13th Nov, 2024

1. <u>India's Retail Inflation</u>
GS 3 (Economy)

- **Why in News:** India's retail inflation surged to **6.21% in October 2023**, marking the highest level in 14 months. The inflation rate exceeded the **Reserve Bank of India's target range** of 2% to 6% for the first time since August 2023. This rise in inflation is being attributed primarily to sharp increases in food prices, especially **vegetables** and **edible oils**.

FOOD PRICES DRIVE OCTOBER CPI INFLATION TO 6.2%

Retail inflation rises to 14-month high, hopes of rate cut next month recede

Manufacturing, mining and power help factory output improve to 3.1% in Sept from contraction of 0.1% in Aug

AANCHAL MAGAZINE
NEW DELHI, NOVEMBER 12

RETAIL INFLATION rate surged to a 14-month high of 6.21 per cent in October with a sharp rise in prices of food items, especially fruits, vegetables, meat and fish, and oils and fats, data released Tuesday by the National Statistical Office (NSO) showed.

Food inflation, based on the Consumer Food Price Index (CFPI), shot up to a double-digit level of 10.87 per cent in October — a 15-month high — from 9.24 per cent in September and 6.61 per cent in the year-ago period.

Separately released data by the NSO showed India's factory output, as measured by the Index of Industrial Production (IIP), improved to 3.1 per cent in September from a contraction of 0.1 per cent in August, mainly due to pickup in manufacturing, mining and electricity sectors.

Food inflation has risen to double digits after a gap of 14 months for the first time since July 2023, the NSO statement showed — it was released at 4 pm for the first time after the advancement of the data releases from 5.30 pm.

With the October print, the headline retail inflation rate, based on Consumer Price Index (Combined), has again breached the 4 per cent mark in the 4+/-2 per cent band of RBI's medium-term inflation target for the second consecutive month.

CONTINUED ON PAGE 2

- **Key Findings**
  - **Overall Inflation Rate**
    - In October, India's retail inflation stood at **21%**, up from **5.49%**in September.
    - This marked a significant jump from earlier months: **65% in August** and **3.54% in July**.
  - **Food Prices Drive Inflation**
    - The inflation in **food prices** urged to a **15-month high of 10.87%** in October, compared to **24% in September**.
    - Food inflation was notably higher in **urban areas (11.09%)**compared to **rural areas (10.69%)**.
  - **Key Drivers of Food Inflation**
    - **Vegetables** saw the steepest price rise, with inflation reaching **18%**, up from **35.99%** in September.
    - **Edible oils**also saw a sharp increase in inflation, rising from **47% in September** to **9.51% in October**, largely due to a **27% rise in global prices** caused by supply disruptions.
  - **Causes of Food Price Hikes**
    - The **surge in vegetable prices**, particularly tomatoes and onions, was driven by **unseasonal rains** and **extended monsoons** in certain parts of India.
    - The global rise in edible oil prices is due to **supply disruptions**, affecting inflation in the oils and fats sector.
- **CPI-based Inflation or Retail Inflation**
  - CPI-based inflation or retail inflation **tracks changes in the retail prices of goods and services** that households typically purchase for daily consumption. This measure reflects the cost of living for consumers
  - **Inflation Calculation:** Inflation is calculated as the percentage change in the CPI over a specific period, usually comparing the current price level with the price level from the same period in the previous year.
  - **Deflation:** If prices decrease, it is called deflation (negative inflation).
  - **Role of CPI in the Economy**
    - **Macroeconomic Indicator:** CPI is used as a key macroeconomic indicator to measure inflation and monitor price stability.
    - **Central Bank's Focus:** The Reserve Bank of India (RBI) closely tracks CPI to maintain price stability and for inflation targeting.
    - **Economic Health**: CPI also provides insights into the purchasing power of the national currency, the real value of wages, and salaries.
  - **Formula for calculating CPI:** (Price of basket in current period / Price of basket in base period) x 100

2. <u>Debating the 'healthy longevity initiative'</u>
GS 2 (Health)

- **Why in News:** The World Bank's Report on Healthy Longevity published in September 2024 highlights the critical challenge posed by the rising prevalence of non-communicable diseases (NCDs) in Low-and-Middle-Income Countries (LMICs), especially India. The report stresses the urgency of tackling aging populations and NCD-related deaths while providing strategies for healthy longevity. India, with its rapidly aging population, faces significant challenges in curbing NCDs such as cardiovascular diseases, diabetes, and cancer, which are leading causes of mortality and morbidity

Debating the 'healthy longevity initiative'

Once in a while, the World Bank publishes a visionary and profound report on an important aspect of human well being. A case in point is 'Unlocking the Power of Healthy Longevity: Demographic Change, Non-communicable Diseases, and Human Capital' that was published in Washington DC in September 2024. A significant demographic transformation is underway with a rapidly aging population. This transformation is accompanied by a shift in most Low-and Middle-Income Countries (LMIC) such that non-communicable diseases (NCD) are the leading cause of deaths. Most NCD deaths occur in LMICs, and the proportion of all deaths caused by NCDs is likely to surge among them.

Projections suggest a global surge in deaths from 61 million in 2023 to 92 million in 2050, as well as related increases in needs for NCD-related hospitalisation and long-term care. If LMICs can achieve ambitious yet feasible rates of progress, the world could avert 25 million deaths annually by 2050, effectively halving avoidable deaths and meeting the related Sustainable Development Goals (SDG).

Driven by this concern, the World Bank report proposes a healthy longevity initiative (HLI) which takes a life course approach. Briefly, healthy longevity entails sharply reducing avoidable death and serious disability throughout the life cycle, as well as increased levels of physical, mental, and social functioning through middle and older ages, and short period of time before inevitable death (World Bank, 2024). Whether this is feasible in LMICs, especially India, is debatable.

