in 2002.
  - Though the question is old, it is reverberating in the current politically-surcharged atmosphere after Rahul Gandhi 's promise to conduct a financial and institutional survey.
    - This survey will take up the historic assignment **to distribute the wealth of India, jobs and other welfare schemes** to vulnerable sections based on their population.
- **Why Article 39(b) Needs a 9-Judge Bench Interpretation?**
  - **CJI explained why Article 39(b) needed to be interpreted by a nine-judge bench.**
  - The majority in the Ranganatha Reddy case in 1977 clarified that material resources of the community do not include private property.
  - However, a five-judge bench in **Sanjeev Coke in 1983** relied on Justice Iyer ignoring that it was a minority view.
  - In the meantime, SC in **Mafatlal Industries case in 1997** opined that Article 39(b) needed interpretation by a nine-judge bench.
- **Views of Advocates on Interpretation of Article 39(b):**
  - According to Senior advocates, **community resources could never include privately owned properties.**
  - The advocates **termed Justice Iyer's view a reflection of his Marxist socialist ideology** which had no place in a democratic country governed by a Constitution giving primacy to fundamental rights of citizens.
  - Solicitor general Tushar Mehta said the sole question before the court was interpretation of Article 39(b) and **not Article 31C.**
    - **Article 31C provides safe harbour** to laws enacted in pursuance of the directive principles.
    - Its validity as it existed prior to the 25th constitutional amendment in 1971 has been upheld by a 13-judge bench in Kesavananda Bharti case.
  - **The bench asked** how excess agricultural land was distributed among poor peasants in the 1960s. **Replying to this, a senior advocate said** –
    - No one questioned the state's power to acquire land for public purposes after paying a fair compensation to the owner of the land.
    - Land ceiling laws were passed by states to determine excess land accumulated by zamindars and such excess land was then redistributed.
    - But if the government wants to take away my property and distribute it to the poor, then I would be left with no money as my fees would be taken away and paid to poor people.

8. <u>Implications of Tik-Tok Ban</u>
<u>GS 2 (International evets of importance)</u>

BIDEN SIGNS TIKTOK BAN BILL INTO LAW: WHY IS THIS SIGNIFICANT?

SOUMYARENDRA BARIK
NEW DELHI, APRIL 24

US PRESIDENT Joe Biden on Wednesday signed a Bill into law that will either ban TikTok or force a sale of the social media app by its Chinese owner, Bytedance.

The move underscores the continuing tensions between Washington and Beijing amid backchannel parleys to mend diplomatic ties.

It also shows that governments across the world are now open to taking action against Internet platforms from a country when diplomatic relations turn sour.

What is the law in the US?

The law will allow TikTok to continue to operate in the US only if Bytedance sells it within nine months.

It has been enacted as the US government is wary of the possibility of the Chinese government forcing domestic companies like Bytedance to share sensitive personal data of more than 170 million American users, or spread pro-Chinese propaganda.

Experts believe that the way forward from this point could be lined with legal challenges against the measure, and also expect Beijing to make retaliatory moves.

The law is also being seen as an attack on free speech by some in the US, including TikTok.

How have tech bans become a foreign policy tool?

China is a major tech superpower and therefore, countries that have seen their relationship with Beijing worsen have tried to attack the country's burgeoning tech sector. Beijing has retaliated with similar moves.

Take the example of Huawei. The manufacturer of high-end smartphones used to be a leading name in 5G technology. Under the Donald Trump administration, however, Huawei's access to US-made components and technology,

Office of social media app TikTok in California, US. *Reuters*

including Google's Android services, was cut off. The White House had also barred manufacturers globally from using US tech to make components for Huawei.

As a result, Huawei had to develop its own smartphone operating system and chip for the phones. The company seems to have shrugged off US sanctions now and grew faster in 2023 than it did in the last four years.

In 2020, the UK banned the use of Huawei gear in its telecom network owing to suspected national security risks. India has followed a similar path, and aside from banning TikTok and similar platforms, disallowed Indian telephone companies from partnering with Huawei to set up their 5G networks.

Beijing in turn has retaliated against the US, albeit at a much smaller scale. Earlier this year, China introduced new guidelines aimed at blocking Intel and AMD chips in government personal computers and servers.

Experts suggest that such tech sanctions could be a double-edged sword. On the one hand they may slow down the progress of a company because they would not have access to cutting-edge tools being made in the rest of the world. On the other hand, such sanctions may force them to develop their own technology, which could reduce their dependence on foreign companies and boost the domestic tech sector.

- **Why in News:** US senate has passed a bill that could ban Tik-tok. The proposed law would allow TikTok to continue to operate in the US only if Bytedance sells it within nine months as the government is afraid that Chinese government can force domestic companies like Bytedance to share sensitive personal data of over 170million American users, or be abused to spread pro-Chinese propaganda.
- **Response to Bill:**
  - Many in the US see this move as an attack on free speech of 170 million Americans. As per Tiktok, this move could devastate seven million businesses, and shutter a platform that contributes $24 billion to US economy, annually. It is also being seen as a foreign policy tool under which Chinese tech companies are being targeted.
- **What Could Be the Consequences?**
  - There could be legal challenges, Beijing can also make retaliatory moves if the Bill were to become law. Earlier when Huawei was banned, Beijing introduced new guidelines aimed at blocking Intel and AMD chips in government PCs and servers.
- **Is This the First Attempt at Banning TikTok?**
  - No, under former President Trump, Bytedance was forced into selling TikTok's American operations to an American company. Many companies had shown interest including Oracle and Microsoft.
- **Repercussions of Tech Bans**
  - Such tech sanctions could be a double edged sword. They might slow down the progress of a country by having no access to cutting edge tools available across the world and such sanctions may also force them to develop their own technology which could reduce dependence on foreign companies and boost domestic tech. For example, Huawei had to develop its own smartphone operating system and chip after being banned from accessing US-made components and technology, including Android.

9. <u>Article 244 (A) of Indian Constitution</u>
<u>GS 2 (Constitution)</u>

Art 244(A), the constitutional promise of autonomy for Assam tribal area

SUKRITA BARUAH
SILCHAR, APRIL 24

IN ASSAM'S tribal-majority Diphu Lok Sabha constituency, which votes on April 26, candidates of all parties have promised the implementation of Article 244(A) of the Constitution to create an autonomous 'state within a state'. This, in fact, has been the primary election promise in Diphu for decades.

What is the social profile of Diphu?

Diphu is the most sparsely populated of Assam's 14 Lok Sabha constituencies, with just 8.9 lakh voters. It is reserved for Scheduled Tribes (STs), and covers six legislative Assembly segments in three tribal-majority hill districts of Assam: Karbi Anglong, West Karbi Anglong, and Dima Hasao.

These three districts are administered under the provisions of the Sixth Schedule of the Constitution, which describes the "Provisions as to the Administration of Tribal Areas in the States of Assam, Meghalaya, Tripura and Mizoram".

These areas come under two autonomous councils: the Karbi Anglong Autonomous Council (KAAC) and the North Cachar Hills Autonomous Council. Voters at the seat belong to various communities: Karbi, the third largest tribe in the state, Dimasa, Hmar, Kuki, Rengma Naga, Zeme Naga, Bodo, Garo, Assamese, Bengali, Bihari, Gorkha, etc.

However, the seat has been represented by members of the Karbi community since 1977. Currently, all Assembly segments under the Diphu seat are with the BJP.

What is Article 244(A)?

Article 244(A) was inserted by The Constitution (Twenty-second Amendment) Act, 1969, which enabled Parliament to pass an Act to "form within the State of Assam an autonomous State comprising (whether wholly or in part) all or any of... [certain specified] tribal areas", including Karbi Anglong.

This autonomous state would have its own Legislature or Council of Ministers or both. This provision goes a step further than the provisions under the Sixth Schedule, which are already in place in these areas.

The autonomous councils under the Sixth Schedule have elected representatives for more decentralised governance of these tribal areas, but they have limited legislative powers, do not have control over law and order, and have only limited financial powers.

When did the demand for autonomy start, and how has it played out so far?

The demand for autonomy is as old as the movement in the hill areas of undivided Assam, which began in the 1950s, seeking a separate hill state. This movement resulted in the creation of the full-fledged state of Meghalaya in 1972 – however, because of the promise extended through Article 244(A), the leaders of the Karbi Anglong region opted to remain with Assam.

The Autonomous State Demand Committee (ASDC) – which was set up as a mass organisation to press for the region's autonomy, and which continues to operate today – along with student bodies in the region, signed a Memorandum of Settlement with the state and central governments in 1995 for enhancing the powers of the autonomous councils in the region by increasing the number of departments under their charge to 30 from 10.

EXPLAINED LAW

The erstwhile Autonomous District Lok Sabha seat was represented by Jayanta Rongpi from 1991 to 1998 as a candidate of the ASDC. The ASDC has a candidate for the Diphu seat in the current election as well.

Over the years, as autonomy for the region remained elusive, the demand for implementation of Article 244(A) also took the form of an armed insurgency. However, the BJP-led governments in Delhi and Guwahati have signed several peace accords with militant groups, including with the Karbi and Dimasa.

In 2021, a peace settlement was reached with five militant groups in Karbi Anglong – Karbi People's Liberation Tigers, People's Democratic Council of Karbi Longri, Karbi Longri NC Hills Liberation Front, Kuki Liberation Front, and United People's Liberation Army – under which greater autonomy and a special development package of Rs 1,000 crore over five years were promised. Last year, an agreement was signed with the Dimasa National Liberation Army along the same lines.

What are parties promising now?

The signing of the peace settlements has not succeeded in putting the lid on discussions around Article 244(A). The outgoing BJP MP from Diphu, Horen Sing Bey, is himself a former Karbi militant, who was general secretary of the United People's Democratic Solidarity, which had signed a Memorandum of Settlement in 2011 with the Centre and the state for enhanced autonomy and special packages for the KAAC.

During the 2019 campaign, Horen Sing Bey spoke of his dedication to autonomy demand by drawing on his days as a leader of the insurgency. All other candidates, however, also focused on the implementation of Article 244(A) as their primary campaign plank.

The BJP candidate for Friday's election is Amarsing Tisso, a KAAC Executive Member. He has presented a constituency-specific manifesto, the first promise of which is the implementation of Article 244(A).

Holiram Terang, a veteran member of the ASDC and its candidate in the 2019 election, said: "In every election, every political party highlights this issue, but once the election is done, there is never any forward movement. Even if the BJP candidate, or any other candidate, promises it here, the party itself is not with them. Not a single party mentions it in their national manifesto... The basic attitude of successive governments has not been to grant more autonomy but to try and take powers back."

- **Why in News:** In the tribal-dominated Diphu Lok Sabha constituency in Assam, candidates from all political parties have pledged to put into action Article 244(A) of the Constitution. Article 244(A) aims to establish an autonomous region, almost like a separate government within the state.
- **Diphu and its social profile**
  - Diphu is the most sparsely populated of Assam's 14 Lok Sabha constituencies, with just 8.9 lakh voters.
  - It is reserved for Scheduled Tribes (STs), and covers six legislative Assembly segments in three tribal-majority hill districts of Assam: Karbi Anglong, West Karbi Anglong, and Dima Hasao.
    - These three districts are administered under the provisions of the Sixth Schedule of the Constitution.
  - These areas come under two autonomous councils: the Karbi Anglong Autonomous Council (KAAC) and the North Cachar Hills Autonomous Council.
  - Voters at the seat belong to various communities: Karbi (the third largest tribe in the state), Dimasa, Hmar, Kuki, Rengma Naga, Zeme Naga, Bodo, Garo, Assamese, Gorkha, etc.
- **Article 244(A) of the Constitution**
  - **22nd amendment act of 1969**
    - The Constitution (Twenty-second Amendment) Act of 1969 introduced Article 244(A), allowing **Parliament** to create an **autonomous region** within Assam.
    - This region could include certain tribal areas like Karbi Anglong.
  - **Key highlights**
    - In this autonomous region, **there could be a separate governing body, like a Legislature or Council of Ministers, or both.**
    - This provision is more advanced than what's currently in place under the Sixth Schedule for these areas.
  - **Difference from the Sixth Schedule of the Constitution**
    - Under the Sixth Schedule, there are already councils with elected representatives for decentralized governance in tribal areas.
    - However, these councils have limited powers. They can't control law enforcement, and their financial authority is also limited.
    - On the other hand, Article 244(A) accounts for **more autonomous powers** to tribal areas. **Among these the most important power is the control over law and order.**
- **Demand for autonomy**
  - **History of Autonomy Demand**
    - The quest for autonomy in the hill areas of undivided Assam dates back to the 1950s, with a movement seeking a separate hill state.
    - This movement eventually led to the formation of Meghalaya as a full-fledged state in 1972.
    - Despite this, leaders in the Karbi Anglong region chose to remain with Assam, influenced by the promise of autonomy under Article 244(A).
  - **Role of Autonomous State Demand Committee (ASDC)**
    - ASDC, established as a mass organization advocating for regional autonomy, played a pivotal role.
    - In 1995, the ASDC, alongside local student bodies, reached a Memorandum of Settlement with state and central governments.
    - This agreement aimed to bolster the powers of the two autonomous councils in the region by expanding the number of departments under their charge from 10 to 30.
  - **Political Representation and Insurgency**
    - Frustrated by the elusive nature of autonomy, the demand for implementing Article 244(A) escalated into armed insurgency over the years.
    - Both the Delhi and Guwahati governments have engaged in peace negotiations with militant groups, including the Karbi and Dimasa factions, signing several peace accords in the process.
  - **Peace settlement**
    - In 2021, a peace settlement was reached with five militant groups in Karbi Anglong.

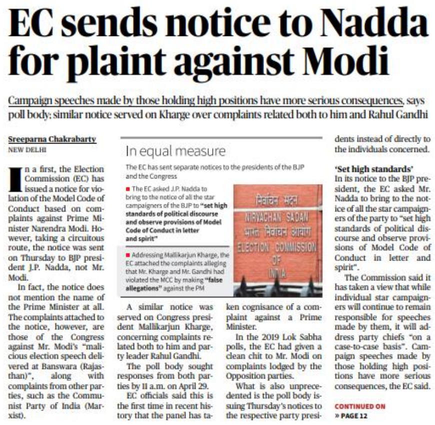
- ❖ These groups included Karbi People's Liberation Tigers, People's Democratic Council of Karbi Longri, Karbi Longri NC Hills Liberation Front, Kuki Liberation Front, and United People's Liberation Army.

- Under this settlement, greater autonomy and a special development package of Rs 1,000 crore over five years were promised.
- In 2023, an agreement was signed with the Dimasa National Liberation Army along the same lines.

NEELOFER CIVIL SERVICE CLASSES
UPSC WITH NSCS
DELHI IAS

26 April, 2024

1. Violation of the Model Code of Conduct (MCC)
GS 2 (Elections)



EC sends notice to Nadda for plaint against Modi

Campaign speeches made by those holding high positions have more serious consequences, says poll body; similar notice served on Kharge over complaints related both to him and Rahul Gandhi

Sreeparna Chakrabarty
NEW DELHI

In a first, the Election Commission (EC) has issued a notice for violation of the Model Code of Conduct based on complaints against Prime Minister Narendra Modi. However, taking a circuitous route, the notice was sent on Thursday to BJP president J.P. Nadda, not Mr. Modi.

In fact, the notice does not mention the name of the Prime Minister at all. The complaints attached to the notice, however, are those of the Congress against Mr. Modi's "malicious election speech delivered at Banswara (Rajasthan)", along with complaints from other parties, such as the Communist Party of India (Marxist).

In equal measure

The EC has sent separate notices to the presidents of the BJP and the Congress

- The EC asked J.P. Nadda to bring to the notice of all the star campaigners of the BJP to **"set high standards of political discourse and observe provisions of Model Code of Conduct in letter and spirit"**
- Addressing Mallikarjun Kharge, the EC attached the complaints alleging that Mr. Kharge and Mr. Gandhi had violated the MCC by making **"false allegations"** against the PM

A similar notice was served on Congress president Mallikarjun Kharge, concerning complaints related both to him and party leader Rahul Gandhi.

The poll body sought responses from both parties by 11 a.m. on April 29.

EC officials said this is the first time in recent history that the panel has taken cognisance of a complaint against a Prime Minister.

In the 2019 Lok Sabha polls, the EC had given a clean chit to Mr. Modi on complaints lodged by the Opposition parties.

What is also unprecedented is the poll body issuing Thursday's notices to the respective party presidents instead of directly to the individuals concerned.

'Set high standards'

In its notice to the BJP president, the EC asked Mr. Nadda to bring to the notice of all the star campaigners of the party to "set high standards of political discourse and observe provisions of Model Code of Conduct in letter and spirit".

The Commission said it has taken a view that while individual star campaigners will continue to remain responsible for speeches made by them, it will address party chiefs "on a case-to-case basis". Campaign speeches made by those holding high positions have more serious consequences, the EC said.

CONTINUED ON » PAGE 12

- **Why in News:**
  - In a first, the Election Commission of India (ECI) has issued a notice for violation of the Model Code of Conduct (MCC) on the basis of complaints against Prime Minister Narendra Modi.
  - However, taking a circuitous route, the notice was sent to BJP President, and not to PM Modi.
- **What is the Model Code of Conduct (MCC)?**
  - The MCC for the guidance of political parties and candidates is **a set of norms which has evolved with the consensus of political parties**.
  - Once the ECI announces the poll schedule, the MCC immediately comes into effect and remains operational until the conclusion of the electoral process.
  - **Its primary objective** is to ensure that campaigns, polling, and counting proceed in an orderly, transparent, and peaceful manner.
  - Additionally, it serves as **a mechanism to curb any misuse of state machinery and financial resources by the ruling party.**
  - It was initially introduced by the ECI under the title of '**Minimum Code of Conduct**' during the Mid-Term Elections in **1968-69**.
  - **Subsequent revisions** were made in 1979, 1982, 1991, and 2013, reflecting the changing dynamics of electoral politics in the country.
  - Though the MCC has **no statutory backing** (only a moral obligation), it has grown in strength as a result of the ECI's strict enforcement since its implementation in the 1990s.
- **What Activities Are Prohibited After Implementation of MCC?**
  - **The MCC imposes several restrictions**, including prohibiting the ruling party from using its official position for campaigning purposes.
  - Ministers and government authorities are **barred from announcing financial grants or launching projects** that may influence voters in favour of the ruling party.
    - Additionally, **the utilisation of official machinery** for campaign purposes is strictly prohibited.
  - This code provides that **no party or candidate shall indulge in any activity which may aggravate existing differences** or create mutual hatred or cause tension between different castes, religious or linguistic communities.
  - It also provides that there shall be **no appeal to caste or communal feelings for securing votes**. Mosques, churches, temples or other places of worship shall not be used as a forum for election propaganda.
- **The Unprecedented Move of the ECI:**
  - The notice served to the BJP President was regarding PM Modi's malicious election speech delivered at Banswara (Rajasthan).
  - A similar notice was served to Congress president, concerning complaints related both to him and party leader Rahul Gandhi.
  - ECI officials said **this is the first time in recent history** that the panel has taken cognisance of a complaint against a Prime Minister.
  - **In the 2019 Lok Sabha polls**, the ECI had given a clean chit to Mr. Modi on complaints lodged by the Opposition parties.
    - Then-Election Commissioner Ashok Lavasa had submitted a dissent note on some of the decisions taken by the ECI regarding complaints against the Prime Minister.
  - What is also unprecedented is the ECI issuing **notices to the respective party presidents instead of directly to the concerned individuals**.
  - **In its notice to the BJP president**, the ECI asked him to bring to the notice of all-star campaigners of the party **to set high standards of political discourse** and **observe provisions of MCC in letter and spirit.**

2. RBI's Draft Rules for Payment Aggregators
GS 3 (Economy)

RBI's draft rules for payment aggregators

Will non-bank payment aggregators need separate authorisation from the RBI? What lessons did the RBI incorporate from the Paytm Payments Bank crisis? What will happen to non-banking entities currently engaged in point-of-sale activities if they fail to comply with the RBI's approval-seeking timeframe?

EXPLAINER

Saptaparno Ghosh

The story so far:

Following its announcement in June 2022 that it will seek better regulation of offline payment aggregators (PAs) facilitating proximity or face-to-face transactions, the Reserve Bank of India (RBI) floated two consultation papers earlier this month. The first deals with activities of offline PAs, while the second proposes to strengthen the ecosystem's safety by expanding instructions for Know Your Customer (KYC), due diligence of onboarded merchants and operations in Escrow accounts. The RBI has invited comments/feedback by May 31.

