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## 1. Union Cabinet Approves Rs 1,000-Crore Fund to Boost Indian Space Start-Ups GS 2 (Governance)

### • Why in News:

- The Union Cabinet has approved a Rs 1,000-crore venture capital (VC) fund aimed at supporting about 40 space start-ups over the next five years.
- This fund, **launched under the aegis of IN-SPACe**, is expected to attract private investment and drive innovation in India's growing space sector.

### • Supporting India's Emerging Space Entrepreneurs:

#### ○ Key initiatives:

##### ▪ **Pre-Incubation Entrepreneurship (PIE) Development Program:**

The Indian government, through IN-SPACe, launched the PIE Development Program, for guiding startups from ideation to prototype development.

##### ▪ **Financial and regulatory support:**

- The government has introduced tax incentives such as GST exemptions for satellite launches and income tax breaks for R&D.
- Initiatives like the **Startup India Seed Fund, DRDO's Technology Development Fund, and Atal Innovation Mission** are providing critical financial support to space startups.

##### ▪ **World-class infrastructure:** The GIFT City in Gujarat is emerging as a global hub for space technology, offering regulatory benefits and world-class infrastructure.

##### ▪ **Collaborations:** Amazon Web Services (AWS) has launched its space accelerator programme in India, in collaboration with ISRO and IN-SPACe, selecting 24 startups to receive mentorship and up to \$100,000 in credits.

##### ▪ **Incubation and mentorship:** The Space Technology Incubation Centre (STIC) offers startups access to advanced labs, funding opportunities, and mentorship.

#### ○ **Challenges faced by space startups:**

- Limited early-stage funding
- Access to substantial government grants remains limited, and procurement processes are not always transparent.
- Startups face difficulties in accessing testing facilities and standardised technology-sharing platforms.
- The absence of affordable public liability insurance poses financial risks for startups.
- Limited IP protection standards hinder innovations.
- Export restrictions hinder the global expansion of Indian space startups.

#### ○ **Future outlook:**

- **Upcoming trends like space tourism**, asteroid mining, and advancements in AI and ML are expected to revolutionise the space sector.
- Startups are likely to play a significant role in future space exploration and commercialisation efforts, including major missions like **Gaganyaan, NISAR, and Chandrayaan-4**.
- **The introduction of a deep tech startup policy** and continued strategic investments will be crucial for fostering growth.
- It is essential for stakeholders to engage with startups and create a nurturing environment for technological advancements.

## Cabinet clears ₹1K-cr fund to support space start-ups over 5 years

EXPRESS NEWS SERVICE  
NEW DELHI, OCTOBER 24

THE UNION Cabinet on Thursday approved setting up of a ₹1,000-crore venture capital fund to support 30 to 35 space start-ups over a period of five years, which, the government hopes, will attract private funding.

"The focus will be on start-ups that have developed a basic proof of concept that needs to be taken forward to the commercialisation stage. Early life of start-ups is the most critical. If they receive support in early life, then the probability of success goes up," said Union Information and Broadcasting Minister Ashwini Vaishnaw.

Start-ups will receive between ₹10 to ₹60 crore support from the fund based on its stage of development, growth trajectory, and its potential impact on national space capabilities.

The step is in line with the government's vision of India capturing a bigger chunk of the global space market. The Indian space sector is currently valued at USD 8.4 billion and is expected to grow to USD 44 billion with the government's support. There are already 250 space start-ups in the country since the space sector was liberalised in 2020.

This move — which was announced in this year's budget — will also generate thousands of direct and indirect jobs, develop new manufacturing capability and supply chains, and create trained space professionals. The fund is expected to drive innova-



Union Minister Ashwini Vaishnaw in New Delhi, Thursday. Amit Mehra

tion in satellite technology, launch vehicle technology, as well as space applications. It will also advance space reforms.

"This is a big decision that will bring us at par with the ecosystem set-up by other big countries," said Vaishnaw.

Around ₹150 crore from the fund is likely to be deployed in its first year (2025-26), ₹250 crore for next three years, and ₹100 crore in its last year of operation, according to a government statement. The fund will be managed by professional managers and follow the structures of an alternative investment fund as per SEBI, the minister said.

"Along with the policy initiatives, one of the foremost requirements of the industry is financial support at this moment. We believe that this fund will not only be a key enabler for growth of the Indian space start-up ecosystem but will also inspire investors to seriously look at this sector as an investment and come forward to become a part of the Indian space start-up story," said Lt Gen A K Bhatt (retd), DG, Indian Space Association.