Curiously, it imagines a world in which health care is accessible, doctors and nurses, and para medical staff are competent, honest, and committed to proper patient care, hospitals are well-equipped, the monitoring of patients is systematic and digitised, and there is an awareness of benefits of early detection and treatment of NCDs. While the World Bank report discusses catastrophic health expenses and impoverishment, and inadequate state funding of health care, the chasm between the real world and that which is subsumed in the HLI is much too deep to be overlooked. Indeed, a world without quacks, corrupt doctors, exploitative hospitals, pharmaceutical companies pushing unsafe medicines, and patients with chronic conditions travelling hundreds of miles is rarefied.

The objectives and the strategy of reducing the surge in NCDs must, therefore, be modest and feasible. A recent study by the writers of this article of the growing burden of NCDs in India is a step in this direction.

India's elderly population, disease concerns

The older population of India is currently the world's second largest – 140 million people who are aged 60 years and above (compared to 250 million people in China). Moreover, the average annual growth rate of the older population is almost three times higher than the overall population growth rate of India.

The swift descent of the elderly in India (60 years-plus) into NCDs (for example, cardiovascular diseases, cancer, chronic respiratory diseases and diabetes) could have disastrous consequences in terms of an impoverishment of families, excess mortality, lowering of investment and a consequent deceleration of economic growth. Worse, the government has to deal simultaneously with the rising fiscal burden of NCDs and infectious diseases. As a report by *The Lancet* (2018) emphasises, failure to devise a strategy and make timely investment now will jeopardise achievement of SDG 3 ('good health and well-being') and target 4 of a one-third reduction in premature mortality from NCDs by 2030.

NCD morbidity and mortality as shares of total morbidity and mortality have risen steadily in India. In 1990, NCDs accounted for 40% of all Indian mortality and are now projected to account for three quarters of all deaths by 2030. Currently, cardiovascular diseases, cancer, respiratory illness and diabetes are the leading causes of deaths in India, accounting for almost 50% of all deaths (*The Lancet*, 2018).

Underlying these rising shares are growing risks that are common to several NCDs. These include tobacco use, alcohol abuse, and obesity due to sedentary lifestyles and diets that are getting to be increasingly high in simple carbohydrates and saturated fats. Many populations, particularly in remote rural areas, lack easy or frequent access to primary health-care practitioners who can provide regular screenings for common NCDs.

Impact of social security schemes

The focus here is on diabetes and heart diseases. The writers of this article examine whether participation in social security measures/schemes reduces the prevalence of two specific NCDs followed by whether utilisation of medical services/hospital visits also reduces the prevalence of NCDs. As the India Human Development Survey 2015 is the only all-India panel survey to date, the analysis is based on this survey, supplemented by Longitudinal Aging Study in India (LASI 2017-18) conducted jointly by the International Institute for Population Sciences (IIPS) and Harvard School of Public Health.

Even though pension amounts are meagre, they supplement scanty resources of the elderly poor in covering health-care expenses and thus reduce the NCDs. For treatment of such diseases, hospital visits are unavoidable. However, travel costs, fees and costs of medicines impose a huge financial burden, resulting in large out-of-pocket expenditure and indebtedness and immiseration. While health insurance is useful in restricting the financial burden, this potential is far from fully realised due to limited awareness of eligibility requirements, elaborate documentation, delays in payments, and rejection of claims.

Diets high in refined grain intake cause an increased risk of premature coronary artery disease while rice intake beyond a threshold causes diabetes. Higher intake of red meats such as beef, pork and mutton also contribute to higher risks of diabetes and heart diseases. Besides, a rise in the price ratios of fat-dense foods (sugar and oil) aggravates the risk of both diabetes and heart disease.

Confirming the age gradient, the risks of diabetes and heart diseases are positively associated with age. There are various reasons why diabetes rises with age such as a sedentary lifestyle, high-calorie diet, visceral adiposity, and high genetic predisposition mellitus (type 2) diabetes among Indians at a much younger age and at a lower body mass index (BMI) than the western population.

Of particular importance is the Ayushman Bharat Scheme that aims to provide health insurance coverage to the bottom 40% of households. But its potential has been far from fully realised due to inadequate funding and stringent eligibility requirements, and colossal corruption as revealed by the Comptroller and Auditor General of India (CAG) 2023 (for example, large numbers of ineligible beneficiaries, long delays in empanelment of hospitals, surgeries performed after discharge, and utilisation certificates without signature of competent authorities). However, insurance alone might not be sufficient to achieve access to quality care, which depends on health-care infrastructure, provider availability, and local culture.

Hospital expenses

As private hospitals are notorious for inflated prices of health care, the Supreme Court of India directed the central government in February 2024 to find ways to regulate the rates of hospital procedures. As the Court observed, pricing decisions must be informed by a benchmark for price determination. While price caps do influence actors' behaviour by making them follow the regulations, these effects tend to be temporary when enforcement mechanisms are weak.

Behavioural changes are no less important, and perhaps also no less challenging. Lack of physical activity and unbalanced high-calorie diet promote weight gains. Obesity is a risk factor for cardiovascular diseases and diabetes and can aggravate risks of cardiovascular disease such as emphysema and bronchitis. Limiting tobacco consumption is expected to have benefits at the individual level but wider reduction in multi-morbidity prevalence requires taxation on unhealthy products.

In conclusion, if and when these policy reforms will be carried out is anybody's guess.

Raghav Gaiha
Research Affiliate, Population Aging Research Centre, University of Pennsylvania, U.S.

Vidhya Unnikrishnan
Lecturer in economics, University of Manchester, U.K.

Vani S. Kulkarni
Research Affiliate, Department of Sociology, University of Pennsylvania, U.S.