What exactly are the norms about?

Payment aggregators are entities that settle payments from customers to merchants – unburdening the latter from creating a payment integration system of their own. The existing guidelines cover their activities in e-commerce sites and other online avenues. The latest draft guidelines propose to extend these regulations to offline spaces, entailing proximity or face-to-face transactions. The RBI observed back in June 2022 that the nature of activities carried out by the PAs, both online and offline, is similar. It aspires to bring in "synergy in regulation covering activities and operations of PAs apart from convergence on standards of data collection and storage."

The proposed norms incorporate lessons from what happened this year with Paytm Payments Bank (PPBL) – albeit in an unrelated space. With the expansion of the scope of operations of PAs, the RBI appears to be strengthening the ecosystem against any opacity. The PPBL crisis was triggered by, among other things, major irregularities in the bank's KYC adherence. The Financial Intelligence Unit (FIU-IND) had imposed a penalty of ₹5.49 crore having found that PPBL "engaged in a number of illegal acts, including organising and facilitating online gambling." It added that the money generated from it was "routed and channelled through bank accounts maintained by these (illegal) entities" with the PPBL.

Is registration with the RBI being made compulsory?

The primary focus here is on non-bank PAs and within them, the offline extensions. Banks providing physical PA services would not require any separate authorisation from the RBI. They are only expected to comply with the revised instructions within three months after they are issued.

Non-banking entities providing PA services at the point of sale (PoS), that is, offline, would have to inform the RBI within 60 days (after the circular is issued), about their intent to seek authorisation.

The entities would, however, be allowed to continue their operations. As for non-banking entities providing PA services online – both those authorised and whose applications are pending – would be required to seek approval, about their existing offline PA activity, from the Department of Payment and Settlement Systems and the regulator within 60 days of the directions being mandated. This would also apply to any authorised non-banking entity aspiring to enter the online and/or offline PA space in the future.

The RBI's directions also stipulate that entities currently engaged in PoS activities must ensure they adhere to guidelines on merchant on-boarding, customer grievance redressal and dispute management, baseline technology recommendations, security, fraud prevention and risk management framework as per the previous framework within 3 months. For entities that would require fresh registration, the RBI has said continued adherence to existing guidelines framed in 2020 would be viewed positively while processing the applications.

Does it talk about provisions for sustainability?

The RBI proposes that non-banking entities currently providing proximity/face-to-face transaction services have a minimum net worth of ₹15 crore when they apply. This would be extended to ₹25 crore by March 31, 2028. The requirements are the same for new applicants, the difference being that a ₹25 crore net worth requirement would apply at the end of third financial year from when the authorisation is granted.

The RBI has proposed that existing offline operators unable to comply with the approval-seeking timeframe wind up their operations by July 31, 2025. Banks will also be directed to close all accounts by the end of October next year should they fail to produce evidence of their application seeking authorisation.

What about KYC requirements?

The regulations aim to ensure that onboarded merchants do not collect and settle funds for services not offered on their platforms. While KYC is already mandatory, the regulations seek to make the provisions more nuanced.

The RBI's proposed instructions categorise merchants into small and medium merchants. Small merchants would constitute physical merchants with an annual business turnover of less than ₹5 lakh who are not registered under the GST regime. The regulator proposes that the PAs undertake 'contact point verification', that is, collect information physically to establish the existence of the firm. They must also verify the bank accounts in which their funds are settled. Medium merchants, defined as physical or online merchants with annual business turnover of less than ₹40 lakhs who are not registered under the GST, would also have to undergo contact point verification.

The PA would be expected to establish their existence by verifying one official document each of the proprietor, beneficial owner or attorney holder, and of the stated business.

The PAs must ensure that transactions undertaken by their merchants are in line with their business profile. They must assign risk-based payment limits to the merchants. Based on their transaction pattern, the merchant could be migrated to a higher degree of due diligence.

Does it propose storage of card data?

The draft regulations instruct that no entity, other than the card issuer and/or card network, can store data for proximity/face-to-face payments from August 1, 2025, and direct them to purge data stored previously. To track transactions and reconcile them, entities would be allowed to store limited data, that is, the last four digits of the card number and the issuer's name.

Regulatory shift: To track transactions, entities would be allowed to store limited data. GETTY IMAGES

THE GIST

- The Reserve Bank of India is proposing new regulations for offline payment aggregators (PAs) to enhance safety.
- The proposed norms aim to extend existing guidelines to cover offline transactions and strengthen Know Your Customer requirements for merchants.
- The draft regulations instruct that no entity, other than the card issuer and/or card network, can store data for proximity/face-to-face payments from August 1, 2025.

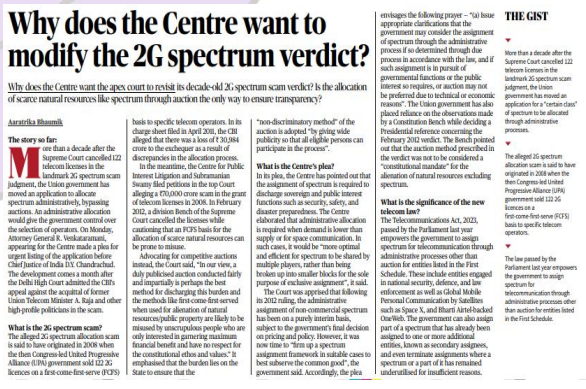
- **Background:**
  - The Reserve Bank of India (RBI) had floated two consultation papers earlier this month to seek better regulation of offline Payment Aggregators (PAs).
  - The first deals with activities of offline PAs, while the second proposes to strengthen the ecosystem's safety by expanding instructions for Know Your Customer (KYC), due diligence of onboarded merchants and operations in Escrow accounts.
  - The RBI had invited comments/feedback by May 31.
- **Who are Payment Aggregators?**
  - Payment aggregators (Pas) are entities that facilitate online transactions by collecting payments from customers on behalf of merchants.
  - They act as intermediaries between the buyer, the seller, and the payment gateway.
  - Working of PAs:
    - **Collect Payments:** Payment aggregators collect payments from customers using various payment methods like credit/debit cards, net banking, digital wallets, etc
    - **Transfer Funds:** Once the payment is collected, the aggregator transfers the funds to the merchant after deducting their service fees or commission.
    - **Settlement:** The aggregator ensures that the funds are settled in the merchant's bank account within a specified time frame, which is usually a few days.
    - **Security:** Payment aggregators ensure the security of transactions by using encryption and other security measures to protect sensitive customer information.
    - **Integration:** They offer APIs and plugins that merchants can integrate into their websites or mobile apps to easily accept payments.
  - Popular payment aggregators include companies like **Razorpay**, **Paytm** and **PayPal** in India.
  - They play a crucial role in enabling businesses to accept payments online, thereby facilitating e-commerce and online transactions
- **What Exactly are the RBI's Draft Rules About?**
  - The existing guidelines cover their activities in e-commerce sites and other online avenues.

- The latest draft guidelines propose to extend these regulations to offline spaces, entailing proximity or face-to-face transactions
- RBI observed back in June 2022 that the nature of activities carried out by the PAs, both online and offline, is similar.
- It aspires to bring in "synergy in regulation covering activities and operations of PAs apart from convergence on standards of data collection and storage."
- The proposed norms are elaborate and incorporate lessons from what happened this year with **Paytm Payments Bank** (PPBL).
  - The PPBL crisis was triggered by, among other things, major irregularities in the bank's KYC adherence.
  - In fact, the Financial Intelligence Unit (FIU-IND) had imposed a penalty of ₹5.49 crore having found that PPBL "engaged in a number of illegal acts, including organising and facilitating online gambling."
- With expansion of the utility and scope of operations of PAs, RBI appears to be strengthening the ecosystem against any such opacity.

- **Is Registration with RBI Being Made Mandatory?**
  - The primary focus here is on non-bank PAs and within them, the offline extensions.
  - Banks providing physical PA services as part of their normal banking relationship would not require any separate authorisation from the RBI.
  - They are **only expected to comply with the revised instructions within three months after they are issued**.
  - PAs, providing online / offline services, would have to inform RBI within 60 days (after the circular is issued), about their intent to seek authorisation.
- **Does the Draft Rules talk about Provisions for Sustainability?**
  - RBI proposes that non-banking entities currently providing proximity/face to face transaction services have a minimum net worth of ₹15 crore when they apply.
  - This would be extended to ₹25 crore by March 31, 2028.
  - The requirements are the same for new applicants, the difference being that a ₹25 crore net worth requirement would apply at the end of three financial years when the authorisation is granted.
  - RBI has proposed that existing offline operators unable to comply with the approval-seeking timeframe wind-up their operations by July 31, 2025.
  - Banks will also be directed to close all accounts by the end of October next year should they fail to produce evidence of their application seeking authorisation.
- **Provisions for KYC Requirements:**
  - The purpose of the proposed regulations is to ensure that onboarded merchants do not collect and settle funds for services not offered on their platforms.
  - While KYC is already mandatory, the regulations seek to extend the scope and make the provisions more nuanced.
  - RBI's proposed instructions categorise merchants into small and medium merchants.
  - **Small merchants** would constitute physical merchants with an annual business turnover of less than ₹5 lakh who are not registered under the Goods and Services Tax (GST) regime.
  - The regulator proposes that the PAs undertake 'contact point verification', that is, collect information physically to establish the existence of the firm.
  - They must also verify the bank accounts in which their funds are settled.
  - **Medium merchants**, defined as physical or online merchants with annual business turnover of less than ₹40 lakhs who are not registered under GST, would also have to undergo contact point verification.
  - The PA would be expected to establish their existence by verifying one official document each of the proprietor, beneficial owner or attorney holder, and of the stated business.
- **Provisions for Data Privacy:**
  - The draft regulations instruct that no entity, other than the card issuer and/or card network, can store data for proximity/face to face payments from August 1, 2025, and direct them to purge data stored previously.
  - To track transactions and to reconcile them, entities would be allowed to store limited data, that is, the last four digits of the card number and the issuer's name.
  - The onus for compliance in this domain would also be on card networks.

3. Centre seeking a clarification of the 2G spectrum scam verdict
GS 2 (Governance)

- **Why in News:**
  - The Union government has moved an application for a certain class of spectrum to be allocated through **administrative processes** instead of competitive auctions. This development comes after the Supreme Court in 2012 had canceled 122 telecom licenses due to the 2G spectrum scam. Spectrum considered to be a scarce natural resource was ordered by the top Court to be allocated through the fair and impartial process of auction.
  - An **administrative allocation would mean that the government will have the final say in deciding the procedure for selecting operators.**


Why does the Centre want to modify the 2G spectrum verdict?

Why does the Centre want the apex court to revisit its decade-old 2G spectrum scam verdict? Is the allocation of scarce natural resources like spectrum through auction the only way to ensure transparency?

Aarathrika Bhaumik

The story so far:

More than a decade after the Supreme Court cancelled 122 telecom licenses in the landmark 2G spectrum scam judgment, the Union government has moved an application to allocate spectrum administratively, bypassing auctions. An administrative allocation would give the government control over the selection of operators. On Monday, Attorney General R. Venkataramani, appearing for the Centre made a plea for urgent listing of the application before Chief Justice of India D.Y. Chandrachud. The development comes a month after the Delhi High Court admitted the CBI's appeal against the acquittal of former Union Telecom Minister A. Raja and other high-profile politicians in the scam.

What is the 2G spectrum scam?

The alleged 2G spectrum allocation scam is said to have originated in 2008 when the then Congress-led United Progressive Alliance (UPA) government sold 122 2G licences on a first-come-first-serve (FCFS) basis to specific telecom operators. In its charge sheet filed in April 2011, the CBI alleged that there was a loss of ₹ 30,984 crore to the exchequer as a result of discrepancies in the allocation process.

In the meantime, the Centre for Public Interest Litigation and Subramanian Swamy filed petitions in the top Court alleging a ₹70,000 crore scam in the grant of telecom licenses in 2008. In February 2012, a division Bench of the Supreme Court cancelled the licenses while cautioning that an FCFS basis for the allocation of scarce natural resources can be prone to misuse.

Advocating for competitive auctions instead, the Court said, "In our view, a duly publicised auction conducted fairly and impartially is perhaps the best method for discharging this burden and the methods like first-come-first-served when used for alienation of natural resources/public property are likely to be misused by unscrupulous people who are only interested in garnering maximum financial benefit and have no respect for the constitutional ethos and values." It emphasised that the burden lies on the State to ensure that the "non-discriminatory method" of the auction is adopted "by giving wide publicity so that all eligible persons can participate in the process".

What is the Centre's plea?

In its plea, the Centre has pointed out that the assignment of spectrum is required to discharge sovereign and public interest functions such as security, safety, and disaster preparedness. The Centre elaborated that administrative allocation is required when demand is lower than supply or for space communication. In such cases, it would be "more optimal and efficient for spectrum to be shared by multiple players, rather than being broken up into smaller blocks for the sole purpose of exclusive assignment", it said.

The Court was apprised that following its 2012 ruling, the administrative assignment of non-commercial spectrum has been on a purely interim basis, subject to the government's final decision on pricing and policy. However, it was now time to "firm up a spectrum assignment framework in suitable cases to best subserve the common good", the government said. Accordingly, the plea envisages the following prayer – "(a) Issue appropriate clarifications that the government may consider the assignment of spectrum through the administrative process if so determined through due process in accordance with the law, and if such assignment is in pursuit of governmental functions or the public interest so requires, or auction may not be preferred due to technical or economic reasons". The Union government has also placed reliance on the observations made by a Constitution Bench while deciding a Presidential reference concerning the February 2012 verdict. The Bench pointed out that the auction method prescribed in the verdict was not to be considered a "constitutional mandate" for the alienation of natural resources excluding spectrum.

What is the significance of the new telecom law?

The Telecommunications Act, 2023, passed by the Parliament last year empowers the government to assign spectrum for telecommunication through administrative processes other than auction for entities listed in the First Schedule. These include entities engaged in national security, defence, and law enforcement as well as Global Mobile Personal Communication by Satellites such as Space X, and Bharti Airtel-backed OneWeb. The government can also assign part of a spectrum that has already been assigned to one or more additional entities, known as secondary assignees, and even terminate assignments where a spectrum or a part of it has remained underutilised for insufficient reasons.

THE GIST

- More than a decade after the Supreme Court cancelled 122 telecom licenses in the landmark 2G spectrum scam judgment, the Union government has moved an application for a "certain class" of spectrum to be allocated through administrative processes.
- The alleged 2G spectrum allocation scam is said to have originated in 2008 when the then Congress-led United Progressive Alliance (UPA) government sold 122 2G licences on a first-come-first-serve (FCFS) basis to specific telecom operators.
- The law passed by the Parliament last year empowers the government to assign spectrum for telecommunication through administrative processes other than auction for entities listed in the First Schedule.

- **Airwaves/Spectrum**
  - Airwaves are radio frequencies within the **electromagnetic spectrum** that can carry information wirelessly for a range of services including telecommunications.
  - The government manages and allocates airwaves to companies or sectors for their use.
  - The government **auctions** a fixed amount of spectrum within specified band/s to be utilised by operators for providing communication services to consumers.
- **2G spectrum scam verdict**
  - **Case originated in 2008**
    - The alleged 2G spectrum allocation scam is said to have originated in 2008 when the then government sold 122 2G licences on a first-come-first-serve (FCFS) basis to specific telecom operators.
    - In its charge sheet filed in April 2011, the CBI alleged that there was a **loss of ₹ 30,984 crore to the exchequer as a result of discrepancies in the allocation process.**
  - **Matter reaches SC**
    - Petitions were filed in the top Court alleging a ₹70,000 crore scam in the grant of telecom licenses in 2008
    - In February 2012, a division Bench of the SC cancelled the licenses while cautioning that an FCFS basis for the allocation of scarce natural resources can be prone to misuse.
  - **Competitive auctions for allocating natural resources**

- In its judgement, the apex court advocated for competitive auctions as the only route to allocate spectrum.
- It further emphasised that the burden lies on the state to ensure that the non-discriminatory method of auction is adopted by giving wide publicity so that all eligible persons can participate in the process.

- **Centre's plea: arguments in favour of allocating spectrum through administrative processes**
  - **Assignment of spectrum is required for various purposes**
    - The Centre has pointed out that the assignment of spectrum is required not only for commercial telecom services but also to discharge sovereign and public interest functions such as security, safety, and disaster preparedness.
    - Some spectrum categories have unique uses due to their characteristics or international norms. In these cases, auctions may not be the best choice.
      - ❖ E.g., for captive, backhaul, or sporadic use.
  - **Situation where demand is lower than supply**
    - The Centre further elaborated that administrative allocation is required when demand is lower than supply or for space communication.
    - In such cases, it would be more optimal and efficient for spectrum to be shared by multiple players, rather than being broken up into smaller blocks for the sole purpose of exclusive assignment.
    - The court was told that since its 2012 decision, non-commercial spectrum allocation has been temporary.
    - The government now wants to establish a solid framework for assigning spectrum, including methods other than auctions, for the greater good.
  - **2012 Presidential reference**
    - The government refers to a previous Constitution Bench's remarks on a Presidential reference about the 2012 verdict.
    - The Bench pointed out that the auction method prescribed in the verdict was not to be considered a constitutional mandate for the alienation of natural resources excluding spectrum.
    - However, spectrum, which according to the law declared in the 2G case, is to be alienated only by auction and no other method.
- **The Telecommunications Act, 2023**
  - **Empowers govt to use administrative route**
    - The law passed by the Parliament **empowers the government to assign spectrum for telecommunication through administrative processes other than auction for entities listed in the First Schedule.**
    - These include entities engaged in national security, defence, and law enforcement as well as Global Mobile Personal Communication by Satellites such as Space X, and Bharti Airtel-backed OneWeb.
  - **Government can also assign part of a spectrum that has already been assigned**
    - The government can also assign part of a spectrum that has already been assigned to one or more additional entities, known as secondary assignees.
    - It can even terminate assignments where a spectrum or a part of it has remained underutilised for insufficient reasons.

4. How a 'New' Japan Promises to Transform Asian Geopolitics?
GS 2 (International Relations)

Rise of a 'new' Japan

Japan has given up its post-War pacifism and is working to become a major military power. A politically resolute and militarily strong Japan contributes to India's objective of building a multipolar Asia

EXPERT EXPLAINS

C RAJA MOHAN

President Biden and Prime Minister Kishida at the White House on April 10. AFP

- **Why in News:** Japan's PM's (Fumio Kishida) address to the US Congress and the developments from his summit meeting with President Joe Biden, announced the arrival of **a new, assertive Japan to the world.**
- **What is the Change that Japan is Undergoing?**
  - **After World War II**, a defeated Japan adopted a policy of **pacifism**. Today, Japan is set to become **a major military power**, transforming its civilian industrial capability into a military industrial complex. From being a US protectorate, it now becomes **an American partner and a significant contributor to Asian and Indo-Pacific security.**
- **What is the Reason for this Radical Change?**
  - **A mix of external and internal factors** has contributed to its reorientation in the 21st century. **On the external front**, the rise of China and North Korea; the deepening military bonds between Beijing and Moscow; and the fears that the US could withdraw its security protection to Japan. **Internally**, this situation strengthened conservatives in Tokyo, who wanted to see Japan becoming a 'normal power'.
- **What Exactly is Japan Doing to Become a Geopolitical Power?**
  - **First**, Japan has done away with the historical cap (~1% of its GDP) on defence expenditure.
  - **Second**, Japan is in the process of further strengthening its counter-strike capability in the form of cruise missiles.
  - **Third**, Japan has eased its self-imposed ban on exports of lethal weapons to friendly countries.
  - **Fourth**, Japan-US are in the process of revising the command-and-control framework governing their defence forces.
- **What are the Changes in Japan's Diplomatic Posture?**
  - Japan has made attempts to end disputes with South Korea and Japan has been one of Ukraine's strongest supporters in the war with Russia.
- **What are the Implications of this 'New' Japan?**
  - **For the region:** A politically active and militarily more capable Japan will inevitably rearrange the regional security calculus.
  - **For India:** A politically resolute and militarily strong Japan that can build a stable Asian equilibrium is a positive development. It contributes to India's objective of **building a multipolar Asia in a multipolar world**.