- **What is IN-SPACE and its Proposal to Set-up a VC Fund for Start-ups?**
  - As part of the 4th 'Atmanirbhar Bharat Abhiyan' stimulus, the Union Finance Minister announced the creation of the **Indian National Space Promotion and Authorization Center (IN-SPACE)** in **2020**.
  - **IN-SPACE was set up as a single-window**, independent, nodal agency to authorise, promote and supervise space activities of private non-governmental entities (NGEs).
  - Since its establishment, IN-SPACE has signed 45 MoUs with NGEs to support them in space activities.
  - IN-SPACE has proposed a Rs.1000 crore VC fund **to support the growth of India's space economy, currently valued at \$8.4 billion, with a target to reach \$44 billion by 2033.**
  - With nearly 250 space startups emerging across the value chain, timely financial support is crucial to ensure their growth and prevent talent loss overseas.
  - The fund **aims to address the critical need for risk capital**, as traditional lenders are hesitant to fund startups in this high-tech sector.
- **Financial Implications of Establishing a VC Fund for Start-ups:**
  - **The deployment period** of the proposed Rs.1,000 crore VC fund is planned to be up to five years from the actual date of start of the fund operations.
  - **The average deployment amount** could be Rs 150 - 250 crore per year, depending on the investment opportunities and fund requirements.
  - **The indicative range of investment** is proposed to be Rs10 - 60 Crore, contingent upon the stage of the company, its growth trajectory, and its potential impact on national space capabilities.
  - **Indicative equity investment range could be:**
    - Growth stage: Rs 10 Crore - 30 Crore
    - Late growth stage: Rs 30 Crore - 60 Crore
    - Based on the above investment range, the fund is **expected to support approximately 40 startups.**
- **Details/ Significance of the VC Fund for Start-ups:**
  - The proposed government-backed fund **will boost investor confidence, attract private capital, and signal the government's commitment** to advancing space reforms.
  - It will serve as **an Alternative investment Fund under SEBI regulations**, providing early-stage equity to startups and enabling them to scale for further private equity investments.
  - The fund is **strategically designed to advance India's space sector**, aligning with national priorities and fostering innovation and economic growth through the following key initiatives:
    - Capital infusion
    - Retaining companies in India
    - Growing space economy
    - Accelerating space technology development
    - Boosting global competitiveness
    - Supporting Atmanirbhar Bharat
    - Creating a vibrant innovation ecosystem
    - **Driving economic growth and job creation**
    - Ensuring long-term sustainability
  - By addressing these points, the fund aims to **strategically position India as one of the leading space economies.**



## 2. An Investment, not a Waste GS 3 (Agriculture)

### • Why in News:

- India's agricultural sector is at a crucial crossroads, with challenges ranging from increasing crop productivity to ensuring long-term food security amidst climate change.
- Some renowned agronomists argue that the country needs to invest more in agricultural research and development (R&D) rather than spending on food subsidies.
- Their proposition to redirect funds from food subsidies to R&D, while rooted in logical trade-offs, requires a deeper examination, particularly regarding the value and purpose of food subsidies.

### • The Debate on Food Subsidies

- The debate over food subsidies in India is complex and multifaceted, touching upon issues of food security, fiscal responsibility, and social welfare.
- Food subsidies, provided through the Public Distribution System (PDS) under the National Food Security Act (NFSA), are crucial for millions of low-income households, offering affordable access to staple grains and ensuring a basic level of food security.
- While proponents argue that these subsidies are essential for alleviating hunger and supporting vulnerable populations, critics contend that reallocating these funds toward agricultural R&D would be more beneficial in the long term.
- This debate raises fundamental questions about the role of food subsidies in India's social policy and the potential trade-offs involved in redirecting funds to other sectors.

### • The Case for Food Subsidies and Misconception About the Fiscal Impact of NFSA

- A Critical Role in Ensuring Food Security**
  - Food subsidies play a critical role in ensuring food security for India's population, particularly for those below the poverty line.
  - By providing subsidised grains like rice and wheat, the PDS helps millions of people access a basic level of nutrition.
  - The importance of this system became even more evident during the COVID-19 pandemic, when disruptions in income and employment left many families struggling to afford food.
  - Food subsidies acted as a safety net, supporting households through the crisis and ensuring that they could meet their minimum dietary needs.
- An Essential Financial Amnesty**
  - For families earning less than Rs. 20,000 a month, the PDS offers an essential financial amnesty.
  - The modest income transfers these families receive through subsidised grain allows them to allocate a portion of their limited resources to other essential foods, such as pulses, milk, and vegetables.
  - Thus, food subsidies not only help maintain caloric intake but also indirectly support dietary diversity and nutrition, enabling families to achieve a more balanced diet.
  - The argument that food subsidies could be curtailed overlooks their broader value in supporting the health, education, and productivity of India's most vulnerable citizens.
- An Income Transfer and Social Investment**
  - Food subsidies also function as a modest income transfer for the bottom half of the income distribution, allowing poor households to allocate more of their budget to other necessities.
  - By receiving grains at subsidised rates, families save on food costs and can spend on other essentials like education, healthcare, and diverse food items, which improves overall well-being and economic stability.



MILIND MURUGKAR

INDIA'S AGRICULTURE is in need of increased investment in R&D. It needs to increase crop productivity, develop varieties that can withstand climate change, and ensure food security. This is the argument in a recent article in this newspaper. The problem with the food, at October 14). The author, Ashish Gulati, an eminent agronomist, has made a similar argument earlier. 'A setback for the farm, at July 14). He has also been making a persuasive case for re-examining our policy of input subsidies. The subsidy for electricity, fertilisers and water leads to inefficient use of resources and has a demoralising impact on small farmers, grain producers, and crop diversification efforts.

However, he also argues for reducing the food subsidy bill by reducing the PDS coverage to have the resources to raise the agri-R&D investment. At one level, he is right – to have the resources to invest in agricultural R&D, funds must be sought by either cutting expenditures elsewhere or from new taxes. Funds can come from reducing the food subsidy, but reaching it can also come from many areas including cutting expenditures from the production-linked incentive that subsidises farms in some sectors. Why choose food subsidies?