The divide between the real world and the strategy to be adopted in the healthy longevity initiative is too wide to be ignored

- **Demographic and Health Trends in India**
  - **Aging Population:** India's elderly population (60+ stands at 140 million, making it the world's second-largest. The elderly population is growing at a rate three times higher than the overall population growth rate.
  - **Prevalence of NCDs:** NCDs now account for over 50% of all deaths in India, with cardiovascular diseases, cancer, diabetes, and respiratory diseases being the leading causes. By 2030, NCDs are projected to account for three-quarters of all deaths in the country.
  - **Health Risks and Behavioral Factors:** Key risk factors for NCDs include tobacco use, alcohol abuse, obesity, and sedentary lifestyles. Additionally, poor dietary habits with increasing intake of processed foods contribute significantly to the rising incidence of chronic diseases.
- **Socioeconomic Impact of NCDs**
  - **Financial Burden on Families:** The treatment of chronic diseases imposes a severe financial burden on families, with out-of-pocket expenses for hospital visits and medicines pushing many into indebtedness.
  - **Inadequate Social Security:** India's social security schemes, like the Ayushman Bharat Scheme, offer limited financial relief due to meagre pension amounts, rigorous eligibility requirements, and administrative inefficiencies.
  - **Lack of Healthcare Access:** Rural areas face significant challenges in accessing primary healthcare, with infrequent screenings and limited healthcare infrastructure exacerbating the burden of NCDs, particularly in remote regions.
- **Policy and Health System Challenges**
  - **Healthcare Infrastructure:** The quality of private healthcare is often compromised by inflated prices and unregulated hospital fees. The Supreme Court's 2024 directive to regulate healthcare pricing highlights ongoing concerns over affordability.
  - **Inefficiencies in Health Insurance:** Health insurance schemes like Ayushman Bharat are not fully effective due to bureaucratic delays, corruption, and lack of awareness about eligibility, limiting their reach among the poorest.
  - **Need for Behavioral Change:** Addressing NCDs requires behavioral reforms, such as promoting physical activity and reducing consumption of unhealthy foods. A taxation policy on unhealthy products, such as tobacco and sugary foods, is suggested to curb the rising burden of NCDs.

3. **A mixed report card for the India-Middle East-Europe Corridor**
GS 2 (International Relations)

- **Why in News:** The **India-Middle East-Europe Corridor (IMEC)** was announced in September 2023 during the G20 summit in New Delhi, marking a significant step towards enhancing global trade connectivity. The corridor aims to reduce transit times and costs by 40% and 30%, respectively, compared to the traditional Suez Canal route. While the corridor promises to be a game-changer for international maritime trade, progress on the project has been delayed due to geopolitical tensions in the West Asian region, particularly the ongoing conflict between Israel and Palestine.

A mixed report card for the IMEC

In September 2023, the ambitious transcontinental India-Middle East-Europe Corridor (IMEC) was announced on the sidelines of the G20 summit in New Delhi. The proposed corridor is expected to reduce the transit time between its eastern and western nodes by 40%, and costs by 30%, compared to transportation via the Suez Canal. These numbers may vary as the actual benefits may end up being on the lower side, but there is no denying that the new corridor, once operational, will be a game changer for the international maritime trade. Therefore, it is important to understand how the idea has shaped since its announcement and what lies ahead of it.

Afaq Hussain
Director, Bureau of Research on Industry and Economic Fundamentals, New Delhi

Akhtar Malik
Head of Programmes at Bureau of Research on Industry and Economic Fundamentals, New Delhi

Progress on both ends

Over the past year, various challenges have delayed progress on the project. The announcement of the corridor came with much optimism. However, this did not last long, as the very premise which led to the conception of this idea, namely, the normalisation of Arab-Israel relations, came to a sudden halt with the escalation of the conflict between Israel and Palestine on October 7 last year. This crisis engulfed the whole of West Asia for the larger part of the year, which put the corridor on the back-burner. As a result of the temporary pause, two key stakeholders, Saudi Arabia and Jordan, have not been able to make any progress on the project. Though it may be argued that the official relations between Arab countries and Israel won't impact completion of work on the ground, the two governments, which will have to work closely with the Israeli establishment for the project, would not want the optics and its geopolitical dimension. Therefore, implementation on the northern part of the corridor, which is mostly in West Asia, is going to move slowly until the ongoing escalation subsides.

Implementation on the northern part of the corridor is going to move slowly until the West Asian conflict subsides, while progress is faster on the eastern leg connecting the UAE and Indian ports

On the eastern leg of the corridor connecting the United Arab Emirates (UAE) and Indian ports, things are moving forward at a relatively fast pace. The economic relations of the two countries are on a northward trajectory, which is also reflected in the increasing bilateral trade numbers. Post the signing of the Comprehensive Economic Partnership Agreement (CEPA) in 2022, bilateral trade has grown from \$43.30 billion in 2020-21 to \$83.64 billion in 2023-24 (a staggering 93%). Another important feature of the growing bilateral trade is the diversification of the trade basket between the two countries, which is reflected in the growing non-oil trade. The non-oil trade between India and the UAE grew from \$28.67 billion in 2020-21 to \$57.81 billion in 2023-24. This represents a healthy shift from an Indian perspective, considering that most of these commodities will be transported further west and north through the IMEC, thereby improving India's export share in the larger region.

Beyond amplifying trade volumes, the two countries are also working on the standardisation and facilitation of trade processes. Recently, India and the UAE launched the Virtual Trade Corridor. This will be an integral part of the IMEC, aimed at the reduction of administrative processes and time, reduction of logistics and transportation costs, and ease of doing trade. The streamlining of trade processes would not only serve bilateral relations, but also pave the way and provide a working model for other countries involved in the IMEC to develop similar frameworks for cross-border trade facilitation.

After more than a year since the IMEC was announced, we see an uncertain western part of the corridor trying to navigate through the conflict and a committed eastern part that is forging new linkages to ready itself for the new maritime order.

Further, given the one-year progress and the situation on the ground, it is clear that only the connectivity aspect of the IMEC initiative is gaining some traction at the moment. Other elements of the corridor, including clean energy export, undersea fiber-optic cables and pipelines, energy grid linkages, telecommunication lines, and clean energy technology cooperation, will have to wait till the situation in West Asia normalises. Therefore, the countries on the eastern part of the corridor should use this time to develop their capacity to improve connectivity among them.