5. Dongria Kondh Community
GS 1 (Social Geography)

- **Why in News:** Several members of **Dongria Kondh community**, a Particularly Vulnerable Tribal Group (PVTG), have warned of boycotting the upcoming elections unless 'false' cases registered against them for anti-mining protests and for allegedly having Maoist links are withdrawn.
- **About the Tribe**
  - The Dongria Kondh community, whose name stems from "dongar," meaning 'hill,' refers to themselves as Jharnia, signifying 'protector of streams.'
  - Situated in Odisha, the **Niyamgiri hill range serves** as the ancestral homeland of the **Dongria Kondh tribe.**
    - In a remarkable feat likened to a 'David and Goliath' battle, the Dongria Kondh tribe successfully thwarted mining conglomerate Vedanta Resources' attempts to exploit the Niyamgiri Hills.

- Empowered by the **Forest Rights Act**, village councils known as Gram Sabhas possess the authority to safeguard protected areas, preventing detrimental practices that could harm the environment, biodiversity, or cultural heritage.

- Vedanta's endeavors were stymied as they failed to secure proper approval from the community **Gram Sabhas**, as mandated by the Forest Rights Act.
- For the Dongria Kondh, their right to cultivate the slopes of Niyamgiri is divinely bestowed by **Niyam Raja**, whom they revere as their mountain god and royal ancestor, presiding over the sacred hills, including the revered N**iyam Dongar, or the Mountain of the Law.**

- **Niyamgiri Hills**
  - **Location:** The hill range is located between the Kandhamal district of forests and the forests of Rayagada, Kalahandi and Koraput districts.
  - The Niyamgiri Hills are also an important wildlife habitat and home to the **rare lizard, the Golden Gecko.**
  - It is an important migration corridor for Asian elephants and tigers.
  - **Other tribe residing on the hills:** Kutia Kondh

6. National Panchayati Raj Day
Recent events of importance

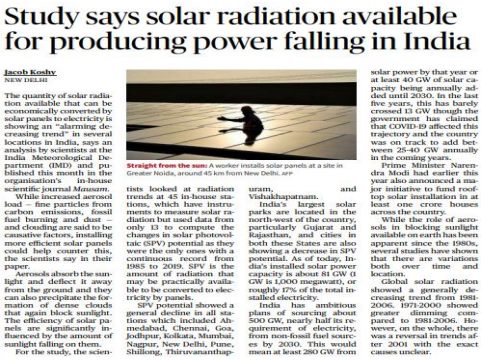
- **Why in News:** The **Ministry of Panchayati Raj** commemorates 24th April of every year as the **National Panchayati Raj Day (NPRD).**
- **About the Panchayati Raj Day**
  - April 24, 1993, marks a pivotal moment in the history of decentralization of power to grassroots levels with the formal establishment of Panchayati Raj.
  - On this significant date, the **73rd Constitutional Amendment of 1992** was enacted into law, ushering in a new era of local governance.
  - Panchayati Raj, a system of local government in India, operates through three tiers:
    - **Gram Panchayat:** Serving as the village council, this constitutes the most fundamental level of local governance.
    - **Block Panchayat**: This council oversees a cluster of villages, providing governance at a broader level.
    - **Zila Panchayat:** At the apex, the district council governs a larger geographic area, ensuring coordinated administration within a district.

7. Indian Ocean Currents
GS 1 (Geography)

- **Why in News:** Recent research by scientists at the **Indian National Centre for Ocean Information Services (INCOIS)** has revealed the profound influence of **bathymetry** on Indian Ocean currents. Their findings shed light on the intricate dynamics of ocean circulation, offering valuable insights for understanding marine phenomena.
- **Key Findings:**
  - **Bathymetric Influences:** Bathymetry, the **study of underwater depth of ocean floors,** has emerged as a key determinant of Indian Ocean currents. By examining the topography of the ocean floor, scientists have identified deep-swirling patterns that exhibit contrasting behaviors to surface current.
  - **Opposing Currents:** The study unveils **deep-swirling patterns** in the Indian Ocean depths, contrary to **surface currents.**
    - These patterns, observed around the Andaman and Nicobar Islands and the Maldives, present a complex interplay between ocean depths and surface flows.
  - **Influence of Landmasses:** The presence of boundary currents along the coast of Andaman and Nicobar Islands and the role of the Maldives Islands in extending the **Equatorial Under Current (EUC)** underscore the influence of landmasses on regional ocean currents.
- **Surface Currents and Deep Currents**
  - **Ocean Currents are of two main types:**
    - **Surface currents:** They are driven by global wind systems that are fueled by energy from the sun. These currents bring heat from the tropics to the polar regions; the **Gulf Stream**, for instance, brings warm water along the eastern coast of the US up to Northern Europe.
    - **Deep currents,** also known as **thermohaline circulation,** result from differences in water density. These currents occur when cold, dense water at the poles sinks. Surface water flows to replace sinking water, causing a conveyor belt-like effect of water circulating around the globe on a 1000-year journey.

27th April, 2024

1. Decreasing trend in solar radiation
GS 3 (Economy)



Study says solar radiation available for producing power falling in India

Jacob Koshy
NEW DELHI

The quantity of solar radiation available that can be economically converted by solar panels to electricity is showing an "alarming decreasing trend" in several locations in India, says an analysis by scientists at the India Meteorological Department (IMD) and published this month in the organisation's in-house scientific journal *Mausam*.

While increased aerosol load – fine particles from carbon emissions, fossil fuel burning and dust – and clouding are said to be causative factors, installing more efficient solar panels could help counter this, the scientists say in their paper.

Aerosols absorb the sunlight and deflect it away from the ground and they can also precipitate the formation of dense clouds that again block sunlight. The efficiency of solar panels are significantly influenced by the amount of sunlight falling on them.

For the study, the scientists looked at radiation trends at 45 in-house stations, which have instruments to measure solar radiation but used data from only 13 to compute the changes in solar photovoltaic (SPV) potential as they were the only ones with a continuous record from 1985 to 2019. SPV is the amount of radiation that may be practically available to be converted to electricity by panels.

SPV potential showed a general decline in all stations which included Ahmedabad, Chennai, Jodhpur, Kolkata, Mumbai, Nagpur, New Delhi, Pune, Shillong, Thiruvananthapuram, and Vishakhapatnam.

India's largest solar parks are located in the north-west of the country, particularly Gujarat and Rajasthan, and cities in both these States are also showing a decrease in SPV potential. As of today, India's installed solar power capacity is about 81 GW (1 GW is 1,000 megawatt), or roughly 17% of the total installed electricity.

India has ambitious plans of sourcing about 500 GW, nearly half its requirement of electricity, from non-fossil fuel sources by 2030. This would mean at least 280 GW from solar power by that year or at least 40 GW of solar capacity being annually added until 2030. In the last five years, this has barely crossed 13 GW though the government has claimed that COVID-19 affected this trajectory and the country was on track to add between 25-40 GW annually in the coming years.

Prime Minister Narendra Modi had earlier this year also announced a major initiative to fund rooftop solar installation in at least one crore houses across the country.

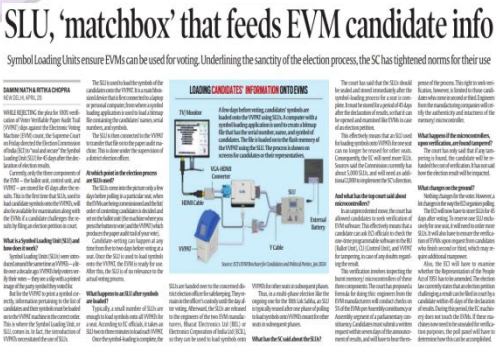
While the role of aerosols in blocking sunlight available on earth has been apparent since the 1980s, several studies have shown that there are variations both over time and location.

Global solar radiation showed a generally decreasing trend from 1981-2006. 1971-2000 showed greater dimming compared to 1981-2006. However, on the whole, there was a reversal in trends after 2001 with the exact causes unclear.

Straight from the sun: A worker installs solar panels at a site in Greater Noida, around 45 km from New Delhi. *AFP*

- **Why in News:** As per a recent study published in **India Meteorological Department (IMD) journal Mausam,** the quantity of solar radiation available that can be economically converted by solar panels to electricity is showing an "alarming decreasing trend" in several locations in India.
- **Solar Radiation Trends (Key-findings)**
  - **Study base:** The study investigates **global radiation (GR), diffuse radiation (DR), bright sunshine hours (BHS),** and the technical potential of solar power (Solar Photovoltaic potential (SPV)) using in-situ data collected by the India Meteorological Department from 1985 to 2019.
    - **GR** is high over the northwest and inland areas of peninsular India, while DR is high over coastal stations and extreme northern parts of the country.
    - **BHS i**s more pronounced in northwest India but less in the north, northeast, and southern peninsular regions.
    - **India's SPV** potential ranges from 1800 to 3400 W/m², exhibiting substantial regional variations. High SPV potential is observed in the northwest regions and southern peninsular India.
  - **However, there's an alarming trend:** GR and BHS have a significant decreasing trend across most parts of India. The rate of decrease has weakened in the recent decade.
  - The technical potential of solar power has also shown a significant decreasing trend in most selected stations, emphasizing the need for more **efficient solar panels to meet energy requirements from solar resources.**
- **Challenges and Solutions:**
  - **Increased aerosol load** (fine particles from carbon emissions, fossil fuel burning, and dust) and clouding contribute to the declining solar radiation.
  - **Aerosols absorb sunlight and deflect it** away from the ground, while dense clouds block sunlight.
  - **Installing more efficient solar panels** can mitigate the impact of reduced solar radiation.
- **India's Solar Goals:**
  - India aims to source nearly 500 GW (half of its electricity requirement) from non-fossil fuel sources by 2030.
  - Achieving this goal necessitates adding at least 280 GW of solar power capacity by 2030, which is a substantial increase from the current 81 GW installed capacity.
  - The challenge lies in accelerating solar capacity growth to bridge the gap.
- **About MAUSAM:**
  - MAUSAM, formerly known as the Indian Journal of Meteorology, Hydrology, and Geophysics, has been a premier scientific research journal since its launch in January 1950.
  - It focuses on climatology, particularly the troposphere, and covers topics related to monsoons and other atmospheric phenomena.

2. Working of Symbol Loading Unit in EVMs
GS 2 (Elections)



SLU, 'matchbox' that feeds EVM candidate info

Symbol Loading Units ensure EVMs can be used for voting. Underlining the sanctity of the election process, the SC has tightened norms for their use

DAMINI NATHA, RITIKA CHOPRA
NEW DELHI, APRIL 25

WHILE REJECTING the plea for 100% verification of Voter Verifiable Paper Audit Trail (VVPAT) slips against the Electronic Voting Machine (EVM) count, the Supreme Court on Friday directed the Election Commission of India (ECI) to "seal and secure" the Symbol Loading Unit (SLU) for 45 days after the declaration of election results.

Currently, only the three components of the EVM — the ballot unit, control unit, and VVPAT — are stored for 45 days after the results. This is the first time that SLUs, used to load a candidate symbol on the EVMs, will also be available for examination along with the EVMs if a candidate challenges the result by filing an election petition in court.

What is a Symbol Loading Unit (SLU) and how does it work?

Symbol Loading Units (SLUs) were introduced around the same time as VVPATs — a little over a decade ago.

VVPATs help voters verify their votes — they see a slip with a printed image of the party symbol they voted for.

But for the VVPAT to print a symbol correctly, information pertaining to the list of candidates and their symbols must be loaded on to the VVPAT machine in the correct order. This is where the Symbol Loading Unit, or SLU, comes in. In fact, the introduction of VVPATs necessitated the use of SLUs.

The SLU is used to load the symbols of the candidates onto the VVPAT. It is a matchbox-sized device that is first connected to a laptop or personal computer, from where a symbol loading application is used to load a bitmap file containing the candidates' names, serial numbers, and symbols.

The SLU is then connected to the VVPAT to transfer that file on to the paper audit machine. This is done under the supervision of a district election officer.

At which point in the election process are SLUs used?

The SLUs come into the picture only a few days before polling in a particular seat, when the EVMs are being commissioned and the final order of contesting candidates is decided and set on the ballot unit (the machine where you press the button next to the candidate which produces the paper audit trail of your vote).

Candidate-setting can happen at any time from the two days before voting at a seat. Once the SLU is used to load symbols onto the VVPAT, the EVM is ready for use. After this, the SLU is of no relevance to the actual voting process.

What happens to an SLU after symbols are loaded?

Typically, a small number of SLUs are enough to load symbols onto all VVPATs in a seat. According to ECI officials, it takes an SLU seven to eight minutes to load each VVPAT. Once the symbol-loading is complete, the SLUs are handed over to the concerned district election officer for safekeeping. They remain in the officer's custody until the day of vote-voting. Afterward, the SLUs are released to the engineers of the two EVM manufacturers, Bharat Electronics Ltd (BEL) or Electronics Corporation of India Ltd (ECIL), so they can be used to load symbols onto VVPATs for other seats in subsequent phases.

Thus, in a multi-phase election like the ongoing one for the 18th Lok Sabha, an SLU is typically reused after one phase of polling to load symbols onto EVMs meant for other seats in subsequent phases.

What has the SC said about the SLUs?

The court has said that the SLUs should be sealed and stored immediately after the symbol-loading process for a seat is complete. It must be stored for a period of 45 days after the declaration of results, or that a case be opened and examined like EVMs in case of an election petition.

This effectively means that an SLU used for loading symbols onto VVPATs for one seat can no longer be reused for other seats. Consequently, the ECI will need more SLUs. Sources said the Commission currently has about 1,000 SLUs, and will need an additional 2,000 to implement the SC's direction.

And what has the top court said about microcontrollers?

In an unprecedented move, the court has allowed candidates to seek verification of EVM software. This effectively means that a candidate can ask ECI officials to check the one-time programmable software in the B1 (Ballot Unit), C1 (Control Unit), and VVPAT for tampering, in case of any doubts regarding the result.

The verification involves inspecting the burnt memory/ microcontrollers of these three components. The court has proposed a formula for doing this: engineers from the EVM manufacturers will conduct checks on 5% of the EVMs per Assembly constituency or Assembly segment of a parliamentary constituency. Candidates must submit a written request within seven days of the announcement of results, and will have to bear the expenses of the process. This right to seek verification, however, is limited to those candidates who come in second or third. Engineers from the manufacturing companies will certify the authenticity and intactness of the memory/ microcontroller.

What happens if the microcontrollers, upon verification, are found tampered?

The court has only said that if any tampering is found, the candidate will be refunded the cost of verification. It has not said how the election result will be impacted.

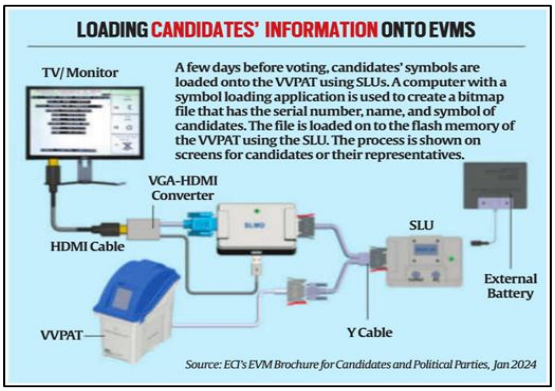
What changes on the ground?

Nothing changes for the voter. However, a lot changes in the way the ECI operates polling.

The ECI will now have to store SLUs for 45 days after voting. To reserve one SLU exclusively for one seat, it will need to order new SLUs. It will also have to ensure the verification of EVMs upon request from candidates who finish second or third, which may require additional manpower.

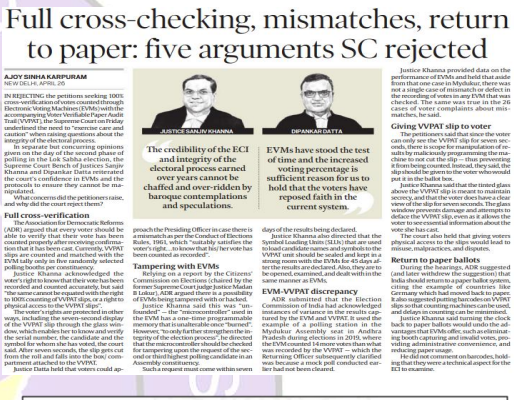
Also, the ECI will have to examine whether the Representation of the People Act of 1951 has to be amended. The election law currently states that an election petition challenging a result can be filed in court by a candidate within 45 days of the declaration of results. During this period, the EC machinery does not touch the EVMs. If these machines now need to be unsealed for verification purposes, the poll panel will have to determine how this can be accomplished.

- **At Which Point in the Election Process are SLUs Used?**
  - The SLUs come into the picture only a few days before polling in a particular seat, when the EVMs are being commissioned and the list/ order of contesting candidates is decided.
  - Candidate-setting can happen at any time from five to two days before voting at a seat.
  - Once the SLU is used to load symbols onto the VVPAT, the EVM is ready for use.
  - After this, the SLU is of no relevance to the actual voting process.
- **What Happens to an SLU After Symbols are Loaded?**
  - Typically, a small number of SLUs are enough to load symbols onto all VVPATs for a seat.
  - According to EC officials, it takes an SLU two to three minutes to load each VVPAT.
  - Once the symbol-loading is complete, the SLUs are handed over to the concerned district election officer for safekeeping.
  - They remain in the officer's custody until the day after voting.
  - Afterward, the SLUs are released to the engineers of the two EVM manufacturers, Bharat Electronics Ltd (BEL) or Electronics Corporation of India Ltd (ECIL), so they can be used to load symbols onto VVPATs for other seats in subsequent phases.
  - Thus, in a multi-phase election like the ongoing one for the 18th Lok Sabha, an SLU is typically reused after one phase of polling to load symbols onto VVPATs meant for other seats in subsequent phases.



3. Supreme Court Rejects Demand for 100% Verification of VVPAT Slips
GS 2 (Elections)

- **Why in News:**
  - The Supreme Court **rejected the demand for 100% verification** of Voter Verified Paper Audit Trails (VVPATs) in Indian elections.
  - The SC **also rejected a return to the earlier ballot paper system for elections** - something which opposition parties demanded in recent years.
- **A Timeline of Introduction of VVPATs in India:**
  - **Introduction and field trials**
    - The idea of the VVPAT machine first emerged in **2010**, when the Election Commission of India (ECI), held a meeting with political parties to discuss **how to make the EVM-based polling process more transparent.**
    - After a prototype was prepared, **field trials** were held in Ladakh, Thiruvananthapuram, Cherrapunjee, East Delhi, and Jaisalmer in **2011**.
  - **Approval of design**
    - After fine-tuning the design, holding more trials, and taking feedback from political parties, **an ECI expert committee approved the design in 2013.**
    - In 2013, **the Conduct of Elections Rules 1961** were amended to allow for a printer with a drop box to be attached to the EVM.
  - **Introduction of VVPAT**
    - **The VVPAT was used for the first time** in all 21 polling stations of the Noksen Assembly constituency of **Nagaland in 2013.**
    - After this, the ECI decided to introduce VVPATs in a phased manner and by (June) **2017**, there was **100% adoption of VVPATs**.
  - **Internal audit of VVPAT Slips**
    - In 2018, the ECI asked the **Indian Statistical Institute (ISI)** to come up with a mathematically sound and practically cogent sample size for the **internal audit** of the VVPAT slips with electronic result of EVMs.
    - On the basis of which, the ECI mandated the counting of VVPAT slips of one randomly selected polling station per Assembly constituency.
    - **This was increased to five polling stations per Assembly seat**, following a SC judgement in 2019.
    - The five polling stations are **selected by a draw of lots** by the Returning Officer concerned, in the presence of candidates/ their agents.


Full cross-checking, mismatches, return to paper: five arguments SC rejected

AJOY SINHA KARPURAM
NEW DELHI, APRIL 26

IN REJECTING the petitions seeking 100% cross-verification of votes counted through Electronic Voting Machines (EVMs) with the accompanying Voter Verifiable Paper Audit Trail (VVPAT), the Supreme Court on Friday underlined the need to "exercise care and caution" when raising questions about the integrity of the electoral process.

In separate but concurring opinions given on the day of the second phase of polling in the Lok Sabha election, the Supreme Court Bench of Justices Sanjiv Khanna and Dipankar Datta reiterated the court's confidence in EVMs and the protocols to ensure they cannot be manipulated.

What concerns did the petitioners raise, and why did the court reject them?

Full cross-verification

The Association for Democratic Reforms (ADR) argued that every voter should be able to verify that their vote has been counted properly after receiving confirmation that it has been cast. Currently, VVPAT slips are counted and matched with the EVM tally only in five randomly selected polling stations per Assembly.

