01-03-2026

PRELIMS ARTICLES

1. Cheetah reintroduction programme:

Context: In a major boost to India's cheetah reintroduction programme, nine cheetahs, translocated from Botswana, were released into their enclosures at the Kuno National Park (KNP) in Madhya Pradesh on Saturday by Union Minister for Environment, Forest and Climate Change Bhupender Yadav.

More about:

- With the release of the six females and three males, the total cheetah population in India has gone up to 48. Of them, 28 are Indian-born cubs and 20 are adults translocated from African nations as part of the Union government's Project Cheetah.
- Mr. Yadav said that this was the third batch of cheetahs to arrive from an African nation after the first batch of eight big cats from Namibia in September 2022, and another 12 from South Africa in February 2023.
- Apart from the 45 cheetahs at Kuno, three translocated adults are at the Gandhi Sagar Wildlife Sanctuary in Madhya Pradesh's Mandsaur and Neemuch districts.

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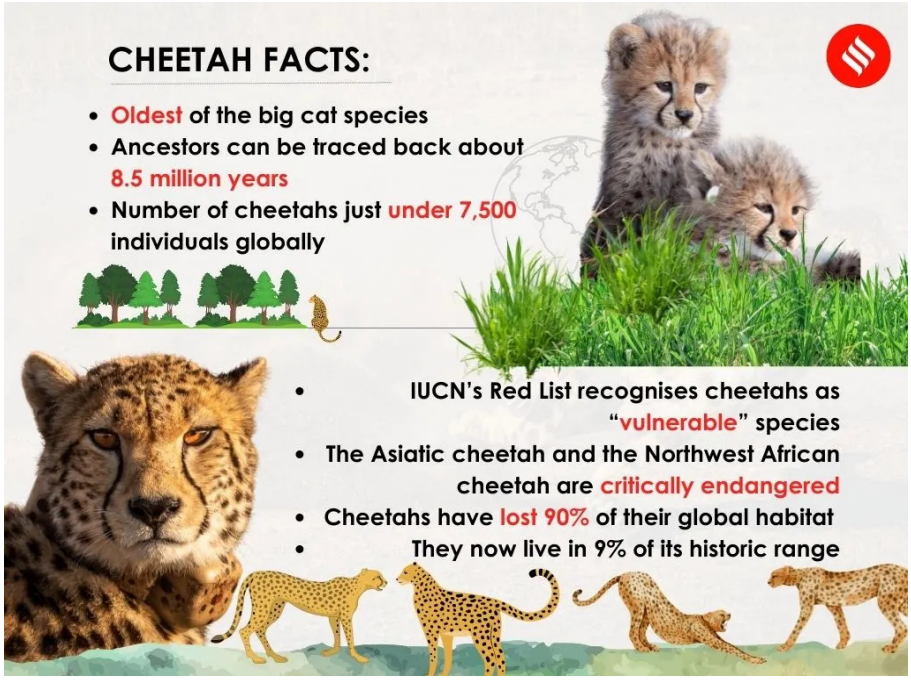

- Project Cheetah is the world's first intercontinental large wild carnivore translocation project.
- The project aimed at the reintroduction of cheetahs in the country, which had become extinct in 1950s in the country.
- The project involves translocation of cheetahs from source countries in Africa.
- Kuno National Park in Madhya Pradesh has been chosen as the first reintroduction site due to its suitable grasslands and prey base.
- The first batch of eight cheetahs (five females and three males) arrived in India from Namibia in September 2022.
- In February 2023, an additional 12 cheetahs were translocated from South Africa under an agreement for further introductions over the next 8–10 years.

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2. Rice fortification:

Context: As the Union Food Ministry decided to temporarily discontinue the process of rice fortification "until a more effective mechanism for delivery of nutrients to beneficiaries is identified", activists who had challenged the scheme in the Supreme Court have welcomed the move, and said fortification is not a scientific method to curb anaemia.

More about:

- **Review of Rice Fortification Programme**

  The government reviewed the implementation of rice fortification under the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) and other welfare schemes.

- **Decision to Temporarily Discontinue**

  It has been decided to temporarily discontinue rice fortification under PMGKAY and allied schemes until a more effective nutrient delivery mechanism is identified.

- **Basis of Decision – IIT Kharagpur Study**

  The decision was based on a study by **IIT Kharagpur** assessing the shelf life of fortified rice kernels under real storage conditions across diverse agro-climatic zones.

- **Key Findings of the Study**

  Moisture content, temperature, relative humidity, storage conditions, and packaging materials significantly affect the stability and shelf life of fortified rice.