What India can do

India, especially, can use this time to prepare its ports, develop specific economic zones along the connectivity nodes, and improve its domestic logistics for seamless integration with the IMEC. There is a need to improve the digital footprint in the domestic logistics landscape, which will help reduce logistics time and costs, thereby making Indian exports more competitive. Further, the corridor, as ambitious as it may be, is just the means. The actual benefits will be seen only if India can improve its integration in the global value chains. With IMEC, India aims to position itself as a global supply chain alternative. This can only happen if the country takes steps towards enhancing its manufacturing competitiveness.

Finally, it is time to push for the IMEC secretariat, which can make the structure and working of the IMEC more organised. For starters, the secretariat can work on developing the framework for streamlining the cross-border trade processes and empirical evidence-based research on benefits accruing to participating countries. This would help countries in the neighbourhood of the corridor to better understand the project. This may end up generating interest, which could result in them joining it.

- **Geopolitical Challenges and Delayed Progress**
    - **Impact of West Asian Conflict:** The normalization of Arab-Israel relations, a critical component for the successful implementation of IMEC, has been disrupted due to the **Israel-Palestine conflict.** This geopolitical crisis has caused delays, particularly in the northern part of the corridor, which involves key stakeholders like Saudi Arabia and Jordan.
    - **Slower Northern Implementation:** Given the diplomatic complexities and political sensitivities, work on the northern leg of the IMEC is expected to proceed at a slower pace until the security situation in the region stabilizes. This will delay the full realization of the corridor's potential.
    - **Strategic Importance of the Project:** Despite these setbacks, the IMEC remains a highly significant project, especially for global trade routes, as it promises to reduce shipping time and costs, positioning the corridor as a key alternative to the Suez Canal.
- **Progress on the Eastern Leg and India-UAE Cooperation**
    - **Growing India-UAE Trade:** On the eastern leg of the IMEC, there has been significant progress, particularly in bilateral trade between India and the UAE, which has grown by 93% from 2020 to 2023, driven by the **Comprehensive Economic Partnership Agreement (CEPA).**
    - **Non-Oil Trade Expansion:** The shift towards non-oil trade between India and the UAE has strengthened the corridor's role in fostering diversified trade. This trade expansion is crucial for India's broader goals to increase its exports via the IMEC.
    - **Virtual Trade Corridor:** The launch of the Virtual Trade Corridor between India and the UAE aims to streamline cross-border trade processes, reducing administrative and logistical costs. This initiative is a step toward creating a model for facilitating trade across all IMEC participant countries.
- **Future Prospects and India's Role in IMEC**
    - **India's Port and Logistics Development:** India has the opportunity to use the delays in the northern leg of the IMEC to enhance its port infrastructure and domestic logistics. Streamlining logistics and improving the digital footprint in the sector will make Indian exports more competitive.
    - **Integration into Global Supply Chains:** The full benefits of the IMEC will be realized only if India can strengthen its manufacturing sector and enhance its integration into global value chains. This is essential for India to become a viable global supply chain alternative.
    - **Need for an IMEC Secretariat:** To ensure the smooth functioning of the project, an IMEC Secretariat should be established to coordinate activities, streamline trade, and provide empirical data on the benefits for participating countries. This could also encourage other nations to join the corridor.

4. DRDO's Long Range Land Attack Cruise Missile (LRLACM)
GS 2 (Security)

- **Why in News:** The Defence Research and Development Organisation (DRDO) successfully conducted the maiden flight test of the **Long-Range Land Attack Cruise Missile (LRLACM).**
- **About LRLACM**
    - The **Long Range Land Attack Cruise Missile (LRLACM)** is designed to enhance India's capabilities in strategic defence and long-range precision strikes.
    - **Developed by:** Defence Research and Development Organisation's (DRDO) **Aeronautical Development Establishment (ADE)**in Bengaluru, with contributions from several DRDO laboratories and Indian industries.
    - **Bharat Dynamics Limited (BDL)**in Hyderabad and **Bharat Electronics Limited (BEL)** in Bengaluru were the Development-Cum-Production Partners involved in the missile's development and integration.
    - **Mission Mode Project**: LRLACM is a **Defence Acquisition Council (DAC)-approved** project, sanctioned under the **Acceptance of Necessity (AoN)**
    - The project is considered a **Mission Mode Project**, which is typically used for critical defence capabilities requiring immediate operational readiness.
- **Key Features of LRLACM**
    - **Launch Flexibility**: The missile is designed to be launched from **mobile ground-based systems** and **frontline ships**, offering enhanced operational flexibility. It uses a **universal vertical launch module** system, allowing for easy integration with different launch platforms.
    - **Missile Design**: LRLACM is configured to be launched both from **mobile articulated launchers** on land and **naval vessels**, making it adaptable to various operational environments.

DRDO carries out maiden test of long range cruise missile

The Hindu Bureau
NEW DELHI

Defence Research and Development Organisation (DRDO) on Tuesday conducted the maiden flight-test of a Long Range Land Attack Cruise Missile (LRLACM), with a range of 1,000 km, from the Integrated Test Range, Chandipur off the coast of Odisha from a mobile articulated launcher. This is a new variant of *Nirbhay* LRLACM with improved features, officials confirmed.

The Defence Acquisition Council had approved procurement of the LRLACM in July 2020.

The missile has been developed by the Aeronautical Development Establishment, Bengaluru.


The Long Range Land Attack Cruise Missile being launched off Odisha. SPECIAL ARRANGEMENT

Once inducted, the LRLACM, similar to U.S. Tomahawk cruise missile, will give Indian armed forces a long-range standoff capability to strike targets on land.