Rejecting it, Justice Khanna alleged the voter's right to know that their vote has been recorded and counted accurately, but said "the same cannot be equated with the right to 100% counting of VVPAT slips, or a right to physical access to the VVPAT slips".

The voter's rights are protected in other ways, including the seven-second display of the VVPAT slip through the glass window, which enables her to know and verify the serial number, the candidate and the symbol for whom she has voted; the count of NOTA votes cast; and the mock poll data from the roll and falls into the box/ compartment attached to the VVPAT.

Justice Datta held that voters could approach the Presiding Officer in case there is a mismatch as per the Conduct of Elections Rules, 1961, which "suitably satisfies the voter's right... to know that his/ her vote has been counted as recorded".

Tampering with EVMs

Relying on a report by the Citizens' Commission on Elections (chaired by the former Supreme Court judge Justice Madan B Lokur), ADR argued there is a possibility of EVMs being tampered with or hacked.

Justice Khanna said this was "unfounded" — the "microcontroller" used in the EVM has a one-time programmable memory that is unalterable once "burned". However, "to only further strengthen the integrity of the election process", he directed that the microcontroller should be checked and verified by the Returning Officer of one and/or third highest polling candidate in an Assembly constituency.

Such a request must come within seven days of the results being declared.

Justice Khanna also directed that the Symbol Loading Units (SLUs) that are used to load candidate names and symbols to the VVPAT unit should be sealed and kept in a strong room with the EVMs for 45 days after the results are declared. Also, they are to be opened, examined, and dealt with in the same manner as EVMs.

EVM-VVPAT discrepancy

ADR submitted that the Election Commission of India had acknowledged instances of variance in the results captured by the EVM and VVPAT. It used the example of a polling station in the Mydukur Assembly seat in Andhra Pradesh during elections in 2019, where the EVM recorded 14 more votes than what was recorded by the VVPAT. The Returning Officer subsequently clarified was because a mock poll conducted earlier had not been cleared.

Justice Khanna provided data on the performance of EVMs and held that aside from that one case in Mydukur, there was not a single case of mismatch or defect in the recording of votes in any EVM that was checked. The same was true in the 26 cases of voter complaints about mismatches, he said.

Giving VVPAT slip to voter

The petitioners said that since the voter can only see the VVPAT slip for seven seconds, there is scope for manipulation of results by maliciously programming the machine to not cut the slip — thus preventing it from being counted. Instead, they said, the slip should be given to the voter who would put it in the ballot box.

Justice Khanna said that the tinted glass above the VVPAT slip is meant to maintain secrecy, and that the voter does have a clear view of the slip. He also said that the glass helps prevent voter damage and attempts to deface the VVPAT slip, even as it allows the voter to see essential information about the vote she has cast.

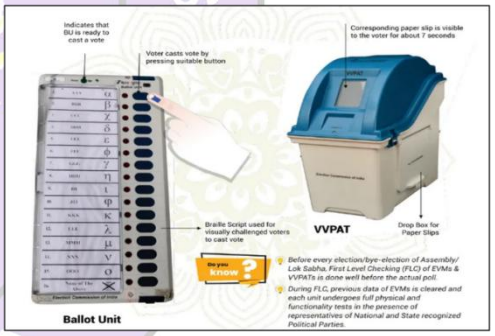
The court also held that giving voters physical access to the slips would lead to misuse, malpractices, and disputes.

Return to paper ballots

During the hearings, ADR suggested (and the petitioners agreed in rejoinder) that India should return to a paper ballot system, citing the example of countries like Germany which had moved back to paper. It also suggested putting barcodes on VVPAT slips so that counting machines can be used, and delays in counting can be minimised.

Justice Khanna said turning the clock back to paper ballots would undo the advantages that EVMs offer, such as eliminating booth capturing and invalid votes, providing administrative convenience, and reducing manpower.

He did not comment on barcodes, holding that they were a technical aspect for the ECI to examine.



- **What Have Been the Legal Cases Surrounding the VVPAT?**
  - **Subramanian Swamy vs ECI (2013):** The SC ruled that a paper trail was indispensable for free and fair elections, and ordered the government to provide funding for the roll-out of VVPATs.
  - **Chandrababu Naidu Case (2019):**
    - He moved the SC asking for a minimum 50% randomised VVPAT slips to be counted.
    - However, the ECI argued that this would **delay the election results by five to six days**, as it takes about an hour for election officers to match VVPAT slips with the EVM count in one polling station.
    - **The EC has also highlighted infrastructure challenges**, including the availability of manpower, as obstacles to increasing the number of polling booths where VVPAT slips are counted.
    - **Opposition parties argue** that the sanctity of a fair election outweighs the concern of delay in the declaration of results.
    - The court ordered the EC to count VVPATS in **five polling stations instead**.
- **What was the Recent VVPAT-EVM Tally Case?**
  - In 2023, the ADR had filed **a petition before the apex court** saying that to ensure free and fair elections, the tally from Electronic Voting Machines (EVMs)/ data on votes cast, should be cross-verified with the VVPATs.
    - The petition (along with other petitions) seeks **100% verification** of votes cast on EVMs using the VVPAT
  - To make sure that this process is carried out as fast as possible, **ADR suggested the use of barcodes on VVPAT slips.**

- **What has SC Ruled in the VVPAT-EVM Tally Case?**
  - The SC **rejected the demand for 100% verification** of VVPATs in Indian elections and **also rejected a return to the earlier ballot paper system for elections,** thus reposing faith in the electoral process.
  - However, the court issued **two directions and some suggestions** to the ECI in this regard, attempting to ensure that India's electoral process remains full proof.
  - **First direction:**
    - In a first, the court gave directions to the ECI **to seal and store the symbol loading units (SLUs)** for 45 days after declaration of results.
    - **SLUs** are memory units that are first connected to a computer to load election symbols onto it, and then used to enter symbols of the candidates on the VVPAT machines.
  - **Second direction:**
    - The SC has **enabled candidates to seek verification of the EVMs** - again a first.
    - The burnt memory in the EVM microcontroller must be checked by a team of engineers - after results are declared - if candidates (placed 2nd and 3rd in the election) make such a request **within 7 days of declaration of results**.
    - **The expenses for this verification will have to be borne by the candidate** and which would be refunded in case the EVM is found to be tampered with**.**
  - **Suggestion on VVPAT:**
    - The ECI may examine the suggestion that **VVPAT slips can be counted using a counting machine**, rather than by humans.
    - VVPAT slips could have a **barcode** printed on them, making it easier for machine counting.

4. Glacial Lake Expansion
GS 3 (Environment)

How ISRO used satellite remote-sensing to analyse glacial lakes in Himalayas

- **Why in News:** The Indian Space Research Organisation (ISRO) recently released a **satellite-data-based analysis** shedding light on the **expansion of glacial lakes** in the catchments of Indian Himalayan river basins. This analysis comes amidst growing concerns about the risks of **glacial lake outburst floods (GLOFs).**
- **Insights from ISRO's Analysis:**
  - ISRO's analysis, spanning four decades of satellite data from 1984 to 2023, revealed significant expansion in the size of glacial lakes within the Indian Himalayan region.
  - Out of the 2,431 lakes larger than 10 hectares identified during 2016-17, 676 glacial lakes had notably expanded since 1984, with 601 lakes more than doubling in size.
  - Approximately 130 of these expanded lakes are situated in India, particularly in the Indus, Ganga, and Brahmaputra river basins, a consequence of glaciers retreating due to global warming.
- **Risks and Challenges:**
  - Glacial lakes serve as vital freshwater sources for rivers but also pose risks, particularly GLOFs, which can result in sudden and severe flooding downstream.
  - Monitoring these lakes in the rugged Himalayan terrain is challenging, underscoring the importance of satellite remote-sensing technology for comprehensive monitoring and risk assessment.
- **Mitigation Strategies:**
  - The NDMA released guidelines on how to deal with disasters caused by GLOFs.
    - Identification and mapping of glacial lakes.
    - Using **Synthetic-Aperture Radar imagery** to automatically detect changes in water bodies, including new lake formations, during the monsoon months.
    - Methods could be developed to permit remote monitoring of lakes from space.
    - manage lakes structurally, decreasing the volume of water with methods like **controlled breaching, pumping or siphoning out water**, and making a tunnel through the moraine barrier or under an ice dam.
  - Studies have explored strategies like using long **High-Density Polyethylene (HDPE)** pipes to syphon off lake water, as demonstrated in initiatives like reducing water levels in **Sikkim's South Lhonak Lake.**
- **Formation of Glacial Lakes:**
  - Glacial lakes are primarily formed by the accumulation of meltwater in depressions created by glacier movement.
  - ISRO categorizes glacial lakes into following types based on their formation mechanisms:
    - moraine-dammed
    - ice-dammed
    - erosion-based, and others
- **Glacial Lake outburst**
  - When the boundary around unstable glacial lake breaks, and huge amounts of water rush down the side of the mountains, which could cause flooding in the downstream areas.
  - This is called glacial lake outburst floods or GLOF.
  - **Factors causing GLOF:** earthquakes, extremely heavy rains, landslides and ice avalanches.

- **South Lhonak Lake**
  - South Lhonak Lake is a **glacial-moraine-dammed lake**, located in Sikkim's far northwestern region.
  - The lake is located at **5,200 m (17,100 ft)** above sea level.
  - It formed due to the melting of **the Lhonak glacier.**

5. IRDAI prices Bima Vistaar at Rs 1,500 per policy
GS 3 (Economy)

BASIC COVER OF ₹2 LAKH FOR LIFE, HEALTH, ACCIDENT & PROPERTY

All-in-one insurance product: Irdai prices Bima Vistaar at ₹1,500/policy

GEORGE MATHEW
MUMBAI, APRIL 25

THE INSURANCE Regulatory and Development Authority of India (IRDAI) has proposed to price Bima Vistaar, its ambitious all-in-one affordable mass product aimed at the rural areas of the country, at Rs 1,500 per policy.

The regulator made an announcement regarding the launch of Bima Vistaar and its price at a meeting with the managing CEOs, addressed by IRDAI chairman Debasish Panda on Thursday. The product is designed to provide a basic social safety net cover with combined features of life, health, personal accident, and property insurances. The product includes life cover with a premium of Rs 820, health cover at Rs 500, personal accident cover at Rs 100 and property cover at Rs 80. If taken for the entire family on a floater basis, the policy will cost Rs 2,420, with an additional Rs 900 charged for the rest of the family members.

The sum assured for life, personal accident and property covers is Rs 2 lakh each, while the health cover, known as hospi cash, offers a sum assured of Rs 500 for 10 days, with a maximum amount of Rs 5,000 available without producing bills or documents. Agents selling Bima Vistaar policies stand to earn a commission of 10 per cent, incentivising wider distribution and adoption of the product.

Debasmanda Bharitnwal, Vice President at Insurance Brokers Association of India (IBAI), said the comprehensive coverage offered by the Bima Vistaar policy underscores its importance in safeguarding individuals and families against various risks and uncertainties. "This initiative not only encourages more people to invest in insurance for their protection but also promotes financial inclusion," he said.

In the financial year 2022-23 (FY23), India's overall insurance penetration was down at 4 per cent from the level of 4.2 per cent in FY22, according to Swiss Re Sigma report. This is much below the global insurance penetration of 6.8 per cent. In FY23, the insurance density in India increased from $91 in FY22 to $92.

"The competitive pricing of Bima Vistaar is expected to benefit many individuals and families by providing them with a reliable insurance solution at a reasonable cost. In addition to applauding IRDAI's commendable initiative with Bima Vistaar, we also encourage the insurance companies and agreeable intermediaries to effectively promote and sell these products," Bharitnwal said. Insurers said the claim settlement for the property part of the combo solution will be on parametric basis, which means any payout is based on the magnitude of the losses. Insurers will have at least one Bima Vahak, who will visit every house in their area and convince them about the product.

"By leveraging the expertise and reach of intermediaries, such as brokers, agents, and insurance advisors, we can ensure that Bima Vistaar reaches its full potential in reaching and serving the diverse needs of our population," Bharitnwal said.

As Bima Vistaar is considered a micro insurance product, increasing insurance penetration in the country, it is expected that unlike micro insurance products, it will generate a large sales volume. Now that the premium has been decided, it will be possible to do a cost benefit analysis of the product for its long-term sustainability.

Agents selling Bima Vistaar policies stand to earn a commission of 10%. FILE

- **Why in News:** The Insurance Regulatory and Development Authority of India (IRDAI) has proposed to price Bima Vistaar at Rs 1,500 per policy. Bima Vistaar is an ambitious all-in-one affordable **mass product** aimed at the rural areas of the country.
- **Insurance penetration in India – Statistics**
  - In the financial year 2022-23 (FY23), India's overall insurance penetration was down at **4 per cent** from the level of 4.2 per cent in FY22.
    - This is much below the global insurance penetration of 6.8 per cent.
  - As per IRDAI, the **insurance density increased from $78 in 2020-21 to $91 in 2021-22.**In FY23, it increased to $92.
    - Insurance density is a key measure of a country's insurance sector development.
    - It is calculated by dividing the total insurance premium by the total population of a country.
- **Bima Vistaar**
  - **Background**
    - To further boost the growth towards achieving the objective of insurance for all, **IRDAI has been working on the concept of Bima Trinity.**
      - Bima Trinity is the result of the initiative by IRDAI in late 2022 in setting up a committee to explore and recommend on how to bring about synergies in the working and operations of insurance companies.
    - Bima Trinity initiative consists of 3 programs: **Bima Sugam, Bima Vistaar, and Bima Vahak**.
      - **Bima Sugam** -An online marketplace that allows customers to compare and purchase policies, settle claims, and renew policies.
      - **Bima Vahak** -A women-centric workforce operating at the Gram Sabha level to educate and convince women about the benefits of comprehensive insurance, particularly Bima Vistaar.
  - **About Bima Vistaar**
    - It is a **bundled policy** that covers **life, health, property, and accidents**.
    - It provides defined benefits for each risk category, ensuring quick claim payouts without surveyors.
    - As a social safety net product, Bima Vistaar targets the untapped geographies.
  - **Features of Bima Vistaar**
    - The product Bima Vistaar includes:
      - life cover with a premium of Rs 820,
      - health cover at Rs 500,
      - personal accident cover at Rs 100 and
      - property cover at Rs 80.
    - If taken for the entire family on a floater basis, the policy will cost Rs 2,420, with an additional Rs 900 charged for the rest of the family members.
    - The sum assured for life, personal accident and property covers is Rs 2 lakh each.
    - The health cover, known as hospi cash, offers a sum assured of Rs 500 for 10 days, with a maximum amount of Rs 5,000 available without producing bills or documents.
  - **Significance**
    - Bima Vistaar policy underscores its importance in safeguarding individuals and families against various risks and uncertainties.
    - This initiative not only encourages more people to invest in insurance for their protection but also promotes financial inclusion.
    - The competitive & reasonable pricing of Bima Vistaar is expected to benefit many individuals and families.
- **Conclusion**
  - By leveraging the expertise and reach of intermediaries, such as brokers, agents, and insurance advisors, Bima Vistaar has potential to reach and serve the diverse needs of Indian population. It is expected that unlike micro insurance products, it will generate a large sales volume. Now that the premium has been decided, it will be possible to do a cost benefit analysis of the product for its long-term sustainability

6. Small Finance Banks (SFBs)
GS 3 (Economy)

SFBs should be worth ₹1,000 cr to become universal banks, says RBI

ENS ECONOMIC BUREAU
MUMBAI, APRIL 26

THE RESERVE Bank of India (RBI) has said small finance banks (SFBs) should have a minimum net worth of Rs 1,000 crore to become universal banks in accordance with the on-tap licensing norms.

According to the central bank, SFBs aspiring to become a universal bank need to have scheduled status with a satisfactory track record of performance for a minimum period of five years. Also, the shares of the bank should have been listed on a recognised stock exchange, the RBI said in a circular.

Further, these SFBs also need to have a net profit in the last two financial years besides having gross non-performing assets (GNPA) and net non-performing assets (NNPA) of less than or equal to three per cent and one per cent, respectively in the last two financial years, the RBI said.

On April 12, the RBI rejected applications received from Dvara Kshetriya Gramin Financial Services Pvt Ltd and Tally Solutions Pvt Ltd to start SFBs in the private sector. The two entities had applied to the RBI for setting up a SFB in 2021 under the guidelines for on-tap licensing.

The RBI circular said there is no mandatory requirement for an eligible SFB to have an identified promoter. However, the existing promoters of the eligible SFB, if any, should continue as the promoters on transition to a universal bank. "Addition of new promoters or change in promoters will not be permitted for an eligible SFB while transitioning to the universal bank," it said. There should be no new mandatory lock-in requirement of minimum shareholding for existing promoters in the transitioned universal bank.

"There should be no change to the promoter shareholding dilution plan already approved by the Reserve Bank," it said.

"The eligible SFBs having diversified loan portfolio will be preferred," the RBI said.

TO TURN INTO A REGULAR BANK

- Need to have scheduled status with a satisfactory track record of performance for a minimum period of five years
- The shares of the bank should have been listed on a recognised stock exchange

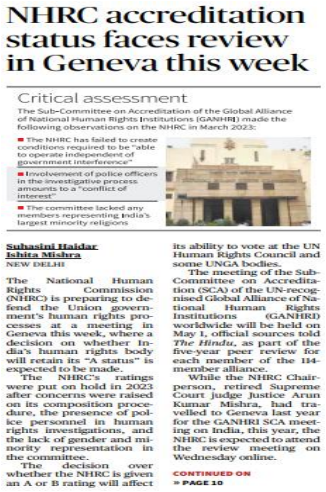
- **Why in News:** The Reserve Bank of India (RBI) recently introduced new rules governing the conversion of **Small Finance Banks (SFBs)** into **Universal Banks**, signaling a significant shift in the banking landscape. The "Guidelines for **'on-tap' Licensing** of SFBs in Private Sector" provide a transition path for SFBs to become universal banks.
- **Eligibility Conditions:**
  - Under the new guidelines, only listed SFBs meeting specific eligibility criteria are eligible to apply for a universal banking license. These criteria include-
    - minimum net worth of Rs 1,000 crore
    - scheduled status
    - satisfactory track record of at least five years
  - **Gross non-performing assets (NPAs):** Additionally, aspiring SFBs must demonstrate profitability, maintaining gross non-performing assets (NPAs) of less than 3% and net NPAs of less than 1% in the preceding two financial years.
  - **Capital adequacy**: They are also required to comply with prescribed capital adequacy norms and furnish a comprehensive rationale for their transition.
- **About Small Finance Bank**

- The concept of SFBs was laid down by **Raghuram Rajan Committee.**
- **Objective:** To provide banking services to small and marginal enterprise farmers, low-income households, and other weaker sections of the society having limited access to basic banking services.
- **SFBs** are operational under the regulation of the RBI in India, under the purview of the apex bank's **Banking Ombudsman Scheme, 2006**, as amended from time to time.
- **Registered as:** Public limited companies under the **Companies Act, 2013**
- **Governed by:** Banking Regulations Act, 1949; RBI Act, 1934 and other relevant Statutes and Directives from time to time.
- **Services:** Savings Accounts, Current Accounts, Fixed Deposits, Recurring Deposits, Loans, etc.

Comparison Parameter	Small Finance Bank	Commercial Bank
Target Customer	Underserved and unbanked segments of the population, like small businesses, MSMEs, and marginal farmers.	Wider consumer base including large corporates, SMEs, and retail customers.
Services Offered	Savings accounts, fixed deposits, recurring deposits, digital banking, debit cards, and so on.	Apart from basic banking services, a wide range of financial services are offered including credit cards, wealth management, corporate banking services, etc.
Minimum Capital Requirement	Rs 200 crores	Rs 500 crores
Loan Products	Microfinance loans, small personal loans, micro-business loans, and loans to marginal farmers and industries.	Large corporate loans, housing loans, personal loans, etc.

29th April, 2024

1. National Human Rights Commission (NHRC)
GS 2 (Governance)


NHRC accreditation status faces review in Geneva this week

Critical assessment

The Sub-Committee on Accreditation of the Global Alliance of National Human Rights Institutions (GANHRI) made the following observations on the NHRC in March 2023:

- The NHRC has failed to create conditions required to be "able to operate independent of government interference"
- Involvement of police officers in the investigative process amounts to a "conflict of interest"
- The committee lacked any members representing India's largest minority religions

Suhasini Haidar
Ishita Mishra
NEW DELHI

The National Human Rights Commission (NHRC) is preparing to defend the Union government's human rights processes at a meeting in Geneva this week, where a decision on whether India's human rights body will retain its "A status" is expected to be made.