- **Impact on Nutritional Quality**

  Prolonged storage and routine handling lead to micronutrient reduction, shortening effective shelf life and limiting intended nutritional outcomes.

- **No Impact on Foodgrain Entitlements**

  The government clarified that the decision will not reduce foodgrain entitlements and will not affect operations under the Public Distribution System (PDS).

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About rice fortification:

- Fortification is the process of adding Fortified Rice Kernels (FRK) containing FSSAI-prescribed micronutrients (Iron, Folic Acid and Vitamin B12) to regular rice.
- FRK is blended with normal rice in a ratio of 1:100 (1 kg FRK with 100 kg custom milled rice).
- Fortified rice is nearly identical to traditional rice in aroma, taste and texture.
- The blending process is carried out at rice mills during milling.
- Rice fortification is a cost-effective and culturally appropriate strategy to address micronutrient deficiencies in high rice-consuming countries.
- Rice fortification involves two steps: production of FRK and blending of FRK with regular rice.
- Technologies used include coating, dusting and extrusion, with extrusion considered most suitable for India.
- In extrusion, dry rice flour is mixed with micronutrient premix and water, then processed through a twin-screw extruder with heating zones.
- The extruder produces kernels similar in size and shape to regular rice.
- The fortified kernels are dried, cooled and packaged, with a shelf life of at least 12 months.
- As per guidelines, 10 grams of FRK are blended with 1 kg of regular rice.
- According to FSSAI norms, 1 kg of fortified rice contains iron (28–42.5 mg), folic acid (75–125 micrograms) and vitamin B12 (0.75–1.25 micrograms).

3. Ranji Trophy 2025–26

Context: The Prime Minister has congratulated the Jammu and Kashmir team for their first-ever Ranji Trophy win.

About the Ranji Trophy:

- The Ranji Trophy was founded by the Board of Control for Cricket in India (BCCI) in 1934–35.

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- It was named after one of India's first Test cricketers, Ranjitsinhji, who played for England and Sussex.
- Ranjitsinhji, known as the "Father of Indian Cricket", never actually played for India.
- It is a domestic first-class cricket tournament played by various regional teams against one another.
- Apart from regional cricket boards of various states, government teams also participate in the tournament, such as the Railways team and several teams associated with government enterprises.
- Mumbai has won the most Ranji Trophy titles with 42 championships, followed by Karnataka with 8 titles.

Top performers in Ranji Trophy 2025–26:

- The 2025–26 Ranji Trophy concluded on February 28, 2026, with Jammu and Kashmir winning their maiden title by defeating Karnataka on first-innings lead at Hubli.
- Jammu and Kashmir secured their first-ever Ranji Trophy championship.
- Auqib Nabi (J&K) was named Player of the Tournament for taking 60 wickets at an average of 12.56, including 7 five-wicket hauls.
- Ravichandran Smaran (Karnataka) was the top run-scorer with 950 runs at an average of 86.36, including 4 centuries.
- Ayush Doseja (Delhi) scored 949 runs at the highest average of 105.44, with 4 centuries and 5 fifties.
- Sudip Kumar Gharami (Bengal) recorded the highest individual score of 299 against Andhra.
- Aman Hakim Khan (Pondicherry) hit the most sixes (27) in the tournament.
- Auqib Nabi (J&K) recorded the best match bowling figures of 12/110 against Madhya Pradesh in the quarter-final.

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Other Domestic Cricket Tournaments:

- **Duleep Trophy:** Named after Kumar Shri Duleepsinhji of Nawanagar, the Duleep Trophy is a domestic first-class cricket competition in India whose first edition was played in 1961–62.
- **Deodhar Trophy:** The Deodhar Trophy is a List-A domestic 50-over cricket competition conducted annually in India, having first started in the 1973–74 season.

4. National Board for Wildlife (NBWL)

Context: Union Environment Minister Shri Bhupender Yadav chaired the 89th Meeting of the Standing Committee of the National Board for Wildlife (NBWL) in Bhopal.

About National Board for Wildlife (NBWL):

- The National Board for Wildlife (NBWL) is a statutory body constituted in 2003 under Section 5A of the Wildlife (Protection) Act, 1972.
- NBWL is the apex advisory body of the Government of India on wildlife conservation matters, especially concerning Protected Areas.
- It advises the government and grants approvals for projects within Protected Areas.
- NBWL is a 47-member body chaired by the Prime Minister, with the Minister of Environment, Forest and Climate Change as the Vice-Chairperson.
- Members include key officials such as the Chief of Army Staff, Defence Secretary, and Expenditure Secretary.
- The Central Government nominates 10 eminent conservationists, ecologists, and environmentalists as members.
- The Additional Director General of Forests (Wildlife) & Director, Wildlife Preservation serves as the Member-Secretary.
- NBWL promotes the conservation and development of wildlife and forests in the country.
- It advises the Central and State Governments on wildlife protection and conservation measures.