5. India's Carbon Market (Boost from COP29 Agreement)
GS 3 (Environment)

- **Why in News:** India's plan to set up a national carbon market received a significant boost at the **29th Conference of the Parties (COP29)** in Baku, Azerbaijan. At this climate conference, the **United Nations Framework Convention on Climate Change (UNFCCC)** ratified key rules for a **global carbon trading mechanism** under the **Paris Agreement.**
- **Key-Takeaways from COP29**
    - **Ratification of Article 6.4 Rules**
        - The **COP29**conference saw a **consensus on rules** for projects to qualify for carbon credits under **Article 6.4** of the **Paris Agreement**.
        - Article 6 enables countries to meet their **Nationally Determined Contributions (NDCs)**—the climate targets each country sets to reduce emissions—through **market-based mechanisms**, such as carbon credits.
        - The approval of these rules ensures that **carbon credits**can now be issued, traded, and used under the UNFCCC framework to **offset emissions** and support national climate commitment.

In Baku breakthrough, COP clears carbon credit trade

Such a market will allow countries to trade carbon credits among themselves; conference president says this will be a game-changing tool to direct resources to the developing world

Jacob Koshy
NEW DELHI

Countries assembled in Baku for the annual climate conference, COP29, voted on Tuesday to clear a much-delayed agreement to finalise a global carbon market. Such a market will allow countries to trade carbon credits – certified reductions of carbon emissions – among themselves, and the prices of these instruments are determined as a consequence of emission caps imposed by countries.

The market itself follows from Article 6 in the Paris Agreement. Sub-sections of the Article spell out how countries can bilaterally trade carbon among themselves (Article 6.2) and participate in a global carbon market (6.4).

Though most of the nuts and bolts to make operational such a carbon market supervised by a United Nations body have been in place since 2022, there were several niggles, particularly in ensuring that the carbon credits generated are genuine and its antecedents are transparent.

There have been several rounds of talks involving the parties (country signatories to the Paris Agreement) on these outstanding concerns that are raised. Last month, a UN supervisory body, which will be the ultimate arbitrator of the market, set out a draft text that laid out the standards for carbon removal and assessing projects.

A senior official who is part of the Indian delegation told *The Hindu* days before COP29 commenced that even this version was not "entirely acceptable", but was something that could be ironed out.

Planetary mission: Delegates at the COP29 Climate Summit in Baku, Azerbaijan on Tuesday. AP

A key issue surrounding carbon markets is accounting. Say, a company in a developed country finances an afforestation project in a developing country and this theoretically prevents 1,000 tonnes of carbon from being released into the atmosphere. Will this saved carbon be part of the developed country's ledger of saved credits when the actual prevention is happening elsewhere? At what stage of a renewable energy project's life-cycle will a generated credit be considered eligible for trade? Can countries claim credits generated in their own borders, financed by foreign companies, and count them towards their Nationally Determined Contributions (NDC)?

"This will be a game-changing tool to direct resources to the developing world," Mukhtar Babayev, COP29 president, said. "Following years of stalemate, the breakthroughs in Baku have now begun. But there is much more to deliver," he added.

Finalising Article 6 negotiations could reduce the cost of implementing national climate plans by $250 billion per year by enabling cooperation across borders.

"The decision on Article 6.4 is a major step forward. There is still some time till the rubber hits the road as now the methodologies for implementing have to be finalised but this should be fairly soon. However, this should not take the focus away from the New Collective Quantified Goal (NCQG) as carbon markets are one of the ways to deliver on the NCQG," Vaibhav Chauturvedi, an expert on carbon markets, Council on Energy Environment and Water, Delhi, told *The Hindu*.

- **Global Carbon Market and Integrity**
  - The ratified rules are designed to ensure that the international carbon market operates with **integrity**—meaning the emission reductions achieved are **real, additional, verified, and measurable**.
  - This aims to **increase demand for carbon credits**, facilitating climate action and investment in emission-reduction projects, especially in developing countries.
- **India's Delayed Carbon Market Launch**
  - India had faced delays in setting up its own carbon market due to the **non-finalisation of rules under Article 6**. Indian officials have projected that India's **carbon market**could begin operations by **late 2025 or 2026**, three years after the government authorized the **Bureau of Energy Efficiency (BEE)** to create the necessary mechanisms.
  - India has been keen on using Article 6-compliant markets to channel investments in emission-reduction projects, leveraging cost-effective mitigation strategies.
- **Article 6: Key Framework for Global Carbon Markets**
  - **Article 6**of the **Paris Agreement** allows countries to achieve their emission reduction targets through international cooperation, using **market-based mechanisms**.
  - Article 6.4, approved at COP29, establishes a **carbon crediting mechanism** where emission reductions can be traded internationally.
  - These credits will be used by countries to meet their climate goals under the **Paris Agreement**, while also allowing companies to comply with their national regulations.

- **What is Carbon Market?**
  - Carbon markets, also known as **emissions trading mechanisms**, are trading systems in which **carbon credits** are sold and bought.
  - It is a mechanism that internalises the cost of **greenhouse gas (GHG) emissions** in goods and services.
  - Companies or individuals can use carbon markets to compensate for their greenhouse gas emissions by purchasing carbon credits from entities that remove or reduce greenhouse gas emissions.
  - There are broadly two types of carbon markets
    - **Compliance markets** are created as a result of any national, regional and/or international policy or regulatory requirement.
    - **Voluntary carbon markets** (national and international) refer to the issuance, buying and selling of carbon credits, on a voluntary basis.
    - **Compliance Procedure**: In August 2024, the **Bureau of Energy Efficiency (BEE),**responsible for implementing CCTS, released the scheme's compliance procedures. However, specific emission targets are still to be announced.
  - **Purpose of a Carbon Market in India**
    - The goal is to move towards a more efficient use of energy, switching from fossil fuels to renewable energy as power generation increases.
    - **Nationally Determined Contributions (NDCs):**This scheme is part of India's commitment under the Paris Agreement to reduce emissions intensity by 45% from 2005 levels by 2030.
    - **Net-Zero Target:**India has also pledged to become a **net-zero emitter** by 2070.
    - India is the **world's third-largest carbon emitter**, contributing 3%to the global greenhouse gas emissions in 2021.
- **Current State of Carbon Markets in India**
  - Globally, there are **over 28 emission trading systems**in existence, and plans are in place for more than 21 additional national and sub-national emission trading markets. Meanwhile, India is actively developing a framework for its domestic carbon market.
  - India currently operates two market-based emission reduction schemes: **the Perform, Achieve and Trade (PAT) scheme and the Renewable Energy Certificates (REC) system.**
  - **PAT scheme** targets energy-intensive industries such as **aluminium, cement, chlor-alkali, fertiliser, iron and steel, paper and pulp, railways, thermal power and textil** Under this scheme, the government sets energy reduction goals, known as **specific energy consumption (SEC),** for companies in particular sectors. If a company uses less energy per unit of production than the established targets, it can earn certificates