The NHRC's ratings were put on hold in 2023 after concerns were raised on its composition procedure, the presence of police personnel in human rights investigations, and the lack of gender and minority representation in the committee.

The decision over whether the NHRC is given an A or B rating will affect its ability to vote at the UN Human Rights Council and some UNGA bodies.

The meeting of the Sub-Committee on Accreditation (SCA) of the UN-recognised Global Alliance of National Human Rights Institutions (GANHRI) worldwide will be held on May 1, official sources told *The Hindu*, as part of the five-year peer review for each member of the 114-member alliance.

While the NHRC Chairperson, retired Supreme Court judge Justice Arun Kumar Mishra, had travelled to Geneva last year for the GANHRI SCA meeting on India, this year, the NHRC is expected to attend the review meeting on Wednesday online.

CONTINUED ON » PAGE 10

- **Why in News:** The **National Human Rights Commission (NHRC) of India** faces a critical juncture as its accreditation status at the **Global Alliance of National Human Rights Institutions (GANHRI)** is under review in **Geneva.** The decision, expected to be made at a meeting of the Sub-Committee on Accreditation (SCA), will determine whether NHRC retains it's "A status" or faces a downgrade to "B status".

- **About NHRC**
  - **Set up in:** 1993
  - **Headquarters:** Delhi
  - **Type:** Autonomous bodies (created by an Act of Parliament)
  - The National Human Rights Commission (NHRC) of India operates under the **Protection of Human Rights Act (PHRA) 1993**, which was later amended by the **Protection of Human Rights (Amendment) Act, 2006.**
  - The NHRC follows the **Paris Principles**, which were established at an international workshop in Paris in October 1991 These principles were endorsed by the **United Nations General Assembly in December 1993.**
  - The NHRC reflects India's commitment to promoting and safeguarding human rights.
  - According to **Section 2(1)(d) of the PHRA**, human rights include the rights related to life, freedom, equality, and dignity of individuals. These rights are protected by the Constitution and international agreements, and they can be enforced by Indian courts.
  - **Composition:** Chairperson, five full-time Members, and seven deemed Members.
  - **Concerns:**
    - NHRC's accreditation status was put on hold in 2023 due to concerns regarding its composition procedure, including the presence of police personnel in human rights investigations, and the lack of gender and minority representation.

- **About GANHRI**
  - In 1993, **National Human Rights Institutions (**NHRIs) established the International Coordinating Committee of NHRIs (ICC) to coordinate the activities of the **NHRI network.**
  - In 2016, ICC changed its name into **Global Alliance of National Human Rights Institutions (GANHRI).**
  - It is the global alliance of NHRIs, mandated to support in all regions the establishment and strengthening of NHRIs, in line with the **United Nations Paris Principles.**
  - The **Sub-Committee on Accreditation (SCA)** of GANHRI has the mandate to review and analyze accreditation applications and to make recommendations to the GANHRI Bureau on the compliance of applicants with the **Paris Principles.**

2. Raja Ravi Varma's Indulekha Painting
GS 1 (Art and Culture)

Palace to unveil true copy of Ravi Varma's Indulekha

A rare treasure: Indulekha emerged in the public domain in 2022.

The Hindu Bureau
THIRUVANANTHAPURAM

The first true copy of the painting *Indulekha* by legendary artist Raja Ravi Varma will be unveiled at the Kilimanoor Palace, where the artist was born in 1848, on the occasion of his 176th birth anniversary celebrations.

The unreleased painting of *Indulekha*, the protagonist of the first modern novel in Malayalam literature by O. Chandu Menon published in 1889, emerged in the public domain in 2022 and evoked a great sense of enthusiasm among the art fraternity.

Rama Varma Thampuran, secretary of the Kilimanoor Palace Trust, which looks after the upkeep of the Chitrashala (studio) of the iconic artist at the palace, said the trust had initially planned to unveil the original painting on the occasion of his birth anniversary.

However, taking note of the security aspects, the trust decided to unveil the lone true copy of the painting.

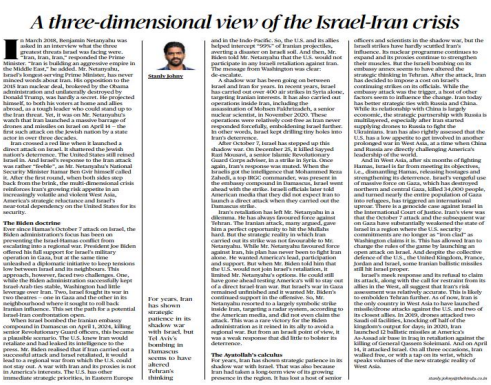
Sasikala Parakkal, who owns the painting, will unveil the copy at a function at the palace on Monday. It is believed that the famous painting *Reclining Lady* by Ravi Varma was modelled on *Indulekha*. The oil painting has Indulekha holding a letter addressing her lover Madhavan, the hero of the novel, as 'Dear Madhavan ...' dated 1892.

The 19th Century painting with an over-the-top sense of symmetry and keen attention to micro-details was restored by Madhan S. of the Heritage Conservation and Research Academy.

The portrait of a late member of the palace, Pooyam Thirunal C.R. Kerala Varma, by another member of the palace K. Ravi Varma, and paintings of C. Rajaraja Varma and Mangala Bayi, siblings of Raja Ravi Varma, by artist Suresh will also be dedicated on the occasion. The event will be inaugurated by O.S. Ambika, MLA.

- **Why in News:** On the occasion of the 176th birth anniversary celebrations of Raja Ravi Varma, the first true copy of his painting Indulekha has been unveiled at the Kilimanoor Palace.
- **About Raja Ravi Varma**
  - Kilimanoor-born Raja Ravi Varma (1848-1906) is known to be one of the leading figures in the history of modern art in India.
  - **His depictions of the Hindu gods and goddesses** went on to influence their portrayal in art and cinema for years.
  - He invented the first **oleograph press**, which he set up in **Ghatkopar in Mumbai**. This gave rise to a massive production of prints of oil paintings.
  - Raja Ravi Varma was closely related to the **royal family of Travancore** of present-day Kerala state in India.
- **The Indulekha Painting:**
  - Raja Ravi Varma's famous painting 'Reclining Lady' is believed to have been modelled on Indulekha.
  - Indulekha was a character from the **first modern novel** in **Malayalam literature by O. Chandu Menon**.
  - The painting portrays Indulekha holding a letter addressed to her lover, Madhavan, dating back to 1892.
  - Its emergence in the public domain in 2022 sparked widespread excitement within the art community.
  - The 19th-century painting showcases Raja Ravi Varma's mastery in capturing emotions and narratives through his artistry.

3. A three-dimensional view of the Israel-Iran crisis
GS 2 (International Relations)


A three-dimensional view of the Israel-Iran crisis

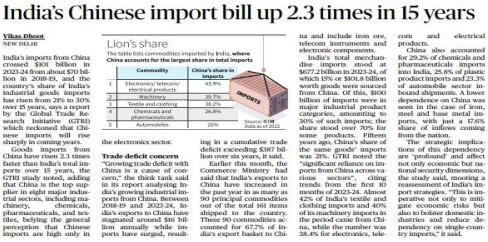
- **Why in News:** Recent developments in the **Middle East** have highlighted escalating tensions between Israel and Iran, marked by an unprecedented direct attack by Iran on Israel and subsequent responses.
- **Netanyahu's Dilemma:**
  - **Undermined strategy:** Despite Netanyahu's longstanding opposition to Iran and projection of toughness, Iran's recent direct attack on Israel has undermined Israel's deterrence strategy.
  - **Weak response:** The Biden administration's reluctance to support Israeli retaliation against Iran further limited Netanyahu's options, leaving him with a weak response that did little to bolster Israeli deterrence.
  - **Strategic reality:** Netanyahu's preference for force against Iran was tempered by the strategic reality, where Israeli military actions needed U.S. support and participation.
- **The Ayatollah's Calculus:**
  - **Iran's strategic patience** in its shadow war with Israel has shifted with recent developments, including improved ties with Russia and China and perceived weaknesses in Israel's regional position.
  - **The bombing of Iran's embassy** annex triggered Iran's decision to impose a cost on Israel's strikes on its officials, marking a change in Tehran's strategic thinking.
  - **Iran's assessment of a reduced U.S. appetite** for prolonged conflict in the Middle East, coupled with its strategic partnerships and perceived vulnerabilities in Israel's position, emboldened Tehran to launch a direct attack on Israel.

4. Inequality can no longer be ignored
GS 2 (Social Issues)

Inequality can no longer be ignored

- **Why in News:** The Congress party's **Nyay Patra** manifesto has sparked a **debate on inequality and wealth redistribution in India**, coinciding with rising concerns over economic disparities.
- **Wealth Redistribution and Taxation:**
  - **Inequality in India:** The World Inequality database found that in 2022-23, 22.6% of the national income went to the top 1%, the highest ever since 1922. Wealth inequality is even more stark with the top 1% population having 40.1% share in wealth.
  - **Low tax-GDP ratio and regressive tax structure:** India not only has a low tax-GDP ratio compared to other middle-income countries but also a regressive taxation structure, where indirect taxes contribute to almost two-thirds of all tax revenue collection. Furthermore, even direct taxes are not very progressive.
  - **Spending** on welfare and the social sector is very low compared to other countries.
- **Employment-Centred Growth and Social Spending:**
  - **Job creation and equitable growth:** The focus extends to questioning the nature of economic growth, emphasizing the need for job creation and equitable growth that benefits all segments of society.
  - **Required measures:** Governments must prioritize job creation through direct employment schemes, bolstering public services in health, education, and social security to reduce unemployment and enhance human development outcomes.
  - **Employment-centered growth**: To address inequality in earnest, the government must focus on employment-centered growth pattern.

5. India's Trade Relationship with China
GS 3 (Economy)


India's Chinese import bill up 2.3 times in 15 years

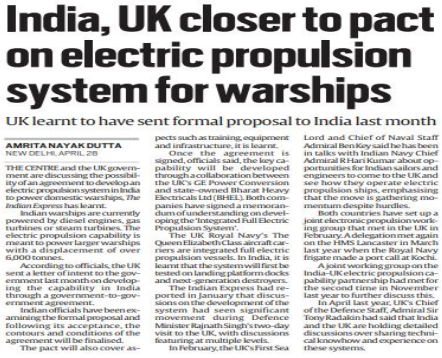
- **Why in News:**
  - India's imports from China crossed $101 billion in 2023-24 from about $70 billion in 2018-19. Also, China's share of India's industrial goods imports has risen from 21% to 30% over 15 years.
  - According to the Global Trade Research Initiative (GTRI), which released the above-mentioned data, **Chinese imports to India will rise sharply in coming years**.
- **India – China Trade Relationship:**
  - Since beginning of the last decade, bilateral trade between the two countries recorded exponential growth.
  - From 2015 to 2022, India-China bilateral trade grew by 90.14%, an average yearly growth of 12.87%.
  - In 2022, the **overall trade with China increased by 8.47% year on year to reach $ 136.26 billion**, crossing the $ 100 billion mark for a second time in a row.
  - **Trade Deficit**:
    - The **trade deficit came at $101.28 billion**, in China's favour, as India's imports from China witnessed an increase by 118.77% to reach $118.77 billion.
    - Meanwhile, **India's exports to China decreased by 37.59% year on year to reach $17.49 billion**.

- **Reasons for India's Trade Deficit w.r.t. China**:
  - The growth of trade deficit with China could be attributed to two factors:
    - **Narrow basket of commodities**, mostly primary, that we export to China and
    - **Market access impediments** for most of our agricultural products and the sectors where we are competitive in, such as pharmaceuticals, IT, etc.
  - **Our predominant exports have consisted of iron ore, cotton, copper, aluminium and diamonds/ natural gems**.
    - Over time, these raw material-based commodities have been over-shadowed by Chinese exports of machinery, power-related equipment, telecom equipment, organic chemicals, and fertilizers.
- **Bilateral Investments**:
  - According to the Ministry of Commerce of China, Chinese investments to India in the year of 2021 was $63.18 million.
  - On the other hand, Indian investment into China for the year 2021 was $6.32 million.

- **Other Economic & Commercial Issues Between India and China:**
  - **Cooperation in the Petroleum Sector**:
    - India and China are working on the areas of cooperation in the petroleum sector to leverage upon the sheer size of the market of two countries.
    - The Petroleum Secretary visited Beijing in October 2018 followed by visit of Vice Minister of NEA to New Delhi in February 2019 and September 2019.
    - Constitution of a JWG and draft MOU on cooperation is under consideration.
    - However, there has been no progress on this since onset of COVID-19.
  - **Double Taxation Avoidance Agreement (DTAA)**:
    - India and China signed the DTAA on 18 July 1994 and the Agreement came into force on 21 November 1994.
    - Both the countries agreed to revise the DTAA in its entirety and the revised DTAA was signed in May 2018.
  - **Social Security Agreement**:
    - With the steady increase in number of personnel/professionals that are being employed both in India and China.
    - The Social Security Agreement assumes important role.
    - India shared a draft SSA to Chinese side in October 2016.
    - However, there is a divergence as far as 'Totalisation' clause is concerned.
  - **Bilateral Investment Treaty**:
    - India has sent notice to China to terminate the Bilateral Investment Promotion Agreement and proposed initiation of negotiations on Bilateral Investment Treaty.
    - Subsequently, India has taken a position that instead of signing a separate BIT with China, we may cover this under the chapter on Investment in RCEP.
    - However, **following India's decision to not join the RCEP, the issue has not been taken up with the Chinese side**.
- **India's imports from China crossed $101 billion:**
  - The Global Trade Research Initiative (GTRI), a think-tank, has recently published a report discussing India's Trade Relationship with China.
  - As per the report. India's imports from China crossed $101 billion in 2023-24 from about $70 billion in 2018-19.
  - China is the top supplier in eight major industrial sectors, including machinery, chemicals, pharmaceuticals, and textiles.
  - **India's total merchandise imports stood at $677.2 billion in 2023-24, of which 15% or $101.8 billion worth goods were sourced from China**.
    - Of these, $100 billions of imports were in major industrial product categories, amounting to 30% of such imports, and that share stood over 70% for some products.
    - Fifteen years ago, China's share of the same goods' imports was 21%, the study said.
  - China also accounted for 29.2% of chemicals and pharmaceuticals imports into India, 25.8% of plastic product imports and 23.3% of automobile sector inbound shipments.
  - A lower dependence on China was seen in the case of iron, steel and base metal imports, with just 17.6% share of inflows coming from the neighboring nation.
  - The report suggests that Chinese imports will continue to rise sharply in the coming years.
- **Strategic Implications of This Dependency:**
  - The strategic implications of this dependency are 'profound' and affects not only economic but national security dimensions.
  - This is imperative not only to mitigate economic risks but also to bolster domestic industries and reduce dependency on single-country imports, especially from a geopolitical competitor like China.
  - As per the study, India had exported $10 billion worth of goods to China in 2005, and enjoyed a trade surplus with its neighbor between 2003 and 2005.
  - After 2005, Chinese goods dominated trade flows, steadily magnifying the trade deficit for India.

6. <u>Development of Electric Propulsion System For Indian Warships</u>
<u>GS 3 (Science and Tech)</u>

- **Why in News:** The recent discussions between the **Centre and the UK government** regarding the development of an **electric propulsion system** in India to power domestic warships mark a significant milestone in India's maritime capabilities.
- **Significance of the Agreement**
  - Currently, Indian warships **rely on diesel engines, gas turbines, or steam turbines** for propulsion. The shift towards electric propulsion, especially for larger warships exceeding **6,000 tonnes displacement**, signifies a strategic leap in naval operations.
  - Electric propulsion harnesses electrical power to drive propeller blades, offering enhanced efficiency and maneuverability.
  - t promises to revolutionize ship navigation, reduce carbon footprint, and augment electric power availability, thereby enhancing overall operational effectiveness.
- **Impact on Maritime Security and Defense**
  - **Strengthened security posture:** The adoption of electric propulsion technology is poised to strengthen India's maritime security posture by equipping its warships with **cutting-edge propulsion systems**.
  - **Enhanced maneuverability and operational efficiency** offered by electric propulsion will bolster the country's naval capabilities, enabling swift response to evolving threats and challenges in the maritime domain.



India, UK closer to pact on electric propulsion system for warships

UK learnt to have sent formal proposal to India last month

AMRITA NAYAK DUTTA
NEW DELHI, APRIL 28

THE CENTRE and the UK government are discussing the possibility of an agreement to develop an electric propulsion system in India to power domestic warships, *The Indian Express* has learnt.

Indian warships are currently powered by diesel engines, gas turbines or steam turbines. The electric propulsion capability is meant to power larger warships with a displacement of over 6,000 tonnes.

According to officials, the UK sent a letter of intent to the government last month on developing the capability in India through a government-to-government agreement.

Indian officials have been examining the formal proposal and following its acceptance, the contours and conditions of the agreement will be finalised.

The pact will also cover aspects such as training, equipment and infrastructure, it is learnt.

Once the agreement is signed, officials said, the key capability will be developed through a collaboration between the UK's GE Power Conversion and state-owned Bharat Heavy Electricals Ltd (BHEL). Both companies have signed a memorandum of understanding on developing the 'Integrated Full Electric Propulsion System'.

The UK Royal Navy's The Queen Elizabeth Class aircraft carriers are integrated full electric propulsion vessels. In India, it is learnt that the system will first be tested on landing platform docks and next-generation destroyers.

The Indian Express had reported in January that discussions on the development of the system had seen significant movement during Defence Minister Rajnath Singh's two-day visit to the UK, with discussions featuring at multiple levels.

In February, the UK's First Sea Lord and Chief of Naval Staff Admiral Ben Key said he has been in talks with Indian Navy Chief Admiral R Hari Kumar about opportunities for Indian sailors and engineers to come to the UK and see how they operate electric propulsion ships, emphasising that the move is gathering momentum despite hurdles.

Both countries have set up a joint electronic propulsion working group that met in the UK in February. A delegation met again on the HMS Lancaster in March last year when the Royal Navy frigate made a port call at Kochi.

A joint working group on the India-UK electric propulsion capability partnership had met for the second time in November last year to further discuss this.

In April last year, UK's Chief of the Defence Staff, Admiral Sir Tony Radakin had said that India and the UK are holding detailed discussions over sharing technical knowhow and experience on these systems.

- **Self-reliance in defense manufacturing**: The collaboration with the UK underscores India's commitment to leveraging international partnerships for technological advancement and indigenous defense production, aligning with the broader goal of self-reliance in defense manufacturing.
- **Stability:** By harnessing innovative technologies and fostering strategic partnerships, India is poised to emerge as a formidable maritime power, capable of safeguarding its maritime interests and contributing to regional stability in the **Indo-Pacific region.**

- **Key-details of the Agreement:**
  - **Aim:** to foster collaboration between the Indian and UK navies for the development of electric propulsion capability in India.
  - **Other aspects of the pact:** Training, equipment procurement, and infrastructure development, to ensure a comprehensive approach towards building indigenous electric propulsion capabilities.
  - The partnership entails collaboration between **UK's GE Power Conversion** and **India's Bharat Heavy Electricals Ltd (BHEL)** for the development of the 'Integrated Full Electric Propulsion System'.
  - Notably, the UK Royal Navy's Queen Elizabeth Class aircraft carriers serve as models for integrated full electric propulsion vessels.

7. Drugs worth Rs 600 crore seized from Pakistani boat
GS 2 (International Relations)

- **Why in News:**
  - The Indian Coast Guard (ICG) seized 86 kg of suspected heroin worth Rs 602 crore from a Pakistani boat which was on its way to Sri Lanka via Tamil Nadu.
  - The drugs were seized off the Porbandar coast in Gujarat during a joint ICG operation with the Anti-Terrorist Squad (ATS) and the Narcotics Control Bureau (NCB).
  - The action was undertaken as part of Operation Sagarmanthan series that aims to make India drug-free.

86kg heroin seized from Pak boat off Gujarat

14 crew onboard vessel on way to Sri Lanka taken in custody; joint operation by coast guard, ATS, NCB

EXPRESS NEWS SERVICE
AHMEDABAD, APRIL 28

THE INDIAN Coast Guard (ICG) seized 86 kg of suspected heroin worth Rs 602 crore from a Pakistani boat, which was on its way to Sri Lanka via Tamil Nadu, off the Porbandar coast in Gujarat and arrested 14 crew members on Sunday.