The author may be targeting food subsidies for reduction either because they contribute directly with agricultural R&D or because spending on them has little or no value. Both propositions can be contested.

It is widely argued that food subsidies constitute a big part of subsidies to farmers in the form of price support along with input subsidies and much of it is wasteful. It is not a bet

## AN INVESTMENT, NOT A WASTE

Benefits of food subsidy far outweigh costs. Its worth was realised during Covid crisis

to redirect these subsidies to agricultural R&D. This would benefit farmers and consumers and is a win-win for all. But can we treat food subsidies like other subsidies, such as fertilizer and electricity?

The country's food subsidy bill encompasses both consumer and farmer subsidies due to the involvement of the Food Corporation of India (FCI) in subsidising both groups. However, there can be conceptually separated. Studies show that the component of subsidy to farmers in the food subsidy bill is much less than the input subsidies (electricity, fertiliser). Therefore, it wouldn't be correct to say that the food subsidy directly competes with R&D or other agricultural investments by the government. In fact, Gulati also points out that food subsidies "predominantly benefit consumers rather than farmers". Hence, it is incorrect to lump food subsidies with the other subsidies received by producers. It would also be wrong to ask why rice-producing farmers should get subsidised rice through PDS. Because here the rice producer is in effect getting income transfer as a consumer.

It is then the argument that the food subsidy expenditure is wasteful. This criticism is at the heart of what we consider valuable. In effect, the food subsidy is a modest income transfer to the bottom half of the population. A family of four that receives 20 kg of rice or wheat receives a monthly income of about Rs. 700-Rs. 800 depending on the prices in their locality. For poor households (with income less than Rs. 20,000), this is a very valuable transfer and sustains their food security – not necessarily to

enabling more grain consumption but in increasing spending on other essential foods (pulses, milk). This is also an investment in the health of vulnerable populations. Its worth was realised even by critics during the Covid crisis. Do so many people need food subsidies?

A decade ago, the National Food Security Act's (NFSA) expansion of PDS coverage addressed significant exclusion errors in the targeted PDS system. The NFSA's supporters effectively argued that accurately identifying the poor is nearly impossible, making wider coverage necessary to minimise exclusions. This moral argument remains valid even today.

Critics, including Gulati, have wrongly assumed the food security bill under NFSA would necessitate increased grain procurement. This has led to overestimation. The NFSA has increased PDS coverage from 45 per cent to 67 per cent. However, per beneficiary grain supply has increased 700 kg to 1 kg, negating the need for substantial extra grain. Ultimately, the NFSA neither inflated the subsidy nor required increased production.

It is well known that agricultural R&D has a high rate of return. This is even more so when such R&D targets pulses, milk, eggs, vegetables, and fruits – foods essential to overcome nutritional gaps in our population. The resulting gains accrue to all producers and consumers. It is an investment in the bottom of the income pyramid. It effectively complements the welfare measures towards them. The trade-off expenditure need to be made elsewhere.

The writer is an economist

- For these households, the PDS acts as an economic cushion, helping them manage rising costs of living and reducing the need for short-term coping strategies like taking on debt.
- **Misconceptions About the Fiscal Impact of NFSA**
  - Critics have expressed concerns that the NFSA would dramatically increase the government's fiscal burden by necessitating higher grain procurement.
  - However, evidence suggests that the NFSA's impact on government expenditure has been less severe than anticipated.
  - While the NFSA expanded the number of beneficiaries, it simultaneously reduced the per-capita grain allocation—from 7.9 kg per person per month to 5 kg.
  - This change has helped offset the increase in beneficiaries, thereby limiting the overall fiscal impact of the NFSA on the food subsidy bill.
  - This reduction in per-beneficiary allocation demonstrates that the NFSA has not led to substantial increases in grain procurement or inflated the subsidy bill to the extent predicted by critics.
- **The Way Forward**
  - **Increase in R&D Investment Without Compromising Food Security**
    - There is no doubt that agricultural R&D is critical for the future of India's farm sector.
    - However, addressing the need for increased R&D funding does not necessarily require cutting food subsidies.
    - Rather, the government could explore alternative sources of funding, such as revising other subsidy programs, particularly production-linked incentives for certain industries, or increasing taxes on luxury goods.
    - The emphasis should be on making agricultural investments without sacrificing the welfare of the most vulnerable sections of society.
  - **Distinguishing Food Subsidies from Input Subsidies**
    - A key point of contention in critics' argument is the conflation of food subsidies with input subsidies such as those for fertilizers and electricity.
    - While input subsidies are indeed wasteful and contribute to environmental degradation, food subsidies primarily benefit consumers, not farmers.
    - Studies show that the farmer's share of the food subsidy bill is much smaller than that of input subsidies.
    - Therefore, reducing food subsidies would not directly improve agricultural practices or R&D funding, as critics suggest.
  - **Optimising the Efficiency of Existing Food Subsidies**
    - There is room for optimising the efficiency of existing food subsidies without reducing the scope of the PDS.
    - For example, modernising the PDS through technology, reducing leakages, and improving targeting could help streamline the system and reduce costs without compromising its coverage.
    - By implementing these measures, the government could improve the effectiveness of food subsidies and free up resources for other priorities, such as agricultural R&D
- **Conclusion**
  - The debate over food subsidies in India reflects a broader tension between immediate social welfare and long-term economic development.
  - While critics argue for redirecting funds from food subsidies to agricultural R&D, this approach overlooks the critical role that food subsidies play in supporting vulnerable populations.
  - Rather than reducing food subsidies, policymakers should seek alternative funding sources for agricultural R&D and optimize existing subsidy programs to ensure efficiency.