  - (ESCerts) as a reward for saving energy. The earned ESCerts can be traded on Power Exchanges and purchased by other units participating in the PAT scheme to fulfill their compliance needs.
  - **REC system** operates under the **Renewable Purchase Obligation (RPO)**, which mandates electricity generators to produce a certain percentage of their total power from renewable sources like solar and wind, etc. These certificate scan be traded and are intended to promote the use of renewable energy sources.
- **Carbon Credit Market and India's Role**
  - India is expected to benefit from carbon markets by attracting **climate finance**, especially in sectors like **energy, industry**, and **clean technology**.
  - India is hoping to **reduce emissions** while promoting **economic growth** through the trade of carbon credits in the international market.
  - As per the **UN Climate Change**, the climate finance needs of **98 nations** are estimated at **$500 billion annually**, with **Article 6** potentially providing **$250 billion** of that amount, mainly through cross-border cooperation and investments.

- **Global Carbon Budget (GCB)**
  - **Carbon emissions** from fossil fuels are set to rise by **0.8% in 2024** compared to 2023. This is a slower rise than in **2023**, when emissions increased by **1.2%** over 2022.
  - **China** (31%), the **United States** (13%), **India** (8%), and the **EU-27** (7%) contribute the largest share of global **fossil CO2 emissions**. Together, they account for **59%** of all global emissions.
  - **Carbon Emissions by Region and Country**
    - **China** is the largest emitter, expected to release **12 billion tonnes of CO2** in 2024, followed by **India** with **3.2 billion tonnes**, and the **United States** with **4.9 billion tonnes**.
    - **India's emissions** are expected to increase by **4.6%** by the end of 2024, while **China's** are expected to rise by just **0.2%**.
  - **Per-Capita Emissions:** Global **per-capita emissions** (average emissions per person) were **1.3 tonnes** of CO2 in 2023. However, there are large differences across countries:
    - **US**: 3.9 tonnes per person
    - **China**: 2.3 tonnes per person
    - **EU-27**: 1.5 tonnes per person
    - **India**: 0.6 tonnes per person
  - **Impact of Fossil Fuels:** The use of **coal, oil, and gas** is expected to slightly increase in 2024, with coal emissions rising by **0.2%**, oil by **0.9%**, and gas by **2.4%**. The concentration of **CO2** in the atmosphere is expected to reach **422.5 ppm (parts per million)** in 2024, which is **52% higher than pre-industrial levels**.
  - **The 1.5°C Target is in Danger**
    - The report warns that the **remaining carbon budget** (the amount of CO2 that can be emitted without exceeding the 1.5°C global temperature rise) is rapidly depleting.
    - The global temperature has already **crossed the 1.5°C mark** (relative to pre-industrial levels) in January 2024.
  - There is now a **50% chance** that the remaining carbon budget will be exhausted in about **six years**, making it very difficult to meet the **Paris Agreement's** goal of limiting warming to **1.5°C**.

6. <u>Rules under new Water Act notified</u>
GS 2 (Governance)

- **Why in News:**
  - The Central Government has notified new rules to streamline the process of inquiry and imposition of penalties for water pollution offenses under the Water (Prevention and Control of Pollution) Act, 1974. These rules are called the **Water (Prevention and Control of Pollution) (Manner of Holding Inquiry and Imposition of Penalty) Rules, 2024**.
  - The Rules come in the backdrop of the amendments made to the Water Act earlier this year. This notification strengthens regulatory oversight while streamlining the adjudication process for water pollution violations.

Centre notifies new Water Act rules

EXPRESS NEWS SERVICE
NEW DELHI, NOVEMBER 12

THE UNION Environment Ministry Monday notified new rules for holding inquiry and imposing penalties for violations of the Water (Prevention and Control of Pollution) Act. The new Rules – Water (Prevention and Control of Pollution) (Manner of Holding Inquiry and Imposition of Penalty) rules, 2024, will come into effect immediately.

The Rules come after the amendments made to the Water Act earlier this year, wherein offences and violations of the Act were decriminalised, replacing them with penalties instead.

The amendments had also allowed the Centre to appoint officers to adjudicate offences, violations and determine penalties.

"The Central Pollution Control Board, State Pollution Control Boards, Pollution Control Committees and Integrated Regional Offices of the Ministry of Environment, Forest and Climate Change, in their respective jurisdictions, through their authorized Officers, or any other persons, may file a complaint …to the adjudicating officer regarding any contravention committed under sections 41, 41A, 42, 43, 44, 45A and 48 of the Act," the new Rules state.

These sections relate to contravention of norms on releasing industrial effluents and pollutants.

According to the Rules, the adjudication officer has powers to issue notice to persons against whom complaints have been filed. An adjudication officer has to be a person not below the rank of a joint secretary or secretary to the state government. The adjudication office then considers the explanation provided and if needed, holds an inquiry. The alleged violator could defend themselves or through a legal representative. The process has to be completed within 6 months from issuance of notice, the Rules state.