The drugs were seized during a joint ICG operation with the Anti-Terrorist Squad (ATS) and the Narcotics Control Bureau (NCB) during which the Indian side opened fire injuring one of the crew members.

According to an official release, ATS Superintendent of Police KK Patel received information that Haji Aslam alias Babu Balochi, a drug operative from Pakistan, would be sending a boat named 'Alraza' from the Karachi harbour to deliver narcotic substances like heroin and methamphetamine in the intervening night of April 25 and 26 near the International Maritime Boundary Line (IMBL) off Porbandar. "The said contraband would be delivered to a dhow from Tamil Nadu to be further delivered to Sri Lanka-based drug operatives," the release stated.

Later, the joint team of Gujarat ATS and ICG identified a suspicious vessel in the Indian waters 180 nautical miles off Porbandar. "The Indian Coast Guard and Gujarat ATS team that had tried to board the vessel for checking was obstructed by the crew of the suspect boat and to restrain the crew and to stop the fleeing vessel, firepower was used in which one member of the crew of the vessel sustained bullet injuries," the ATS stated.

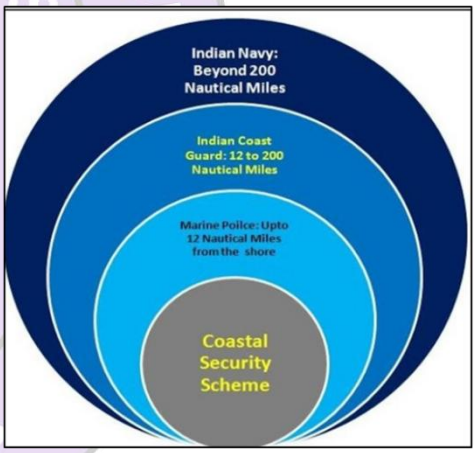
A search on the suspect fishing boat, which was carrying 14 crew members – all Pakistan nationals, revealed contraband material. This is the biggest Narcotic drugs and psychotropic substance seizure in the country during the current Lok Sabha Elections, said the official statement.

All the 14 accused are residents of Lasbela in Pakistan's Balochistan. The master of the boat, 62-year-old Nazir Hussain Azam Khan who suffered the bullet injury, was evacuated for further medical care. He has been operated upon and is currently stable. Meanwhile, the boat and its crew members are being brought to Porbandar for further probe.

This is the second operation this week after the NCB and ATS seized mephedrone and other chemical drugs worth Rs 300 crore from laboratories in Rajasthan and Gujarat.

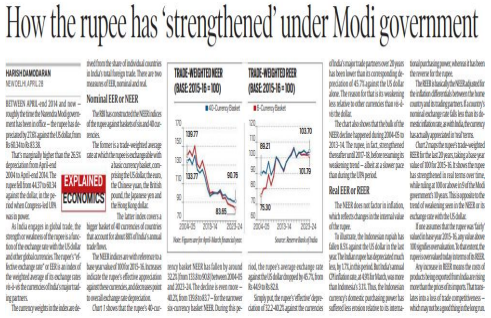
Indian Coast Guard ship Rajratan (left) sails ahead of a seized Pakistani boat. PTI

- **Importance of maritime security**
  - **Maritime security of vast coastlines**
    - India has along 7,516-km coastline, including island territories, and a 2 million sq km Exclusive Economic Zone.
    - The importance of maritime security was evident following the 26/11 Mumbai terror attack.
  - **Economic and energy security**
    - 95% of India's trade by volume and 70% by value transit through the seas.
    - Strengthening the country's maritime security is also necessary as India is focusing on becoming a blue economy.
    - The Indian government is set to clear the Deep Ocean Mission for the blue water economy.
  - **Geostrategic Need**
    - China is penetrating into the Indian Ocean through Pakistan and Myanmar.
    - Enhanced maritime security will give a boost to India's SAGAR (Security and Growth of All in the Region) doctrine.
      - Under this doctrine, India has envisioned a role of net security provider for itself in the IOR.



- **Mechanisms to ensure maritime security**
  - Coastal border management was institutionalised in 2004 with the establishment of the Department of Border Management in the MHA.
  - However, after the '26/11' attacks, coastal and maritime security underwent a paradigm shift. These included:
    - A **three-tier security grid** the **Indian Navy, the coast guard, and the marine police;**
    - **Increased electronic surveillance** using Coastal radar chain, Automatic identification system (AIS), Vessel traffic management and information system
    - Establishment the National Command Control Communication and Intelligence (NC3I) Network;
    - **Sagar Prahari Bal** for protecting of naval bases has been raised by Navy;
    - Establishment of **Information Fusion Centre – Indian Ocean Region (IFC-IOR).**
- **Associated Issues in maintaining maritime security**
  - There are no formal or commonly accepted definitions of concepts like 'maritime security', 'coastal security' and 'coastal defence'. Sometimes, it leads to vagueness.
  - Multiple institutions are involved and there is lack of coordination.
  - **Turf war** between MHA and Ministry of Defence (MoD).
  - Fishermen are considered as the eyes and ears for coastal security. However, discontent among fishermen community, involvement of politics in fishermen issues etc. are further complicating the security architecture.
  - Inadequate infrastructure, acute shortage of manpower is posing challenges in providing maritime security in India.
- **Indian Coast Guard (ICG)**
  - **About**
    - The ICG is a maritime armed force and search and rescue agency that protects India's maritime and national interests.
    - It was established in February 1977 by the Coast Guard Act of the Parliament of India and **operates under the Ministry of Defence.**
  - **ICG's missions include**
    - Protecting artificial islands, offshore terminals, and other installations
    - Protecting and assisting fishermen and mariners at sea
    - Marine Pollution control

8. Performance of Rupee over the Last 10 Years
GS 3 (Economy)


How the rupee has 'strengthened' under Modi government

HARISH DAMODARAN
NEW DELHI, APRIL 28

BETWEEN APRIL-end 2014 and now – roughly the time the Narendra Modi government has been in office – the rupee has depreciated by 27.8% against the US dollar, from Rs 60.34 to Rs 83.38.

That is marginally higher than the 26.5% depreciation from April-end 2004 to April-end 2014. The rupee fell from 44.37 to 60.34 against the dollar, in the period when Congress-led UPA was in power.

As India engages in global trade, the strength or weakness of the rupee is a function of the exchange rate with the US dollar and other global currencies. The rupee's "effective exchange rate" (EER) is an index of the weighted average of its exchange rates vis-à-vis the currencies of India's major trading partners.

The currency weights in the index are derived from the share of individual countries in India's total foreign trade. There are two measures of EER, nominal and real.

Nominal EER or NEER

The RBI has constructed the NEER indices of the rupee against a basket of six and 40 currencies.

The former is a trade-weighted average rate at which the rupee is exchangeable with a basic currency basket, comprising the US dollar, the euro, the Chinese yuan, the British pound, the Japanese yen and the Hong Kong dollar.

The latter index covers a bigger basket of 40 currencies of countries that account for about 88% of India's annual trade flows.

EXPLAINED ECONOMICS

TRADE-WEIGHTED NEER (BASE: 2015-16 = 100)

40-Currency Basket

139.77 133.77 90.76 83.85

2004-05 2019-14 2023-24

Note: Figures are for April-March financial years

TRADE-WEIGHTED REER (BASE: 2015-16 = 100)

6-Currency Basket

110.70 108.21 101.79 95.30

2004-05 2019-14 2023-24

Source: Reserve Bank of India

The NEER indices are with reference to a base year value of 100 for 2015-16. Increases indicate the rupee's effective appreciation against these currencies and decreases point to overall exchange rate depreciation.

Chart 1 shows that the rupee's 40-currency basket NEER has fallen by around 32.2% (from 133.8 to 90.8) between 2004-05 and 2023-24. The decline is even more – 40.2%, from 139.8 to 83.7 – for the narrower six-currency basket NEER. During the period, the rupee's average exchange rate against the US dollar dropped by 45.7%, from Rs 44.9 to Rs 82.8.

Simply put, the rupee's "effective" depreciation of 32.2-40.2% against the currencies of India's major trade partners over 20 years has been lower than its corresponding depreciation of 45.7% against the US dollar alone. The reason for that is its weakening less relative to other currencies than vis-à-vis the dollar.

The chart also shows that the bulk of the NEER decline happened during 2004-05 to 2013-14. The rupee, in fact, strengthened thereafter until 2021-22 before resuming its weakening trend – albeit at a slower pace than during the UPA period.

Real EER or REER

The NEER does not factor in inflation, which reflects changes in the internal value of the rupee.

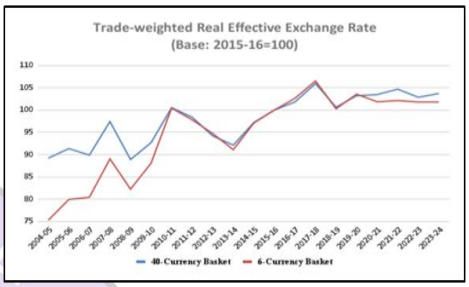
To illustrate, the Indonesian rupiah has fallen 83% against the US dollar in the last year. The Indian rupee has depreciated much less, by 17% in the period. But India's annual CPI inflation rate, at 4.8% for March, was more than Indonesia's 3.1%. Thus, the Indonesian currency's domestic purchasing power has suffered less erosion relative to its international peers than the Indian rupee's has.

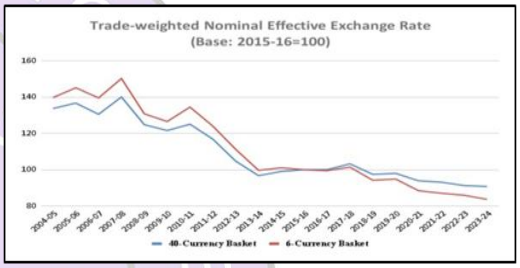
The REER adjusts the NEER for the inflation differentials between the home country and its trading partners. A country's nominal exchange rate falls less than its domestic inflation rate – as with India – the currency has actually appreciated in "real" terms.

Chart 2 maps the rupee's trade-weighted REER for the last 20 years, taking a base year value of 100 for 2015-16. It shows the rupee has strengthened in real terms over time, while ruling at 100 or above in 9 of the last 10 years. This is opposite to the trend of weakening seen in the NEER or its exchange rate with the US dollar.

If one assumes that the rupee was 'fairly valued' in base year 2015-16, any value above 100 signifies overvaluation. To that extent, the rupee is overvalued today in terms of its REER.

Any increase in REER means the costs of products being exported from India are rising more than the prices of imports. That translates into a loss of trade competitiveness – which may not be a good thing in the long run.





- **Why in News:**
  - Between April-end 2014 and now the rupee has depreciated by 27.6% against the US dollar, from Rs 60.34 to Rs 83.38.
  - This is marginally higher than the 26.5% from April-end 2004 to April-end 2014, when the rupee fell from 44.37 to 60.34 to the dollar.
- **How is the Strength or Weakness of the Rupee Decided?**
  - **India trades not only with the US**. It exports goods and services to other countries as well, while also importing from them.
  - Hence, the strength or weakness of the rupee is **a function of its exchange rate with not just the US dollar, but also with other global currencies**.
  - It is calculated by what is called the **rupee's effective exchange rate (EER)**.
- **What is the EER?**
  - The EER is measured by an index similar to the **consumer price index (CPI)**.
    - The CPI is the weighted average retail price of a representative consumer basket of goods and services for a given month or year, relative to a fixed base period
  - **The EER is an index** of the weighted average of the rupee's exchange rates vis-à-vis the currencies of India's major trading partners.
  - **The currency weights** are derived from the share of the individual countries in India's total foreign trade, just as the weights for each commodity in the CPI are based on their relative importance in the overall consumption basket.
- **What are the Two Measures of EER?**
  - **Nominal EER (NEER):**
    - **The Reserve Bank of India** (RBI) has constructed NEER indices of the rupee against a basket of six and also of 40 currencies.
    - **The former** is a trade-weighted average rate at which the rupee is exchangeable with a basic currency basket, comprising **the US dollar, the euro, the Chinese yuan, the British pound, the Japanese yen and the Hong Kong dollar**.
    - **The latter** index covers a bigger basket of 40 currencies of countries that account for **about 88% of India's annual trade flows.**
    - The NEER indices are with reference to a base year value of **100 for 2015-16:** Increases indicate the rupee's effective appreciation against these currencies and decreases point to overall exchange rate depreciation.
    - While the NEER is a summary index **that captures movements in the external value of the Rs** (against a basket of global currencies), the NEER does not factor in inflation (reflects changes in the internal value of the Rs).
  - **Real EER (REER):**
    - The REER is basically the **NEER that is adjusted for the inflation differentials** between the home country and its trading partners.
    - If a country's nominal exchange rate falls less than its domestic inflation rate - as with India - the currency has actually appreciated in "real" terms.
- **What the NEER and REER Data Shows?**
  - **NEER:**
    - The rupee's 40-currency basket NEER has fallen by around 32.2% (from 133.8 to 90.8) between 2004-05 and 2023-24.
    - The decline is even more - 40.2%, from 139.8 to 83.7 - for the narrower 6-currency basket NEER.
    - During the same period, the rupee's average exchange rate against the US dollar dropped by 45.7%, from Rs 44.9 to Rs 82.8.
    - **Simply put, the rupee's "effective" depreciation of 32.2-40.2% against the 40-currencies has been lower than its corresponding depreciation of 45.7% against the US dollar.**
    - The reason for that is its weakening less relative to other currencies than vis-à-vis the dollar.
  - **REER:**
    - **The rupee has strengthened in real terms over time**, while ruling at 100 or above in 9 out of the last 10 years.
    - This is opposite to the trend of weakening if one takes only the rupee's NEER or its exchange rate with the US dollar.
    - Any increase in REER means that the costs of products being exported from India are rising more than the prices of imports into the country.
    - **That translates into a loss of trade competitiveness** - which may not be quite a good thing in the long run.

9. Phi-3-mini
GS 3 (Science and Tech)

MICROSOFT LAUNCHES PHI-3: WHAT ARE SLMs, AND WHAT CAN THEY DO?

BIJIN JOSE
NEW DELHI, APRIL 28

MICROSOFT last week unveiled the latest version of its lightweight AI model, the Phi-3-mini, reportedly the first among three small language models (SLMs) that the company plans to release.

SLMs are compact versions of large language models (LLMs), which can comprehend and generate human language text. The new model expands the selection of high-quality models for customers, offering more practical choices as they build generative AI applications.

Phi-3-mini basics

Phi-3-mini is an SLM that has 3.8 billion parameters (a measure of the size and complexity of an AI model), and is trained on a data set that is smaller in comparison to LLMs such as Open AI's GPT-4.

The AI model is instruction-tuned, which means it can follow a range of instructions given by the user, reflecting how people normally communicate.

It is the first model in its class to support a context window — which helps an AI model recall information during a session — of up to 128,000 tokens, with little impact on quality. A token is the fundamental unit of data used by a language model to process and generate text.

Microsoft has described Phi-3 as a family of open AI models that are the most capable and cost-effective SLMs available. In the coming weeks, the company will add more models, including Phi-3-small and Phi-3-medium, to the Phi-3 family.

Different from LLMs

SLMs like Phi-3-mini are more streamlined versions of LLMs. When compared to LLMs, smaller AI models are cost-effective to operate and perform better on smaller devices like laptops and smartphones.

While LLMs are trained on massive general data, SLMs stand out with their specialisation. Through fine-tuning, SLMs can be customised for specific tasks — achieving accuracy and efficiency in the process. Most SLMs undergo targeted training, which demands considerably less computing power and energy compared to LLMs.

SLMs also differ from LLMs when it comes to inference latency, which is the time taken for a model to make predictions or decisions after receiving input. The compact size of SLMs allows for quicker processing, making them more responsive and apt for real-time applications such as virtual assistants and chatbots. As developing and deploying SLMs is often cheaper than LLMs, organisations and research groups with limited budgets prefer using them.

In a blog post, Microsoft mentioned use cases from Ayudia: "TC, a leading business conglomerate based in India, is leveraging Phi-3 as part of their continued collaboration with Microsoft on the copilot for Krishi Mitra, a farmer-facing app that reaches over a million farmers."

Phi-3-mini's capabilities

Phi-3-mini has outperformed models of the same size and next size across a variety of benchmarks in areas like language, reasoning, coding, and maths, according to Microsoft.

It requires less computational power and has much better latency. With longer context windows, it is capable of taking in and reasoning over large text content such as documents, web pages, and code. Microsoft claims that Phi-3-mini demonstrates strong reasoning and logic capabilities, making it ideal for analytical tasks.

- **Why in News:** Recently, Microsoft unveiled the latest version of its 'lightweight' AI model – the Phi-3-Mini.
- **About Phi-3-mini:**
  - It is believed to be the first among the three small models that **Microsoft** is planning to release.
  - It has reportedly outperformed models of the same size and the next size up across a variety of benchmarks, in areas like **language, reasoning, coding, and maths.**
  - It is the first model in its class to support a context window of **up to 128K tokens**, with little impact on quality.
  - The amount of conversation that an AI can read and write at any given time is called the **context window**, and is measured in tokens.
  - It is a 3.8B language model and is available on AI development platforms such as Microsoft Azure AI Studio, HuggingFace, and Ollama.
  - Phi-3-mini is available in two variants, one with 4K context-length, and another with 128K tokens.
- **How is Phi-3-mini different from Large Language Models (LLMs)?**
  - Phi-3-mini is a **Small Language Model** (SLM).
  - SLMs are more streamlined versions of large language models. When compared to LLMs, smaller AI models are also **cost-effective to develop and operate**, and they perform better on smaller devices like laptops and smartphones.

- SLMs are **great for resource-constrained environments** including on-device and offline inference scenarios and such models are good for scenarios where fast response times are critical, say for chatbots or virtual assistants.
- SLMs can be customised for specific tasks and achieve **accuracy and efficiency** in doing them. Most SLMs undergo targeted training, demanding considerably less computing power and energy compared to LLMs.
- SLMs also differ when it comes to **inference speed and latency**. Their compact size allows for quicker processing. Their cost makes them appealing to smaller organisations and research groups.

30th April

1. Why are 'Unclassed' Forests Missing
GS 3 (Environment)

- **Why in News:**
  - In compliance with a Supreme Court order, the Ministry of Environment, Forests and Climate Change (MoEFCC) uploaded the various State Expert Committee (SEC) reports on its website.
  - This interim order was in response to a PIL challenging the constitutionality of **the Forest (Conservation) Act Amendment (FCAA) 2023**.
  - A key concern in the petition was the **status of unclassed forests** (either not known or not identified at all), which were to be identified by the state SEC reports.

Why are unclassed forests 'missing'?

What does the Forest (Conservation) Act Amendment (FCAA) 2023 mandate with respect to unclassed forests? What was the criticism against the amended Act? How all States submitted their State Expert Committee reports as per the Supreme Court directive?

EXPLAINER

Prakarthi Narayanan
Krithika Sampath
Praveen Nandi Reddy

The story so far:

In compliance with a February 15, 2024, Supreme Court order, the Ministry of Environment, Forest and Climate Change (MoEFCC) uploaded the various State Expert Committee (SEC) reports on its website in April. This interim order was in response to a public interest litigation challenging the constitutionality of the Forest (Conservation) Act Amendment (FCAA) 2023. A key concern in the petition was the status of unclassed forests, which were to be identified by the SEC reports, wasn't known or if they had been identified at all.

What does the FCAA stipulate?

With the enactment of FCAA, unclassed forests — which have legal protection under the landmark T.N. Godavarman Thirumulpad (1996) case — would lose this protection, leading to their inevitable diversion. The SEC reports were to be prepared in pursuance of the order which specified that 'forests' as per their dictionary meaning and all categories of forests irrespective of ownership and notification status would be included under the ambit of the Forest (Conservation) Act, 1980. As a result, any land patch having the nature of unclassed forests, would require the Central government's approval in case a project proponent sought to divert that land for non-forest use. Unclassed or deemed forests may belong to forests, revenue, railways and other government entities, community forests or those under private ownership, but are not notified.

How these forests been identified?