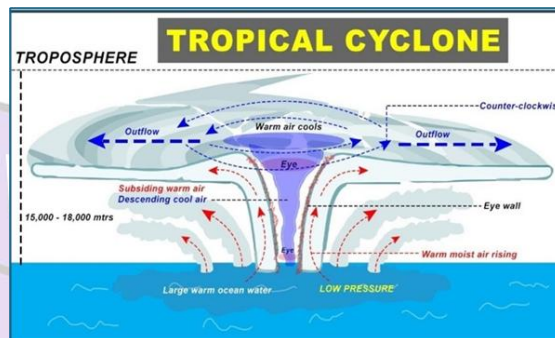
### 3. Cyclone 'Dana' makes landfall GS 3 (Disaster Management)

- **Why in News:** Severe Cyclonic Storm Dana made landfall on the Odisha coast on the night of October 24. The storm made landfall at a speed of 100 to 110 kmph gusting at 120 kmph.

- **Tropical Cyclone**

- **About**

- Cyclones that develop in the regions between the Tropics of Capricorn and Cancer are called tropical cyclones.
    - The World Meteorological Organisation uses the term 'Tropical Cyclone' to cover weather systems in which winds exceed 'Gale Force' (minimum of 34 knots or 63 kph).
    - Tropical cyclones are the progeny of ocean and atmosphere, powered by the heat from the sea and driven by easterly trades and temperate westerlies, high planetary winds and their own fierce energy.



- **Formation of cyclones**

- Tropical Cyclone is a **weather phenomenon**, which is formed **only over warm ocean waters near the equator**.

- **Characteristics of a Tropical Cyclone**

- The **centre of a cyclone is very calm and clear with very low air pressure**. The average speed is **120 kmph**.
    - They have closed **isobars** which leads to greater velocity.
    - Isobars are imaginary lines on a weather map that connect **locations with equal atmospheric pressure**.
    - They develop over oceans and sea only.
    - They **move from east to west** under the influence of trade winds.
    - They are seasonal in nature.

- **Classification of cyclones**

- Cyclones are classified **on the basis of wind speed** by the Indian Meteorological Department (IMD):
      - **Depression:** Wind speeds of between 31–49 km/h
      - **Deep Depression:** Between 50–61 km/h
      - **Cyclonic Storm:** Between 62–88 km/h
      - **Severe Cyclonic Storm:** Between 89–117 Km/h
      - **Very Severe Cyclonic Storm:** Between 118–166 Km/h
      - **Extremely Severe Cyclonic Storm:** Between 167–221 Km/h
      - **Super Cyclonic Storm:** Above 222 Km/h

- **Category of a tropical cyclone**

- The category of a tropical cyclone is determined by its sustained wind speed, as measured by the **Saffir-Simpson Hurricane Wind Scale**.
    - It is classified into five categories — Category 1 to Category 5.
    - While Category 1 tropical cyclones bring winds of 119 to 153 kmph, Category 5 tropical cyclones, which are the strongest, have winds of 252 kmph or higher.
    - Storms that reach Category 3 and higher are considered major tropical cyclones due to their potential to inflict significant damage.

#### LANDFALL OF A CYCLONE

The event of the storm system coming ashore after being over water is referred to as its landfall

HEAVY RAIN lashed parts of Odisha and West Bengal on Thursday as the two states braced for Cyclone Dana to make landfall later in the night. The severe cyclonic storm, packing wind speeds of up to 120 km per hour, was expected to make landfall close to Bhitarkanika National Park and Dhamra port in Odisha between Thursday midnight and dawn on Friday.

Odisha has evacuated more than a million people from areas likely to be affected by Dana. What is meant by a cyclone's landfall, and for how long does its impact usually last?

**Eye and landfall**  
Tropical cyclones are rotating storm systems that typically develop over warm ocean waters between the Tropics of Cancer and Capricorn. The event of the storm system coming ashore after being over water is referred to as its landfall.

Tropical cyclones spin around an 'eye', an area of relatively calm winds at the centre of the storm, which is typically 35–65 km across. According to the India Meteorological Department (IMD), a tropical cyclone is said to have made landfall when the centre of the storm—or its eye—moves over the coastline.

**Not a 'direct hit'**  
A cyclone's landfall should not be confused with a 'direct hit', which refers to the situation where the core of high winds (or 'eyewall') comes ashore but the centre of the storm is still offshore.

According to the US National Oceanic and Atmospheric Administration (NOAA), since the strongest winds in a tropical cyclone are not located at its centre, the most severe brunt of the storm may be experienced over land even if landfall has not yet occurred.



#### Extent of damage

The damage caused by landfall depends on the severity of the cyclone, marked by the speed of its winds. Cyclone Dana could cause extensive damage to *kutcha* houses, partial disruption of power and communication lines, and minor disruption of rail and road traffic. There is a potential threat from flying debris and flooding of escape routes.

This kind of damage is caused by extremely strong winds, heavy rainfall, and storm surges leading to inland flooding.