- **Water Act 1974 and the need for amendment**
  - **Background – Water Act 1974**
    - The Water (Prevention and Control of Pollution) Act was enacted in 1974 to provide for the prevention and control of water pollution.
    - The Act prescribes various penal provisions for non-compliance or contravention of the provisions punishable with imprisonment.
  - **Need for the amendment**
    - The Amendment was brought to uphold the principle that **democratic governance lies in the government trusting its own people and institutions**.
    - The Water Act 1974 had provision of imprisonment of up to three months for not informing the State Board about abstraction of water from a stream or well.
    - The imprisonment provisions for minor violations which are simple infringements, not leading to any injury to humans or damage to the environment, many a times cause harassment to business and citizen.
    - It is also not in consonance with the spirit of Ease of Living and Ease of Doing Business.
    - Therefore, the Water (Prevention and Control of Pollution) Amendment Bill, 2024 proposes rationalising criminal provisions.
- **Key highlights of the Water Act 2024**
  - **Introduction and Applicability**
    - It applies initially to Himachal Pradesh, Rajasthan, and union territories, with **provisions for other states to adopt it through state resolutions.**
  - **Decriminalization and New Penalties**
    - It decriminalizes various violations, removing imprisonment for several offences and replacing it with monetary penalties ranging from Rs 10,000 to Rs 15 lakh.
    - However, failure to pay penalties can still result in imprisonment of up to three years or fines up to twice the original penalty amount.
  - **Consent Exemptions for Industry Establishment**
    - While the 1974 Act requires SPCB consent for industries likely to discharge sewage, the 2024 Act allows the central government, in consultation with CPCB, to exempt specific categories of industries from this requirement.
    - Guidelines for SPCB consent processes may also be issued by the central government.
    - Penalties for tampering with monitoring devices are set between Rs 10,000 and Rs 15 lakh.
  - **State Pollution Control Board (SPCB) Chairman Appointments**
    - The Act requires the central government to prescribe the nomination process and terms for SPCB chairmen, adding central oversight in appointments which were previously state-determined.
  - **Regulations on Polluting Matter Discharge**

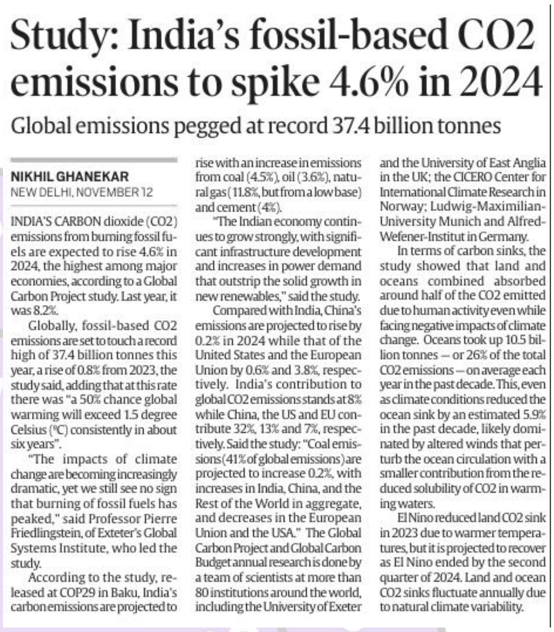
- The SPCBs can issue directives to immediately stop activities discharging pollutants.
- The Act removes imprisonment for violations and instead imposes monetary penalties between Rs 10,000 and Rs 15 lakh.

- **Penalty for General Offences**
  - Offences without explicit penalties in the 1974 Act are no longer punishable by imprisonment; the 2024 Act instead prescribes fines between Rs 10,000 and Rs 15 lakh.
- **Appointment of Adjudicating Officers for Penalty Assessment**
  - The Act authorizes the central government to appoint adjudicating officers (ranked at least as Joint Secretary) to determine penalties.
  - Appeals against their orders can be made to the National Green Tribunal, provided 10% of the penalty amount is deposited.
  - Penalties collected go to the Environment Protection Fund.
- **Expanded Cognizance of Offences**
  - Under the Act, courts can take cognizance of an offence if a complaint is filed by an adjudicating officer, in addition to complaints from CPCB, SPCB, or notified persons.
- **Accountability for Government Departments**
  - For violations by government departments, department heads will be penalized with an amount equal to one month's basic salary unless they can prove due diligence was exercised to prevent the violation.

- **Key highlights of New Rules under the Water Act 2024**
  - **Introduction of New Penalty Rules**
    - The Union Environment Ministry has notified the Water (Prevention and Control of Pollution) (Manner of Holding Inquiry and Imposition of Penalty) Rules, 2024, which immediately take effect.
    - These new rules establish procedures for inquiries and penalties in cases of violations under the Water Act.
  - **Shift from Criminal Penalties to Civil Penalties**
    - Following recent amendments to the Water Act, violations have been decriminalized, with penalties replacing criminal charges.
    - The **Ministry previously exempted non-polluting 'white' category** industries (non-polluting industries) from needing prior permissions to operate under the Water Act
  - **Empowerment of Pollution Control Authorities**
    - Authorized officers from the CPCB, SPCB, Pollution Control Committees, and Integrated Regional Offices can now file complaints to adjudicating officers about violations.
    - They can do so under specific sections of the Act (Sections 41, 41A, 42, 43, 44, 45A, and 48), primarily addressing industrial effluent and pollutant discharge norms.
  - **Role and Responsibilities of the Adjudication Officer**
    - An adjudicating officer, ranked at least as a state government joint secretary, is responsible for overseeing complaints, issuing notices to alleged violators, and conducting inquiries
    - Alleged violators may respond through a legal representative. The adjudication process must be completed within six months of the notice issuance.

7. **Global Carbon Dioxide Emissions set to rise 0.8% over 2023**
GS 3 (Environment)

- **Why in News:**
  - Global carbon dioxide (CO_2) emissions from fossil fuel use are projected to rise by 0.8% in 2024, reaching a record high of 37.4 billion tonnes, according to the **Global Carbon Project's (GCP) latest report presented at COP29 in Baku, Azerbaijan**.
    - GCP is a research initiative focused on quantifying global greenhouse gas emissions and their causes.
    - It does so primarily by studying the carbon cycle and its interactions with human activities, including creating global budgets for key greenhouse gases like carbon dioxide, methane, and nitrous oxide.
    - It aims to provide a comprehensive picture of the Earth's carbon balance and inform climate change mitigation strategie
  - The report warns that at the current rate, **there is a 50% chance global warming will exceed the critical 1.5°C threshold consistently within six years**, emphasizing the urgency for decisive global action.