The status of the reports were unknown when the MoEFCC told a Joint Parliamentary Committee that the SECs had identified unclassed forests that were not recorded as forests in response to criticism that the proposed law undermined the Godavarman judgment and would exclude all unclassed forest land from its purview. The MoEFCC had assured the Committee that "the amended Act would be applicable to all the unclassed forests". However, in response to an RTI application filed on January 17, the MoEFCC said it "did not have the requisite reports".

Also, when the MoEFCC has now uploaded the SEC reports on its website, they reveal that there was no State has provided verifiable data on the identification, status, and location of unclassed forests. In fact, seven States and Union Territories — Goa, Haryana, Jammu & Kashmir, Ladakh, Lakshadweep, Tamil Nadu, and West Bengal — appear not to have constituted the SEC at all. Twenty-three States have shared their reports but only in the form of "compliance reports" in response to criticism that the proposed law undermined the Godavarman judgment and would exclude all unclassed forest land from its purview. The MoEFCC had assured the Committee that "the amended Act would be applicable to all the unclassed forests". However, in response to an RTI application filed on January 17, the MoEFCC said it "did not have the requisite reports".

Also, when the MoEFCC has now uploaded the SEC reports on its website, they reveal that there was no State has provided verifiable data on the identification, status, and location of unclassed forests. In fact, seven States and Union Territories — Goa, Haryana, Jammu & Kashmir, Ladakh, Lakshadweep, Tamil Nadu, and West Bengal — appear not to have constituted the SEC at all. Twenty-three States have shared their reports but only in the form of "compliance reports" in response to criticism that the proposed law undermined the Godavarman judgment and would exclude all unclassed forest land from its purview. The MoEFCC had assured the Committee that "the amended Act would be applicable to all the unclassed forests". However, in response to an RTI application filed on January 17, the MoEFCC said it "did not have the requisite reports".

What do the reports say?

Only nine States have provided the extent of unclassed forests. Most states and UTs only shared the extent of different types of forest areas specified in the order under government ownership, either with the Forest Survey of India or with other government departments.

Also, almost no State or UT specified the geographic locations of forests. Any identifying geographical information of forests in the SEC reports is only about the ecosystem/forest, which isn't useful because this information is already available with Forest Departments. The SEC reports also question the veracity of the reports of the Forest Survey of India, the only government agency to survey and assess forests. For example Gujarat, whose SEC report says its unclassed forests cover 192.24 sq. km while the Survey has reported the significantly higher at 4,577 sq. km (1995-1999).

The treatment of SECs without on-ground verifications is likely to have resulted in the large-scale destruction of forests which ought to have been identified, demarcated and protected 27 years ago, but with no baseline data from 1996-1997, we have no idea how much unclassed forest has been lost. For example, Kerala's SEC didn't include the Pullhoodi reserves, an ecologically sensitive area that was illegally encroached during the 2000 floods.

What would be the effects of FCAA?

The loss of such forests is likely to be a recurring theme in all States, and needs to be investigated. It is also clear that the reports are riddled with glaring incomplete and unverified data collected from readily available records, and submitted to the Supreme Court in order to fulfil their obligations.

The poor implementation of the SC was to be implemented in letter and spirit. The failure to do this is a lost opportunity to achieve the requirements of the Indian Forest Policy, which envisages 33.3% forest cover in plains and 66.6% in the hills. Promulgating the FCAA without examining the SEC reports displays a lack of diligence on the MoEFCC's part and will have consequences for India's ecosystems and ecological security. Those responsible need to be held to account, and the national government needs to take ameliorative action to re-identify, retrieve and protect forest areas as per the 1996 judgment.

Prakarthi Narayanan is an IFS (retd.) officer who has served as DG (NAEB) in the MoEFCC. Pervin Singh Bindra is a former IFS officer. Krithika Sampath is a researcher from the University of Michigan.

THE GIST

- With the enactment of FCAA, unclassed forests — which have legal protection under the landmark T.N. Godavarman Thirumulpad (1996) case — would lose this protection, leading to their inevitable diversion.
- The SEC reports were to be prepared in pursuance of the order which specified that 'forests' as per their dictionary meaning and all categories of forests irrespective of ownership and notification status would be included under the ambit of the Forest (Conservation) Act, 1980. As a result, any land patch having the nature of unclassed forests, would require the Central government's approval in case a project proponent sought to divert that land for non-forest use.
- It is clear that the reports were hastily put together, using incomplete and unverified data collected from readily available records.

- **What are Unclassed Forests?**
  - **Unclassed or deemed forests** may belong to forests, revenue, railways and other government entities, community forests or those under private ownership, but are **not notified.**
  - The unclassed forests had **legal protection** under the landmark case - **N. GodavarmanThirumalpad (1996).**
    - It specified that 'forests' as per their dictionary meaning and **all categories of forests** irrespective of ownership and notification status **would be included under the ambit of the Forest (Conservation) Act 1980.**
  - **The SEC reports were to be prepared in pursuance of the order.** SECs were to identify all such forests across the country through
  - Available records i.e. Forest Working Plans, Revenue land records, etc., and
  - By physical identification of any land patch having the nature of forests as per dictionary meaning regardless of its ownership.
  - As a result, unclassed forests would also **require the Central government approval** in case a project proponent sought to divert that land for non-forest use, after multiple other layers scrutiny.
- **What does the FCAA Stipulate wrt Unclassed Forests?**
  - The FCAA amends the Forest (Conservation) Act 1980 (FCA), which provides that
    - The dereservation of reserved forests,
    - Use of forest land for non-forest purpose,
    - Assigning forest land by way of lease or otherwise to private entity and
    - Clearing of naturally grown trees for the purpose of reafforestation **requires prior permission of the Central Government.**
  - **The FCAA amends the FCA to make it applicable to certain types of land.** These include land notified as a forest under the Indian Forest Act, 1927 or in government records after the 1980 Act came into effect.
  - **However, the FCAA excludes two categories of land** from its purview:
  - Land recorded as forest before October 25, 1980 but not notified as a forest, and
  - Land which changed from forest-use to non-forest-use before December 12, 1996.
  - This provision may go against the 1996 SC judgement on preventing deforestation.
  - Hence, with the enactment of FCAA, **the unclassed forest would lose protection provided after the SC's 1996 verdict**, leading to their inevitable diversion.

- **Why are 'Unclassed' Forests Missing?**
  - According to the SEC reports uploaded on the website of MoEFCC, **no state has provided verifiable data** on the identification, status, and location of unclassed Forests.
  - In fact, 7 states and UTs - Goa, Haryana, Jammu & Kashmir, Ladakh, Lakshadweep, Tamil Nadu, and West Bengal - **appear not to have constituted the SEC at all.**
  - Most states have either used existing forest and revenue department data, some (like Manipur and Sikkim) have **merely quoted figures from the Forest Survey of India (FSI)**.
    - The SEC reports also question the veracity of the reports of the FSI, the only government agency to survey and assess forests.
    - A striking example comes from **Gujarat**, whose SEC report says its unclassed forests cover 192.24 sq. km while the Survey has reported the significantly higher 4,577 sq. km (1995-1999).
  - Also, almost **no state or UT specified the geographic locations of forests**.

- **Consequences of Missing Forests and Way Ahead:**
  - **The treatment of SECs without on-ground verification** is likely to have resulted in the **large-scale destruction of forests**, which ought to have been identified, demarcated and protected 27 years ago (after 1996 verdict).
  - Promulgating the FCAA without examining the SEC reports **displays a lack of diligence on the MoEFCC's part** and will have terrible consequences for India's ecosystems and **ecological security.**
  - **Those responsible need to be held to account** and the national government needs to take ameliorative action to re-identify, retrieve and protect forest areas as per the 1996 judgement.
  - **The failure to do this is a lost opportunity** to achieve the requirements of the Indian Forest Policy, which envisages 33.3% forest cover in plains and 66.6% in the hills.

2. <u>World hits its overtourism tipping point</u>
<u>GS 2 (International events of importance)</u>

- **Why in News:** Venice has responded to overtourism by implementing a 5€ fee for day trippers visiting the city, addressing the widespread issue exacerbated by the global pandemic.

  Impact of Overtourism

  - Overtourism arises when destinations face an overwhelming influx of tourists, leading to **adverse effects on the environment, infrastructure, and local communities.**
  - India is ranked 10th among 185 countries in terms of travel & tourism's total contribution to GDP in 2019. However, it also brings **social, economic, and environmental consequences.**
  - **Challenges** include disenchanted locals, degraded tourist experiences, strained infrastructure, and cultural threats.
  - **Social impact**: It can cause difficulties for the locals as mentioned above overtourism affects their quality of life.
  - **Economic issue**: Overcrowding results in congested public spaces, increased real estate prices, reduced residents' purchasing power.
  - **Environmental issue:**Depletion of local natural resources and species as well as pollution and waste problems. Tourism contributes to more than 5 percent of global greenhouse gas emissions, with transportation accounting for 90 percent of this
  - **Addressing Overtourism**
    - **Tourism degrowth**has long been posited as a remedy to overtourism.
    - **De-marketing destinations** has been applied with varying degrees of success.
    - **Introducing entry fees and gates** to over-tourist places like Venice is another deterrent.

Why is Venice charging an entry fee for tourists?

How have local residents' associations responded to the move? Is overcrowding a significant issue in the city?

Atanu Biswas

The story so far:
On April 25, Venice, a city in Italy, to control overtourism, introduced an entry fee for visitors who are coming in to visit the city.

What is the Venice access fee?
Day-trippers coming to the city between 8.30 am and 4 pm are now required to pay €5. Overnight visitors are not charged, nor are residents, commuters, students, or children under 14. As part of a trial period, the entrance fee, which can be paid online and is only necessary to enter Venice's historic centre, is applicable on 29 peak days from April 25 to July 14. Transgressors risk fines ranging from €50 to €300.

What has been the response?
Some locals consider it a "joke," arguing that it could turn Venice into a 'theme park'. A number of residents' associations have protested, claiming that it is a political ploy that most likely won't stop tourists from visiting St. Mark's Square and the Rialto Bridge. On its first day, 5,500 individuals purchased tickets, bringing in €27,500, which may just be enough to cover operating costs.
It's a "first-of-its-kind experiment," according to Venice Mayor Luigi Brugnaro, to lessen overcrowding, promote longer stays, and enhance the quality of life for locals in one of the most popular tourist destinations in the world. It's an effort to find a new equilibrium between residents and visitors. It would also aid in gathering basic data and controlling visitor flows. But some have also brought up privacy-related issues.

Is overcrowding an issue in Venice?
The introduction of the tourist tax comes after Venice just managed to avoid being included on UNESCO's danger list last year due to the harm that overtourism was causing to its fragile ecosystem. Due to mass tourism, Venice's main island, which was once the heart of a powerful maritime republic, has lost more than 1,20,000 residents since the early 1950s. The population shrank to fifty thousand. With 3.2 million overnight guests in the historic centre in 2022 and over 30 million day-trippers annually, the city experiences congestion when the number of day-trippers approaches 30,000-40,000. It is thought that day-trippers contribute very little to the local economy.

What about sustainability?
Venice has been making an effort to re-establish a more sustainable relationship with tourists. The insistence from UNESCO and other environmentalists' eventually forced the authority to forbid big cruise ships from passing through the Giudecca canal and past St. Mark's Square. A positive spillover effect of the Venice entry tax would be the reducing of the rapidly increasing number of unauthorised Airbnbs within the city. People operating illegal rentals will need to register legitimately (and pay tax) since anyone staying overnight will have to disclose where they are staying.

What about other popular spots?
Overtourism is a problem in many other European cities, including Amsterdam, Barcelona, and London. Tens of thousands of Spanish citizens recently protested in the Canary Islands, demanding a cap on the number of tourists allowed to visit the archipelago.
Seville's main Plaza de España also requires a fee to enter.
The small admission price might just be the beginning. The Italian town of Bagnoregio levied a fee on visitors in 2018 to collect funds for its rescue since portions of the town are collapsing and it was successful. The most visited place in Wales is the town of Portmeirion in north Wales, which is one of the few British towns which charges for admission.

Can India follow suit?
Similarly, India which is home to a large number of tourist spots can definitely earn a lot from tourism while simultaneously deterring insignificant revenue-generating tourists.

THE GIST

- Day-trippers coming to the city between 8.30 am and 4 pm are now required to pay €5. Overnight visitors are not charged.
- Overtourism is a problem in many other cities, including Amsterdam, Barcelona, and London.
- The introduction of the tourist tax comes after Venice just managed to avoid being included on UNESCO's danger list last year due to the harm that overtourism was causing to its fragile ecosystem.

3. <u>What is the Paradox of Thrift?</u>

<u>GS 3 (Economy)</u>

- **Why in News:** Keynesian economists argue that a rise in individuals' savings, by reducing the amount of money that is spent on final goods and services, can in effect cause a significant fall in overall savings and investment.
- **What is the Paradox of Thrift?**
  - The paradox of thrift/ paradox of savings is an economic theory popularised by British economist **John Maynard Keynes** in his 1936 book The General Theory of Employment, Interest, and Money. It depicts that a rise in the savings rate of individuals can surprisingly cause a fall rather than a rise in the overall savings in an economy.

  How is this Explained?

  - Savings are invested by capitalists with the ultimate aim of selling their output in the form of final goods and services to consumers. Therefore, it might result in losses for capitalists and deter future investment if consumers do not spend enough money on the goods that capitalists bring to the market to sell.

  What is the Significance of this Theory?

  - It helped revive the circular flow model of the economy. It demonstrates how money flows from producers to workers as wages and flows back to producers as payment for products. In short, an economy is an endless circular flow of money.

  What are the Limitations of the Theory?

  - The circular flow model ignores the lesson of **Say's law** of classical economics. Also, the theory **ignores the potential for inflation or deflation**. The paradox of thrift **ignores the potential for saved income to be lent out by banks**. When some individuals increase their savings, interest rates tend to fall, and banks make additional loans.

The paradox of thrift: does a rise in savings cause a fall in investment?

Keynesian economists argue that a rise in individuals' savings, by reducing the amount of money that is spent on final goods and services, can in effect cause a significant fall in overall savings and investment

Prashanth Perumal

The paradox of savings, also known as the paradox of thrift, refers to the theory that a rise in the savings rate of individuals can surprisingly cause a fall rather than a rise in the overall savings in an economy. This is in contrast to the general belief that a rise in individuals' savings rates will cause a rise in the overall savings in the economy. So even though savings may be good for an individual household, it is believed that it may not be good for the wider economy. The idea is part of the under-consumption theories of the business cycle which attribute economic downturns to weak consumption and high savings.

Origins of the theory
The concept was popularised by British economist John Maynard Keynes in his 1936 book *The General Theory of Employment, Interest, and Money*. Prior to Keynes, it was discussed by economists William T. Foster and Waddill Catchings in works such as *Business without a Buyer* and *The Dilemma of Thrift*.
Keynesian economists believe that higher savings is bad for the wider economy, and that boosting consumer spending is the way to grow an economy. They argue that savings are invested by capitalists with the ultimate aim of selling their output in the form of final goods and services to consumers. So, if consumers fail to spend enough money on the output that capitalists bring to the market to sell, it can cause losses to capitalists and discourage further investment. On the other hand, a rise in consumer demand for final goods and services is expected to encourage people to save more and invest.
So, Keynesian economists argue that a rise in individuals' savings, by reducing the amount of money that is spent on final goods and services, can in effect cause a significant fall in overall savings and investment. In fact, many economists today believe that fluctuations in consumer spending are the primary reason behind the business cycle. They recommend that the government should take various measures, including increasing government spending, to put more money in the hands of consumers during economic downturns. Basically, in the Keynesian view of the economy, the primary challenge that fiscal and monetary authorities need to solve is how to get people to spend enough money on final goods and services to justify the costs that capitalists incur to produce these goods and services.

Criticisms of the idea
Critics of the idea argue that saving more is not bad for the economy and that a fall in consumer spending does not actually cause a fall in investment. In fact, they argue that a fall in consumer spending leads to a rise in savings and investment. This is simply because any money that people don't spend on consumer goods or hoard under their beds has to go towards their savings, which in turn gets invested.
A rise in savings, they further note, causes an increase in entrepreneurial demand from capitalists for various factors of production. So, lower consumer demand for final goods and services gets offset by higher demand for factors of production, and hence there is no drop in aggregate demand in the economy as a result of higher savings.
Secondly, critics argue that it is not really true that a drop in consumer spending will lead to a drop in investment owing to a lack in consumer demand for the final goods and services produced by businesses. Instead, they argue, a drop in consumer spending will simply cause a change in the way capitalists allocate their savings across time. In other words, these economists note that there won't be any adverse consequences due to lower consumer spending.
When people spend less on consumer goods and save more, they note, this will cause capitalists to invest a greater amount of available savings to satisfy consumer demand in the more distant future. So, longer-term business projects which were earlier unviable due to people's preference to consume goods and services in the near future rather than in the distant future suddenly become viable.
Now, the greater time allowed for capitalists to bring finished products to the market is a major reason why economic output is much higher in an advanced economy, these economists point out.
Put another way, the critics argue that capitalists in a free economy will effectively reallocate higher savings in accordance with the greater preference that consumers show for goods in the distant future than in the near future.

4. <u>ISRO to Conduct Air-Drop Test of Gaganyaan Crew Module</u>
<u>GS 3 (Science and Tech)</u>

- **Why in the News:** The Indian Space Research Organisation (ISRO) will likely conduct the crucial integrated air-drop test for the Gaganyaan mission's crew module next week.
- **Gaganyaan Mission:**
  - The Gaganyaan mission is India's ambitious project undertaken by the Indian Space Research Organisation (ISRO) to send astronauts into space.
  - **Objective:**
    - To demonstrate India's capability to send humans into space, making it the fourth nation after the United States, Russia, and China to achieve this feat independently.

ISRO to test Gaganyaan parachutes by dropping module from chopper

ANONNA DUTT
NEW DELHI, APRIL 29

THE INDIAN Space Research Organisation (ISRO) is likely to undertake an important test under the Gaganyaan mission to check the parachute system of the crew module in the next few days, according to officials in know of the matter. The Integrated Air Drop Test (IADT) will see a Chinook helicopter dropping the crew module from a height of around 4-5 km.
"The test is likely to be conducted in the next two or three days. The first IADT will test the parachute system under nominal conditions, meaning it will mimic the process of splashdown of the crew module when both parachutes open in a timely manner," the official said.
This will be the first in a series of IADT to test the parachute system under off-nominal conditions such as one parachute not opening, both parachutes not opening, or delayed deployment of the parachutes.
After the splashdown of the crew module—the module that will seat the three Indian astronauts —another helicopter will locate the crew module. The Navy will then recover the crew module and bring it to the Chennai coast, according to officials.
The splashdown and recovery of the crew module is also an important step, especially since the crew module turned upside down during the first test vehicle mission last October. The space agency will also undertake test vehicle missions— where a single stage rocket carries the modules several kilometres in space to test all systems —before the first unmanned mission. "This is unchartered territory. We do not know how many such tests will be needed. It will depend on findings from these tests," said the official.
The crew module will be the pressurised cabin which will carry the three astronauts to space and back.
While the current tests are only with the crew module, for the actual flight, the crew module will be attached with a service module that will house all support systems such as the propulsion system.

- **Timeline**:
  - The Gaganyaan mission was announced by Prime Minister Narendra Modi on August 15, 2018, with a target to launch the first crewed mission by 2022 to coincide with the 75th anniversary of India's independence.
  - However, due to various factors, including the COVID-19 pandemic, the timeline has been pushed to a later date.
- **Components of the Mission**:
  - **Crew Module**: The crew module is the spacecraft that will carry Indian astronauts into space and return them safely to Earth.
  - It is being developed to accommodate a crew of two to three astronauts.
  - **Launch Vehicle**:
    - ISRO plans to use the Geosynchronous Satellite Launch Vehicle (**GSLV Mk III**) to launch the crew module into space.
  - **Training Facilities**:
    - ISRO has been working on setting up astronaut training facilities, including the Human Space Flight Centre (HSFC) in Bengaluru, where astronauts will undergo rigorous training in areas such as microgravity, emergency procedures, and spacecraft operations.
  - **Life Support Systems**:
    - The crew module will be equipped with life support systems to ensure the safety and well-being of the astronauts during their space journey.
  - **Mission Control Centre**:
    - ISRO will establish a dedicated Mission Control Centre to monitor and control the Gaganyaan mission from the ground.