#### Duration of landfall

Landfalls can last a few hours, depending on the speed of the winds and size of the storm system. Dana could bring winds of 125 km per hour during five to six hours of the landfall process.

Cyclones lose intensity once they move over land because the supply of moisture that feeds the storm dries up, and surface friction increases. This means that while landfalls are often the most devastating moments of cyclones, they also mark the beginning of their end.

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- **Tropical cyclones are known by different names in various regions**
  - **Hurricanes** – In the in the West Indian islands in the Caribbean Sea and Atlantic Ocean.
  - **Tornados** - In the Guinea lands of West Africa and southern USA
  - **Typhoons** – In the Northwest Pacific Ocean, particularly affecting East and Southeast Asia (e.g., Japan, Philippines, China, Taiwan).
  - **Cyclones** – In the Southwest Indian Ocean (off the coast of Africa, Madagascar), the Southeast Indian Ocean, and the Southwest Pacific Ocean.
  - **Willy-Willies** – An informal term used for tropical cyclones in Australia.
- **Naming of Cyclones**
  - **Cyclone Dana**
    - The name **Dana** was suggested by Qatar to the World Meteorological Organisation/United Nations Economic and Social Commission for Asia and the Pacific (WMO/ESCAP).
  - **Process of naming**
    - Worldwide, there are **six regional specialised meteorological centres (RSMCs)** and **five regional Tropical Cyclone Warning Centres (TCWCs)** mandated for issuing advisories and naming of tropical cyclones.
    - The five regional Tropical Cyclone Warning Centres (TCWCs) are:
      - ESCAP/WMO Typhoon Committee,
      - WMO/ESCAP Panel on Tropical Cyclones
        - **It is responsible for naming of cyclones in the Indian Ocean.**
      - RA(Regional Association) I Tropical Cyclone Committee,
      - RA IV Hurricane Committee,
      - RA V Tropical Cyclone Committee.
    - IMD is one of the six RSMCs to provide tropical cyclone and storm surge advisories to under the **WMO/Economic and Social Commission for Asia-Pacific (ESCAP)**.
      - WMO/ ESCAP is an inter-governmental regional body jointly established by the World Meteorological Organization (WMO) and the United Nations Economic and Social Commission for Asia-Pacific (ESCAP) in 1972.
      - **Members** – It has 13 countries as its members.
        - Bangladesh, India, Iran, Maldives, Myanmar, Oman, Pakistan, Qatar, Saudi Arabia, Sri Lanka, Thailand, United Arab Emirates and Yemen.
      - They contribute to a set of names which are assigned sequentially whenever a cyclonic storm develops.
      - The list of 169 cyclone names released by IMD in 2020 was provided by these countries — 13 suggestions from each of the 13 countries.
      - So, the tropical cyclones forming over different Ocean basins are named by the concerned RSMCs & TCWCs.
- **What is landfall of a cyclone?**
  - Landfall is the event of a tropical cyclone coming onto land after being over water.
  - As per the IMD, a tropical cyclone is said to have made a landfall when the **center of the storm – or its eye – moves over the coast**
    - The "eye" of a cyclone is a region of relatively calm weather found at the center of the storm.
    - Within the eye, winds are light and variable, often with clear or only partially cloudy skies.
    - The size of the eye can vary significantly, ranging from a few kilometers to over 50 kilometers (30 miles) in diameter in larger cyclones.
  - During landfall, the outer bands of the storm may have already reached the coast bringing strong winds, heavy rain, and storm surge.
  - Landfall marks the moment when the cyclone officially reaches the land.
    - A landfall should not be confused with a 'direct hit', which refers to a situation where the **core of high winds (or eyewall) comes onshore but the centre of the storm may stay remain offshore.**



#### 4. India-China LAC Agreement GS 2 (International Relations)

##### • Why in News:

- Indian and Chinese negotiators have reached an agreement on "patrolling arrangements" along the Line of Actual Control (LAC), leading to a disengagement and resolution of the tensions that emerged in 2020. The announcement was made by India, highlighting progress in the management of the border dispute.
- The agreement was followed by a bilateral meeting between Indian Prime Minister Narendra Modi and Chinese President Xi Jinping during the BRICS leaders' summit in Kazan, Russia.

##### • Background: Road to agreement

###### ○ PM Modi's Call for Improved Relations with China

- In April 2024, PM Modi, in an interview, emphasized the significance of India's relationship with China.
- He highlighted the need to urgently address the prolonged border situation to normalize bilateral interactions.

###### ○ Positive Response from China

- In response, the Chinese government expressed a positive outlook.
- A spokesperson from the Chinese Foreign Ministry acknowledged that India-China relations encompass more than just the border dispute.

###### ○ Indian Foreign Minister's Focus on Patrolling Rights (May 2024)

- In May 2024, Indian EAM S. Jaishankar expressed optimism regarding the resolution of remaining border disputes with China, particularly in the Ladakh region.
- He emphasized that the key issues still in contention were related to "patrolling rights" and "patrolling abilities" along the disputed areas.

##### • Patrolling Pact: A Key Element of the Agreement

###### ○ Significance

- The patrolling agreement is a crucial aspect of the border management deal between India and China.
- It is central to maintaining stability and order along the disputed areas of the Line of Actual Control (LAC).