Study: India's fossil-based CO2 emissions to spike 4.6% in 2024

Global emissions pegged at record 37.4 billion tonnes

NIKHIL GHANEKAR
NEW DELHI, NOVEMBER 12

INDIA'S CARBON dioxide (CO2) emissions from burning fossil fuels are expected to rise 4.6% in 2024, the highest among major economies, according to a Global Carbon Project study. Last year, it was 8.2%.

Globally, fossil-based CO2 emissions are set to touch a record high of 37.4 billion tonnes this year, a rise of 0.8% from 2023, the study said, adding that at this rate there was "a 50% chance global warming will exceed 1.5 degree Celsius (°C) consistently in about six years".

"The impacts of climate change are becoming increasingly dramatic, yet we still see no sign that burning of fossil fuels has peaked," said Professor Pierre Friedlingstein, of Exteter's Global Systems Institute, who led the study.

According to the study, released at COP29 in Baku, India's carbon emissions are projected to rise with an increase in emissions from coal (4.5%), oil (3.6%), natural gas (11.8%, but from a low base) and cement (4%).

"The Indian economy continues to grow strongly, with significant infrastructure development and increases in power demand that outstrip the solid growth in new renewables," said the study.

Compared with India, China's emissions are projected to rise by 0.2% in 2024 while that of the United States and the European Union by 0.6% and 3.8%, respectively. India's contribution to global CO2 emissions stands at 8% while China, the US and EU contribute 32%, 13% and 7%, respectively. Said the study: "Coal emissions (41% of global emissions) are projected to increase 0.2%, with increases in India, China, and the Rest of the World in aggregate, and decreases in the European Union and the USA." The Global Carbon Project and Global Carbon Budget annual research is done by a team of scientists at more than 80 institutions around the world, including the University of Exeter and the University of East Anglia in the UK; the CICERO Center for International Climate Research in Norway; Ludwig-Maximilian-University Munich and Alfred-Wefener-Institut in Germany.

In terms of carbon sinks, the study showed that land and oceans combined absorbed around half of the CO2 emitted due to human activity even while facing negative impacts of climate change. Oceans took up 10.5 billion tonnes — or 26% of the total CO2 emissions — on average each year in the past decade. This, even as climate conditions reduced the ocean sink by an estimated 5.9% in the past decade, likely dominated by altered winds that perturb the ocean circulation with a smaller contribution from the reduced solubility of CO2 in warming waters.

El Nino reduced land CO2 sink in 2023 due to warmer temperatures, but it is projected to recover as El Nino ended by the second quarter of 2024. Land and ocean CO2 sinks fluctuate annually due to natural climate variability.

- **India's Contribution to Global Emissions:**
  - **Rising Emissions**: India's CO_2 emissions are expected to grow by 4.6% in 2024, the highest among major economies. This includes increases from coal (4.5%), oil (3.6%), natural gas (11.8%), and cement production (4%).
  - **Global Standing**: India contributes 8% of global fossil CO_2 emissions, **ranking third after China** (31%) and the U.S. (13%). The European Union (EU-27) contributes 7%.
  - **Per Capita Emissions**: India's per capita CO_2 emissions remain significantly lower at 0.6 tonnes compared to the global average of 1.3 tonnes, the U.S. at 3.9 tonnes, China at 2.3 tonnes, and the EU-27 at 1.5 tonnes.
- **Key Findings from the Report:**
  - **Global Trends in Emissions**:
    - Emissions from coal, oil, and natural gas are expected to rise slightly by 0.2%, 0.9%, and 2.4%, respectively, in 2024.
    - CO_2 concentrations in the atmosphere are projected to reach 422.5 ppm in 2024, 52% higher than pre-industrial levels.
  - **Carbon Budget and the 1.5°C Threshold**:
    - The remaining global carbon budget, which determines how much carbon can be emitted before breaching the 1.5°C limit, is running out. A consistent breach of the 1.5°C target is expected within six years if current trends persist.
    - The mean global temperature already surpassed 1.5°C in January 2024 when averaged over the previous 12 months.
  - **Land and Ocean Carbon Sinks**:
    - Land and oceans combined absorbed about half of human-generated CO_2 emissions in the past decade.
    - Oceans absorbed 10.5 billion tonnes annually, or 26% of total emissions, despite a 5.9% reduction in absorption efficiency over the last decade due to altered wind patterns and warming waters.
    - El Niño temporarily reduced land CO_2 absorption in 2023 but is expected to recover by mid-2024.

- **Challenges in Meeting Climate Goals:**
    - The Paris Agreement aims to limit global warming to below 2°C, striving for 1.5°C.
    - However, the report highlights that global efforts are insufficient, and voluntary Nationally Determined Contributions (NDCs) are unlikely to meet the 1.5°C pathway.
    - Structural barriers, such as increasing infrastructure demands in rapidly developing economies like India, outpace the growth of renewable energy sources, exacerbating fossil fuel dependence
- **Call to Action:**
    - The report emphasized the urgency for "**rapid and deep cuts to fossil fuel emissions**" to meet the Paris Agreement goals.
    - World leaders at COP29 are urged to implement transformative policies to accelerate the transition to renewable energy, reduce fossil fuel consumption, and mitigate the impacts of climate change.
- **Conclusion:**
    - The Global Carbon Budget's findings highlight the critical need for immediate and sustained global action to curb carbon emissions.
    - While India's economic growth and energy needs drive its increasing emissions, the focus must shift toward balancing development with sustainable practices.
    - Without decisive action, the window to prevent the worst impacts of climate change is rapidly closing.