Selection & Training of Astronauts:

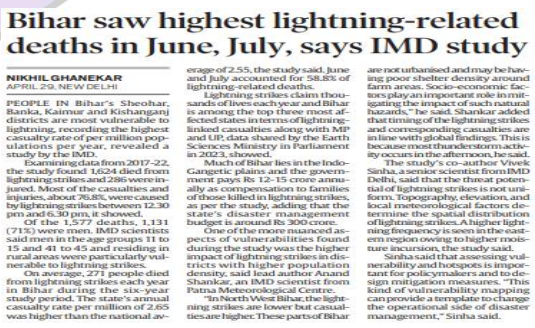
- ISRO has selected four astronauts for the Gaganyaan mission.
  - The selection criteria included physical fitness, psychological resilience, and expertise in relevant fields such as engineering and medicine.
  - Selected astronauts are currently undergoing extensive training both in India and abroad to prepare for the challenges of space travel.
  - Out of the four astronaut designates, or "**vyomnauts**", being trained, **three will be selected for the final mission**.

Air-Drop Test of Gaganyaan Crew Module:

- The Indian Space Research Organisation (ISRO) is likely to undertake an important test under the Gaganyaan mission to check the parachute system of the crew module in the next few days.
- The Integrated Air Drop Test (IADT) will see a Chinook helicopter dropping the crew module from a height of around 4-5 km.
- The crew module, designed to ensure the safe return of astronauts from space, will be dropped from an altitude of approximately 3.5 to 4 kilometers using an Indian Air Force helicopter.
- This procedure aims to assess the parachute system's functionality and the capsule's overall stability and safety during descent.
- This pivotal test forms part of the preparatory steps leading up to India's ambitious manned spaceflight which is **likely to take place in 2025**.

5. Study analysed deaths caused by lightning in Bihar
GS 3 (Environment)

- **Why in news:**
  - A new study of lightning-related deaths in Bihar has revealed that various districts of Bihar were vulnerable to this natural hazard, recording the highest casualty rate per million population.
  - The study examined data from the 2017-2022 period and found that 1,624 people died and 286 were injured due to lightning.



Bihar saw highest lightning-related deaths in June, July, says IMD study

NIKHIL GHANEKAR
APRIL 29, NEW DELHI

PEOPLE IN Bihar's Sheohar, Banka, Kaimur and Kishanganj districts are most vulnerable to lightning, recording the highest casualty rate of per million populations per year, revealed a study by the IMD.

Examining data from 2017-22, the study found 1,624 died from lightning strikes and 286 were injured. Most of the casualties and injuries, about 76.8%, were caused by lightning strikes between 12.30 pm and 6.30 pm, it showed.

Of the 1,577 deaths, 1,131 (71%) were men. IMD scientists said men in the age groups 11 to 15 and 41 to 45 and residing in rural areas were particularly vulnerable to lightning strikes.

On average, 271 people died from lightning strikes each year in Bihar during the six-year study period. The state's annual casualty rate per million of 2.65 was higher than the national average of 2.5, the study said. June and July accounted for 58.8% of lightning-related deaths.

Lightning strikes claim thousands of lives each year and Bihar is among the top three most affected states in terms of lightning-linked casualties along with MP and UP, data shared by the Earth Sciences Ministry in Parliament in 2023, showed.

Much of Bihar lies in the Indo-Gangetic plains and the government pays Rs 12-15 crore annually as compensation to families of those killed in lightning strikes, as per the study, adding that the state's disaster management budget is around Rs 300 crore.

One of the more nuanced aspects of vulnerabilities found during the study was the higher impact of lightning strikes in districts with higher population density, said lead author Anand Shankar, an IMD scientist from Patna Meteorological Centre.

"In North West Bihar, the lightning strikes are lower but casualties are higher. These parts of Bihar are not urbanised and may be having poor shelter density around farm areas. Socio-economic factors play an important role in mitigating the impact of such natural hazards," he said. Shankar added that timing of the lightning strikes and corresponding casualties are in line with global findings. This is because most thunderstorm activity occurs in the afternoon, he said.

The study's co-author Vivek Sinha, a senior scientist from IMD Delhi, said that the threat potential of lightning strikes is not uniform. Topography, elevation, and local meteorological factors determine the spatial distribution of lightning strikes. A higher lightning frequency is seen in the eastern region owing to higher moisture incursion, the study said.

Sinha said that assessing vulnerability and hotspots is important for policymakers and to design mitigation measures. "This kind of vulnerability mapping can provide a template to change the operational side of disaster management," Sinha said.

- **What is lightning?**
  - **About**
    - Scientifically, lightning is a rapid and massive discharge of electricity in the atmosphere some of which is directed towards earth.
    - The discharges are generated in giant moisture-bearing clouds that are 10-12 km tall.
    - The base of these clouds typically lie within 1-2 km of the Earth's surface, while the top is 12-13 km away. Temperatures in the top of these clouds are in the range of –35° to –45°C.
  - **Mechanism**
    - **Smaller ice crystals are moving up while bigger crystals are coming down**

- As water vapour moves upward in the cloud, the falling temperature causes it to condense.
- As they move to temperatures below 0°C, the water droplets change into small ice crystals.
- They continue to move up, gathering mass until they are so heavy that they start to fall to Earth.
- This leads to a system in which, simultaneously, smaller ice crystals are moving up and bigger crystals are coming down.

◆ **Collision between these crystals and release of electrons**

- Collisions follow and trigger the release of electrons, a process that is very similar to the generation of sparks of electricity.
- As the moving free electrons cause more collisions and more electrons, a chain reaction ensues.

◆ **Potential difference between top layer and middle layer of the cloud**

- This collision results in a situation in which the top layer of the cloud gets positively charged, while the middle layer is negatively charged.
- The electrical potential difference between the two layers is huge, of the order of a billion to 10 billion volts.
- In very little time, a massive current, of the order of 100,000 to a million amperes, starts to flow between the layers.

◆ **Earth - a good conductor of electricity**

- While the Earth is a good conductor of electricity, it is electrically neutral.
- However, in comparison to the middle layer of the cloud, it becomes positively charged.
- As a result, about 15%-20% of the current gets directed towards the Earth as well.
- It is this flow of current that results in damage to life and property on Earth.

■ **Areas which are lightning-prone**

◆ As per the report released by the Climate Resilient Observing Systems Promotion Council (CROPC) in 2022, following states are more vulnerable to lightning strikes:

- Madhya Pradesh followed by Chhatisgarh, Maharashtra, Odisha and West Bengal.
- Other states with high strike rate include Bihar, UP, Karnataka, Jharkhand and Tamil Nadu.

◆ Lightning is fairly common, though it is not often realised in the urban centres.

◆ In India, well over one crore lightning strikes have been recorded in recent years.

◆ It is only over the last few years that lightning records have begun to be maintained, due to the efforts of CROPC and India Meteorological Department.

Mitigating the effects of lightning strikes

■ **Lightning – not classified as a natural disaster in India**

◆ As of now, lightning is not classified as a natural disaster in India.

◆ As per the Centre, deaths caused by it can be avoided through education and awareness.

■ **Setting up of an early warning system**

◆ India has set up of an early warning system, that is already saving many lives.

◆ India is among the only five countries in the world with an early warning system for lightning and the forecast is available from five days to up to 3 hours.

■ **Most deaths happening in rural areas**

◆ More than 96% of lightning deaths happen in rural areas. As such, most of the mitigation and public awareness programmes need to focus on these communities.

◆ Lightning protection devices are fairly unsophisticated and low-cost. Yet, their deployment in the rural areas, as of now, is extremely low.

■ **States are encouraged to prepare and implement lightning action plans**

◆ States are being encouraged to prepare and implement lightning action plans, on the lines of heat action plans.

◆ An international centre for excellence on lightning research to boost detection and early warning systems is also in the process of being set up.

Reports on deaths caused by lightning in Bihar

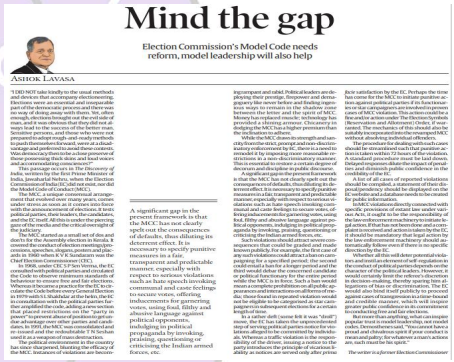
■ **Annual casualty rate per million is highest in Bihar**

◆ Bihar's annual casualty rate per million of 2.65 was higher than the national average of 2.55.

- **Period between May to September was the peak for lightning strikes**
  - The period between May to September was the peak for lightning strikes with June and July accounting for 58.8 per cent of lightning-linked deaths.
  - Researchers explained that lightning strikes reach a record high in June and July with the monsoonal current setting in, mainly due to the interplay of easterly and westerly winds.
- **The plains area is prone to thunderstorms and lightning activity**
  - The plains area is prone to thunderstorms and lightning activity as warm, dry air from north-west India converges with moist air emanating from the Bay of Bengal.
  - This creates conditions that are favourable for the formation of deep convective clouds.
- **Higher population density and socio-economic factors also play a role**
  - In North West Bihar, the lightning strikes are lower but casualties are higher.
  - These parts of Bihar are not urbanised and may be having poor shelter density around farm areas.
  - Socio-economic factors play an important role in mitigating the impact of such natural hazards.
- **Threat potential of lightning strikes is not uniform**
  - Topography, elevation, and local meteorological factors determine the spatial distribution of lightning strikes.
  - A higher lightning frequency is seen in the eastern region owing to higher moisture incursion.

6. Mind the Gap: EC's Model Code Needs Reform and India Needs Model Leadership
GS 2 (Elections)

- **Why in News:**
  - **The Model Code of Conduct (MCC)**, a cornerstone of India's electoral process, **has undergone a significant evolution since its inception.**
  - Initially designed to ensure fair conduct during elections**, it has encountered challenges in recent years due to the changing political landscape.**
  - Therefore, it is **important to analyse the historical development of the MCC, assess its current shortcomings, and propose measures** to strengthen its enforcement.


Mind the gap
Election Commission's Model Code needs reform, model leadership will also help
ASHOK LAVASA

- **Evolution of the Model Code of Conduct (MCC)**
  - **The MCC originated in the 1960s** as a modest set of guidelines for election conduct, primarily focused on Kerala's Assembly elections.
  - Over the years, **under different Chief Election Commissioners (CECs), it expanded in scope and applicability.**
  - Notably, **in 1979, under S L Shakhdar's tenure, the MCC was circulated before every General Election**, reflecting its growing importance.
  - Subsequent revisions, **particularly under T N Seshan, instilled the MCC with greater potency,** making it a vital tool for ensuring electoral integrity.

MCC Challenges and Need for Strengthening the Enforcement

- **Escalating Violations**
  - Political parties and candidates **frequently flout the MCC's provisions with impunity,** engaging in activities such as hate speech, vote-buying, and misinformation campaigns.
  - The **prevalence of such violations erodes public trust in the electoral process** and undermines the principles of fairness and transparency.
- **Exploitation of Loopholes**
  - In the contemporary political landscape, **there is a visible trend of political actors exploiting loopholes** in the MCC to circumvent its regulations.
  - With the advent of technology and social media, **parties have found new avenues to disseminate propaganda and target voters,** often skirting the MCC's traditional constraints.
  - This exploitation of loopholes diminishes the MCC's effectiveness and necessitates revisions to address emerging challenges.
- **Inadequate Deterrents**
  - While the MCC outlines ethical guidelines and principles, it often **fails to prescribe meaningful consequences for violations.**
  - As a result, **politicians perceive little risk in flouting the MCC**, emboldening them to prioritise electoral gains over ethical conduct.
  - **Strengthening the MCC requires the imposition of clear and proportional penalties** for infringements, thereby instilling a culture of accountability.
- **Complexity of Enforcement**

- **The vast and diverse nature of India's electoral landscape**, coupled with the sheer volume of violations reported, **strains the EC's enforcement capabilities.**
- Moreover, **the process of adjudicating MCC violations can be protracted and resource-intensive,** leading to delays in accountability.
- **Streamlining enforcement procedures and enhancing the EC's capacity are essential** for ensuring the timely and effective implementation of the MCC.

- **Erosion of Public Trust**
  - **When citizens witness widespread disregard for ethical norms** and regulations, **they may become disillusioned with the democratic system**, leading to voter apathy and disenchantment.
  - **Restoring public trust in elections requires robust measures to strengthen the MCC** and demonstrate the EC's commitment to upholding electoral integrity.

Proposed Reforms to Strengthen the Enforcement of MCC

- **Clear and Comprehensive Guidelines**
  - The first step in reforming the MCC involves establishing clear and comprehensive guidelines outlining permissible and impermissible conduct during electoral campaigns.
  - **These guidelines should be updated regularly** to adapt to evolving challenges and technological advancements.
  - By **providing clarity on expected behaviour, political parties and candidates will be better equipped** to adhere to ethical standards and avoid inadvertent violations.
- **Strict Enforcement Mechanisms**
  - This includes **the imposition of proportional penalties for infringements**, such as fines, bans on campaigning, and withdrawal of electoral symbols.
  - Additionally, **the Election Commission (EC) should streamline enforcement procedures to ensure swift adjudication of cases**, thereby enhancing the MCC's credibility and deterrent effect.
- **Indirect Liability for Political Parties**
  - By i**mposing penalties on parties found guilty of MCC violations, regardless of individual culpability**, the reform aims to incentivise parties to exercise greater oversight over their members' conduct.
  - **This measure not only enhances accountability but also nurtures a culture of collective responsibility** within political organisations.
- **Transparency and Public Accountability**
  - **The EC should maintain a publicly accessible database** documenting all reported MCC violations, along with their respective dispositions.
  - This **transparency enables citizens to monitor compliance with electoral regulations** and hold political actors accountable for their actions, thereby bolstering public trust in the electoral process.
- **Timely and Credible Adjudication**
  - **Delays in addressing violations undermine the MCC's deterrent effect** and erode public confidence in the EC's ability to enforce electoral regulations.
  - By **prioritising timely resolution of cases and ensuring impartiality** in decision-making, the **EC can demonstrate its commitment to upholding electoral integrity** and fairness.
- **Continuous Evaluation and Revision**
  - As new challenges emerge and electoral dynamics evolve, **policymakers must remain vigilant in identifying areas for improvement** and updating the MCC accordingly.
  - **This iterative approach ensures that the MCC remains relevant and effective** in safeguarding the integrity of India's electoral process.

The Role of Political Parties and Election Commission in Upholding the Integrity of Electoral Process

- **The Role of Political Leadership**
  - **Political leaders play a pivotal role** in upholding the integrity of elections **by adhering to ethical standards and promoting responsible conduct** within their parties.
  - By setting an example of ethical leadership, **politicians can cultivate a culture of integrity and accountability** among their supporters and party members.
  - **Effective self-regulation within political parties is essential** for minimising MCC violations and maintaining the integrity of electoral campaigns.
  - **And by demonstrating a commitment to fairness, transparency, and respect** for democratic principles, **leaders can inspire confidence in the integrity of elections** and foster civic engagement among voters.

The Role of Election Commission

- As the custodian of electoral integrity, **the Election Commission plays a crucial role in impartially adjudicating MCC violations** and enforcing electoral regulations.
- **Prompt and decisive enforcement of the MCC is essential** for deterringviolations and maintaining the integrity of electoral campaigns.
- **The EC must uphold public accountability** by maintaining transparency in its actions and decisions related to MCC enforcement.
- **By providing regular updates on reported violations**, adjudication outcomes, and enforcement measures, **the EC creates public trust** in its ability to safeguard the integrity of elections.
- **Enhancing the EC's capacity for MCC enforcement is crucial** for effectively addressing emerging challenges and ensuring the integrity of electoral processes. This includes
  - Investing in training programs,
  - **Technological infrastructure, and**
  - **Human resources to enable the EC to adapt to evolving electoral dynamics** and enforce regulations effectively.

Conclusion

- **The MCC represents a vital safeguard against electoral malpractice,** but its efficacy is contingent on robust enforcement and continuous adaptation to changing circumstances.
- **By implementing the proposed reforms** and fostering a culture of ethical leadership, **India can reinforce the integrity of its democratic processes,** ensuring free and fair elections for all citizens.

7. Pakistan's New Hangor Class Submarines

Recent events of importance

- **Why in News:**Pakistan recently launched the Hangor class submarine (built by China) at a Wuhan shipyard. This was the first of eight submarines that the Pakistan Navy is set to induct into its fleet by 2028.
- **Basic Characteristics**- The Hangor-class, an export variant of the Chinese Type 039A Yuan class, is a diesel-electric attack submarine named after PNS Hangor (now decommissioned), which famously sank Indian frigate INS Khukri during 1971 war. It boasts four diesel engines, is equipped with an Air Independent Propulsion (AIP) system to increase its endurance underwater, has six 21-inch torpedo tubes, and is capable to launch anti-ship missiles, as well as the Babur-3 subsonic cruise missile (with 450km range).
- **Comparison with India's Kalavari Class-**
  - Hangor class is significantly bigger in size than the Kalavari class which is based on French Scorpene-class, but small size makes Kalavari class much more maneuverable.
  - Both the submarines have same top speed of 20 knots (37 kmph).
  - Kalavari class doesn't come with built-in AIP as the Hangor. This matters because submarines' USP is their ability to be stealthy, which comes from their capability of remaining underwater for extended time period. An AIP system can increase submarines' underwater endurance manifold (upwards of 15-20 days).
  - In terms of armament, Kalavari class carries six 21 inch, German-made torpedoes, and missile systems like French Exocet anti-ship missiles, and MICA anti-air missiles. This is likely superior, and more battle tested than Hangor's armament.
  - Both submarines don't have vertical launch systems (like the ones in India's nuclear Arihant class), which would allow it to carry bigger cruise missiles.
  - Both submarine classes carry state of art sensor suites, although details of Hangor's capabilities are not known yet.

HANGOR CLASS SUBMARINE

China has built a variant of its Yuan class diesel-electric submarine for use by the Pakistan Navy

EXPRESS NEWS SERVICE
NEW DELHI, APRIL 29

THE FIRST Hangor class submarine, built by China for Pakistan, was launched on April 26 at a Wuhan shipyard. This was the first of eight submarines of this class that the Pakistan Navy is set to induct by 2028.

Basic characteristics

The Hangor class, an export variant of the Chinese Type 039A Yuan class, is a diesel-electric attack submarine, named after the now decommissioned *PNS Hangor*, which famously sank the Indian frigate *INS Khukri* during the 1971 war.

"Diesel-electric" refers to the mode of propulsion — diesel engines power the submarine when surfaced or snorkelling (as they need air to operate), while a battery, charged by the diesel engine, allows the vessel to operate while submerged. The Hangor class has four diesel engines. It is also equipped with an air independent propulsion (AIP) system, which significantly increases the submarines' endurance underwater.

Attack submarines are specifically designed for sinking other submarines or surface vessels using torpedoes, or in modern times, cruise missiles. The Hangor class has six 21-inch torpedo tubes and capabilities to launch anti-ship missiles, as well as Babur-3 subsonic cruise missiles, which have a range of 450 km.

Compared with Kalvari class

Pakistan's Hangor class is the direct counterpart of India's Kalvari class of submarines, based on the French Scorpene class. India currently operates six Kalvari class submarines, and three more will be inducted into service by the early 2030s.

In terms of size, the Hangor class is significantly bigger than the Kalvari class, which displaces 1,775 tonnes and is 67.5 m long. The Hangor class has a displacement of 2,800 tonnes, is 76 m in length, 8.4 m in width (at its widest point), and has a draught (depth of the vessel below the waterline) of 6.2 m when on the surface.

The bigger size could be a disadvantage in shallow, littoral waters. The Pakistani submarine has a reported top speed of 20 knots (37 kmph).

The Kalvari class, like the Hangor class, runs on diesel-electric propulsion. However, the models India currently operates do not come with built-in AIP. This means that in terms of underwater endurance, the Hangor class potentially has an edge over the Kalvari class.

This matters because submarines' USP is their ability to be stealthy — much of which comes from their capability to remain underwater for extended periods of time. Conventional diesel-electric submarines need to surface to recharge their batteries after a few days (2-3, depending on the battery used), making them detectable to enemy radar and exhaust fumes sensors. An AIP system can increase submarines' underwater endurance manifold (upwards of 15-20 days).

In terms of armament, the Kalavari class carries six 21 inch, German-made torpedoes, and missile systems such as French Exocet anti-ship missiles, and MICA anti-air missiles.

A Chinese Yuan class submarine, of which the Pak Hangor class submarine is a variant. *US Naval Institute*