###### ○ Patrolling Dynamics on the India-China Border

- Patrolling is vital in the India-China border management system **due to the absence of a clear physical demarcation on the ground.**
- Indian troops regularly patrol up to the Indian-perceived border and then return to their base.
- During these patrols, soldiers leave behind indicators of their presence, such as Indian-made items like cigarette packets or matchboxes.

###### ○ Article 4 of the 2005 Border Pact: Guidelines for Troop Conduct

- The 2005 border agreement, particularly Article 4, provides guidelines for handling face-offs between Indian and Chinese troops:
  - Self-Restraint in Face-offs:** Both sides are required to exercise restraint and take necessary measures to prevent escalation if there is a face-to-face encounter due to differing perceptions of the LAC.
  - No Use of Force:** Neither side shall use or threaten to use force during such encounters.
  - Mutual Courtesy and No Provocative Actions:** Troops must treat each other courteously and avoid any actions that could provoke tensions.

## The India-China agreement

India has announced a pact on patrolling along the LAC, which is expected to set in motion the process ultimately leading to normalisation. However, Indian strategic circles are cautious about the next steps



SHUBHAJI ROY

INDIAN AND Chinese negotiators have agreed on an agreement on "patrolling arrangements" along the Line of Actual Control (LAC), leading to disengagement and a resolution of the issues that had arisen in the area in 2020, India has said.

The agreement was announced on Wednesday by Prime Minister Narendra Modi and Chinese President Xi Jinping during the BRICS leaders' summit in Kazan, Russia.

Significantly, Chinese statements through this week have not referred to the agreement on patrolling.

**Road to agreement**

■ In April 2024, Prime Minister Modi had said in an interview that "the India, the relationship with China is important and significant, and it is my belief that we need to urgently address the prolonged border situation so that the bilateral relations can be normalised".

■ The Chinese government reacted positively to this statement, saying that the relationship between India and China was "more than just the border dispute".

■ In May, External Affairs Minister Jaishankar, in an interview to PTI, expressed hope for the resolution of the remaining issues along the border, particularly in Ladakh. He said that the outstanding issues primarily revolved around "patrolling rights" and "patrolling abilities".

**Question of patrolling**

■ The patrolling pact announced by Foreign Secretary Vikramjit Singh on Monday is the key pillar of the agreement.

■ Patrolling is one of the key elements of border management between India and China. Since there is no physical line on the

ground that corresponds to maps, Indian troops are expected to exercise discipline in patrolling the border, leaving behind a sign of their presence there. This could be anything Indian – perhaps an empty packet of cigarettes or a matchbox made in India.

■ Article 4 of the 2005 border pact outlines the conduct of the troops in case of a face-off. Some of the stipulated guidelines are as follows:

■ If the border personnel of the two sides come to a face-to-face situation due to differences in the alignment of the LAC or any other reason, they shall exercise self-restraint and take all necessary steps to avoid an escalation of the situation.

■ Throughout the face-to-face situation, neither side shall use or threaten to use force against the other.

■ Both sides shall treat each other with courtesy and refrain from any provocative actions.

■ Neither side shall put up armaments or signs on the spot.

**Contours of agreement**

■ It is learnt that the two sides have agreed to conduct patrolling rights in each other in

the Depsang Plains and Demchok region – there are areas where the problems are called legacy issues, predating the 2020 Chinese incursions. This means that Indian troops can patrol up to patrolling point (PP) 10-11 in the Depsang Plains, and in the Choling region of Demchok.

■ The agreement regarding an engagement is expected to lead to disengagement, de-escalation and a de-escalation of the situation in areas where 30,000 to 60,000 troops are stationed on each side.

■ Officially, India said this process is expected to begin in the next week or 10 days.

■ In a press conference held this week, Defence Secretary Rajendra Singh said that the pact on "patrolling arrangements" in Demchok and Depsang, patrolling and garrisoning activities will resume as it was in May 2020.

■ In the past, there were some incidents of discussion, patrolling and garrisoning activities, whenever applicable, will resume as it was in May 2020.

■ The previous disengagement at this point, such as Galwan Valley, south and south banks of Pangong Tso, Gogra and Sengge, has not been respected by the Chinese.

■ India said it hoped the agreement

can "prevent the kind of clashes that occurred earlier in some areas along the LAC", referring to the Galwan clashes of 2020, in which 20 Indian troops (including a colonel and an officer) and at least four Chinese soldiers were killed. The incident led to a suspension of the border situation.

■ He said the agreement of the "patrolling arrangements" of the agreement by Modi and Xi "should ensure that the border situation along the LAC. These steps have set the process in motion for bringing relations back to normal path, and it is necessary for both sides to continue in this path," Modi said.

**Caution: trust, but verify**

■ After the Modi-Xi meeting, however, a few days have elapsed.

■ The Indian media said the PM had conveyed "the recent agreement for complete disengagement and resolution of issues that arose in 2020 in the India-China border area".

■ The Chinese statement only said the two sides had "agreed on the important progress of the two sides' trust, understanding and mutual respect in the border area".

■ India has maintained that until the border is de-escalated, there is no need for a business as usual with China. Beijing's position has been that the border issue should not impact bilateral ties.

■ Since the past steps after the leaders' meeting, the Indian media specifically said that "the Special Representatives on the India-China border question will meet at an early date, to explore a fair, reasonable and mutually acceptable solution to the border dispute".

■ The Chinese media said the two sides had "agreed on holding talks between their foreign ministers and officials at various levels to bring the relationship back to normal and steady development at an early date".

■ As such, there is a fair bit of caution in India's strategic circles about the next steps going forward.

■ The border pact has set a process of trust building in motion, and that is a positive step, it will be at least a couple of years before the border issue is resolved, and the process of disengagement, de-escalation, and de-escalation of the border situation will be completed, and the process will be completed.

■ Whether it will be a parallel or sequential process remains to be seen.

- **Prohibition on Markings:** Neither side is allowed to place marks or signs at the confrontation points.
- **Key highlights of the agreement**
  - **Restoration of Patrolling Rights in Depsang Plains and Demchok**
    - India and China have agreed to restore mutual patrolling rights in the Depsang Plains and the Demchok region, areas with disputes predating the 2020 incursions.
    - Indian troops will now be allowed to patrol up to Patrolling Points (PP) 10 to 13 in the Depsang Plains and the Charding Nullah in Demchok.
    - However, areas where previous disengagements occurred—such as Galwan Valley, Pangong Tso, and Gogra-Hot Springs—are not open for renegotiation.
    - This agreement is seen as a step toward resolving long-standing legacy issues.
  - **Process of Disengagement, De-escalation, and Demilitarization**
    - The agreement is expected to initiate a process of **disengagement, de-escalation, and demilitarization** in the areas where both nations currently have 50,000 to 60,000 troops each.
    - The phased approach of the agreement will focus first on disengagement, followed by de-escalation and eventual de-induction of forces.
  - **Focus on Preventing Future Clashes**
    - The agreement aims to prevent incidents like the 2020 Galwan clashes, which resulted in the deaths of 20 Indian soldiers and at least four Chinese soldiers.
  - **Future Path**
    - The endorsement of the agreement by Indian PM Modi and Chinese President Xi should lead to a reduction in tensions along the LAC and set the stage for normalizing relations between the two countries.
- **Diverging Interpretations**
  - **Difference**
    - Following the meeting between PM Modi and President Xi Jinping, differences in interpretation emerged.
    - India's statement emphasized a "complete disengagement and resolution of issues that arose in 2020.
    - On the other hand, China's statement highlighted "important progress" on resolving relevant border issues, reflecting a more cautious tone.
  - **Contrasting Views on the Impact of the Border Dispute**
    - India has reiterated that the border standoff must be resolved before normalizing bilateral ties, indicating no "business as usual" until then.
    - In contrast, China maintains that the border issue should not affect broader relations, suggesting it prefers a compartmentalized approach.
  - **Planned Steps for Resolving the Border Dispute**
    - Indian side mentioned that Special Representatives would soon meet to seek a fair, reasonable, and mutually acceptable solution to the boundary question.
    - Meanwhile, China's statement suggested future talks at multiple diplomatic levels to restore relations to sound and steady development.
- **Conclusion: Cautious Optimism in India's Strategic Circles**
  - There is cautious optimism in India about the path forward, acknowledging that the border agreement has initiated a trust-building process.
  - The three-step process—disengagement, de-escalation, and de-induction—is expected to take at least a couple of years to complete if both sides adhere to the agreement.
  - It remains unclear whether these steps will occur in parallel or sequentially.



## 5. Weather Forecasting at the Gram Panchayat Level GS 2 (Governance)

### • Why in News:

- The Government of India has taken a significant step in **localising weather forecasting** by introducing hourly five-day weather forecasts at the Gram Panchayat level
- This initiative **aims to equip rural communities** with crucial weather data to enhance agricultural activities and disaster preparedness.

### • Importance of and Challenges in Localised Forecasting:

- **Importance:**
  - Localised weather forecasting plays a critical role in managing the unpredictability of weather systems, which is especially vital as **climate change increases the frequency and intensity of adverse weather events**.
  - It offers precise data at the local level, benefitting even small communities.

### ○ Challenges:

- While IMD has advanced forecasting at broader levels, predicting localised events like cloudbursts remains challenging.
- Currently, weather forecasting is available at district and block levels, but IMD aims to provide hyper-local forecasts down to 1 km x 1 km grids, with 3 km x 3 km grids already being tested.

### • Launch of the Weather Forecasting at the Gram Panchayat Level:

#### ○ About the initiative:

- The initiative, formally launched by the **Ministry of Panchayati Raj**, is a **collaborative effort** between –
  - The Ministry of Panchayati Raj,
  - India Meteorological Department (IMD), and
  - The Ministry of Earth Sciences.

#### ○ Objective:

- The primary goal is to **empower rural communities**, helping them become more resilient to climate challenges and better prepared for natural disasters.
- The initiative **promotes sustainable agricultural practices** at the grassroots level.

### • Key Features of the Weather Forecasting at the Gram Panchayat Level Initiative:

#### ○ What will be forecasted?

- The localised weather forecasts will provide real-time hourly updates on:
  - Temperature
  - Wind speed and direction
  - Cloud cover
  - Rainfall
  - Relative humidity
- In addition, five-day forecasts will give minimum and maximum temperatures, rainfall, cloud cover, and wind data.

#### ○ Platforms for forecasts:

- The forecasts will be accessible via the **e-GramSwaraj** and **Gram Manchitra** portals, as well as the **Meri Panchayat app**.
- These platforms provide vital weather data to support rural decision-making.

#### ○ Training for panchayat representatives:

- The Panchayati Raj Ministry is organising a workshop for more than 200 representatives from Panchayati Raj institutions.

## How panchayat-level weather forecasts will help

HARISHAN SHARMA  
NEW DELHI, OCTOBER 24

FIVE-DAY weather forecasts, updated every hour, are now available at the level of gram panchayats, marking a major step towards localised forecasting across the country. The initiative was formally launched by Panchayati Raj Minister Raju Kanwar Singh and MoS (Independent Charge), Ministry of Science & Technology and Ministry of Earth Sciences, Dr Jitendra Singh, on Thursday.

### The initiative

Gram Panchayat Level Weather Forecasting is a joint program of the Panchayati Raj Ministry, India Meteorological Department (IMD), and the Ministry of Earth Sciences.

According to the Panchayati Raj Ministry, it is aimed at "empowering rural communities and enhancing disaster preparedness at the grassroots." It will "promote sustainable agri-

cultural practices, making rural populations more climate-resilient and better equipped to tackle environmental challenges," it said.

### The forecasts

Hourly forecasts will be available on the e-GramSwaraj and Gram Manchitra portals, and the Meri Panchayat app.

e-GramSwaraj is already operational. Users can see data on the current temperature, wind speed, cloud cover (in percentage), rainfall, and relative humidity at the level of gram panchayats; five-day forecast of minimum and maximum temperatures, rainfall, cloud cover, wind direction, and wind speed, and an overall weather forecast.

### The benefits

Detailed and localised weather information will help farmers to better plan their activities including sowing, irrigation, harvest-

ing, etc. The Panchayati Raj Ministry has underlined the importance of localised weather forecasts in the context of intensifying climate change.

"As weather patterns become increasingly unpredictable, the introduction of weather forecasting at the Gram Panchayat level will serve as a crucial tool in safeguarding agricultural livelihoods and enhancing rural preparedness against natural disasters," the Ministry said.

"Gram Panchayats will receive daily updates on temperature, rainfall, wind speed, and cloud cover, empowering them to make critical decisions in agriculture, such as planning sowing, irrigation, and harvesting activities," it said.

Despite the significant advances made in IMD's forecasting capabilities, the science of forecasting has inherent uncertainties.

Why local matters

Despite the significant advances made in IMD's forecasting capabilities, the science of forecasting has inherent uncertainties.

The more precise a forecast – in terms of the spatial spread or time-window for the event – the greater the uncertainty. Also, the earlier the forecast, the less precise it is likely to be. It is usually easier to predict large-scale

terms that are spread over large geographical areas – such as the Indian monsoon, or a cyclone that develops over the Bay of Bengal, or a heat wave covering several states. But

sudden, localised events – like a cloudburst – are more difficult to predict.

Localised weather forecasts can help even small communities of farmers plan their economic activities with greater confidence. There are 2.55 lakh village panchayats across the country, with resident populations of a few thousands on average.

The IMD has developed the system of localised weather forecasting based on gram panchayat boundaries data provided by the Panchayati Raj Ministry.

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- The workshop will **equip them with the skills to use weather forecasting tools effectively**, enabling them to make **informed decisions** that enhance climate resilience in their communities.
- **Significance of the Weather Forecasting at the Gram Panchayat Level Initiative:**
  - **Benefits to farmers and rural communities:**
    - The forecasts **directly aid farmers by allowing them to plan agricultural activities** like sowing, irrigation, and harvesting more effectively.
    - Micro forecasts are particularly important in rural areas due to the growing unpredictability of weather patterns caused by climate change.
  - **Disaster preparedness:** The Panchayati Raj Ministry emphasised the role of these forecasts in safeguarding agricultural livelihoods, helping rural communities **prepare for natural disasters, and boosting climate resilience.**
- **Conclusion:**
  - The launch of localised weather forecasting at the Gram Panchayat level marks **a transformative step in empowering rural communities**, improving agricultural outcomes, and enhancing disaster preparedness.
  - As IMD continues to refine its capabilities, this initiative is set to play **a critical role in adapting to climate-induced changes.**





**MCQ Current Affairs**  
**25<sup>th</sup> Oct, 2024**

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**1. What is the primary cause of Scurvy Disease?**

- a) Lack of Vitamin D
- b) Lack of Calcium
- c) Lack of Vitamin C
- d) Lack of Iron

**2. Consider the following statements regarding the Indian Skimmer:**

- A. It is a species of bird native to South Asia.
- B. It is classified as 'Endangered' under the IUCN Red List.

Which of the statements given above is/are correct?

- a) A only
- b) B only
- c) A and B
- d) Neither of two

**3. The 'EOS-06 Satellite' is designed primarily for studies related to which of the following?**

- a) Earth's oceans and coastal zones
- b) Space weather observation
- c) Forest cover analysis
- d) Agricultural monitoring

**4. Consider the following statements regarding the Pink cocaine:**

- A. It contains ingredients like methamphetamine and ketamine.
- B. It can cause hallucinations and create breathing issues in humans.

Which of the statements given above is/are correct?

- a) A only
- b) B only
- c) A and B
- d) Neither of two

**5. "Exercise SIMBEX", is conducted between India and:**

- a) Russia
- b) South Korea
- c) Saudi Arabia
- d) Singapore

**MCQ Current Affairs**  
**25<sup>th</sup> Oct, 2024**

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1. c
2. c
3. a
4. c
5. d