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- It recommends measures to control poaching and illegal wildlife trade.
- It makes recommendations regarding the declaration and management of National Parks, Wildlife Sanctuaries, and other Protected Areas.
- NBWL undertakes Environmental Impact Assessment (EIA) of projects affecting wildlife or their habitats.
- It reviews progress in wildlife conservation and suggests improvements to the government.
- It prepares and publishes a status report on wildlife in India at least once every two years.

5. National Institute for Research & Application of Natural Resources to Transform, Adapt and Build Resilience (NIRANTAR) Platform

Context: Union Environment Minister chaired the High Powered Steering Committee Meeting under NIRANTAR.

About NIRANTAR Platform:

- It is a platform of institutions established to improve coordination and collaboration among environmental and research institutions.
- It is an initiative of the Ministry of Environment, Forest and Climate Change (MoEFCC).
- It aims to consolidate environmental knowledge and share it with relevant stakeholders.
- It promotes an interdisciplinary research approach while allowing each institute to function independently.
- It seeks to create an institutional mechanism to support evidence-based policymaking.
- It provides a repository of documents related to international environmental treaties and conventions.
- It promotes sustainable utilisation of natural resources while preventing over-exploitation.

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- It is led by a High-Powered Steering Committee chaired by the Environment Minister, with Secretaries from the Science & Technology, Tribal Affairs, Agriculture, Industry, and Internal Trade Ministries.
- It follows a Four-Vertical Approach, focusing on research, assessment of outcomes, and practical utilisation of natural resources.
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6. National Science Day

Context: National Science Day is observed on February 28 every year across the country to mark and celebrate the contributions of scientists towards the development of India. The official theme for National Science Day 2026 is "Women in Science: Catalysing Viksit Bharat".

About National Science Day:

- National Science Day is celebrated to commemorate the discovery of the Raman Effect.
- On this day, in 1928, Indian physicist Sir C. V. Raman made an important discovery in the field of spectroscopy, which was later named after him as the Raman Effect.

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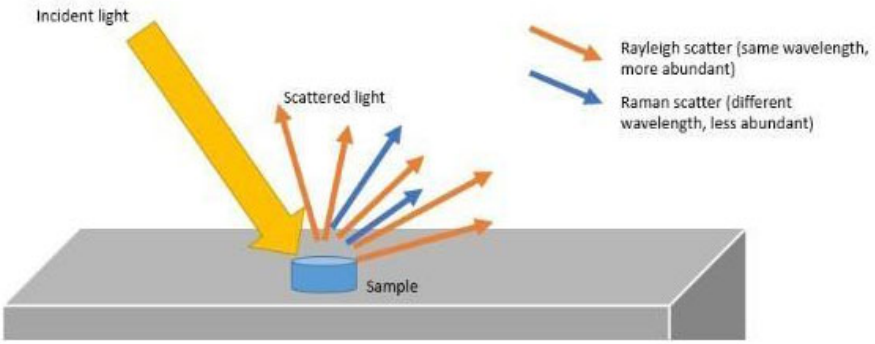
- For this discovery, he was awarded the Nobel Prize in Physics in 1930.
- The first National Science Day was celebrated on February 28, 1987.

About Raman Effect:

- The Raman effect is a change in the wavelength of light that occurs when a light beam is deflected by molecules.



MAINS SPECIFIC ARTICLES

1. Iran vs Israel Rivalry

Context: On February 27, Oman's Foreign Minister said a deal between the U.S. and Iran was within reach; a day later, the U.S. and Israel launched a joint strike.

About the Iran–Israel Rivalry:

- **Pre-Revolution Iran–Israel Cooperation (1977):** Under Shah Mohammad Reza Pahlavi, Iran held secret talks with Israel's Likud government. The "oil for arms" arrangement included Project Flower to co-produce modified surface-to-surface missiles, with Israel providing technology and Iran financing and test sites.
- **1979 Islamic Revolution and Ideological Shift:** Ayatollah Ruhollah Khomeini overthrew the Shah and established an Islamic Republic. Iran declared opposition to the U.S. ("Great Satan") and

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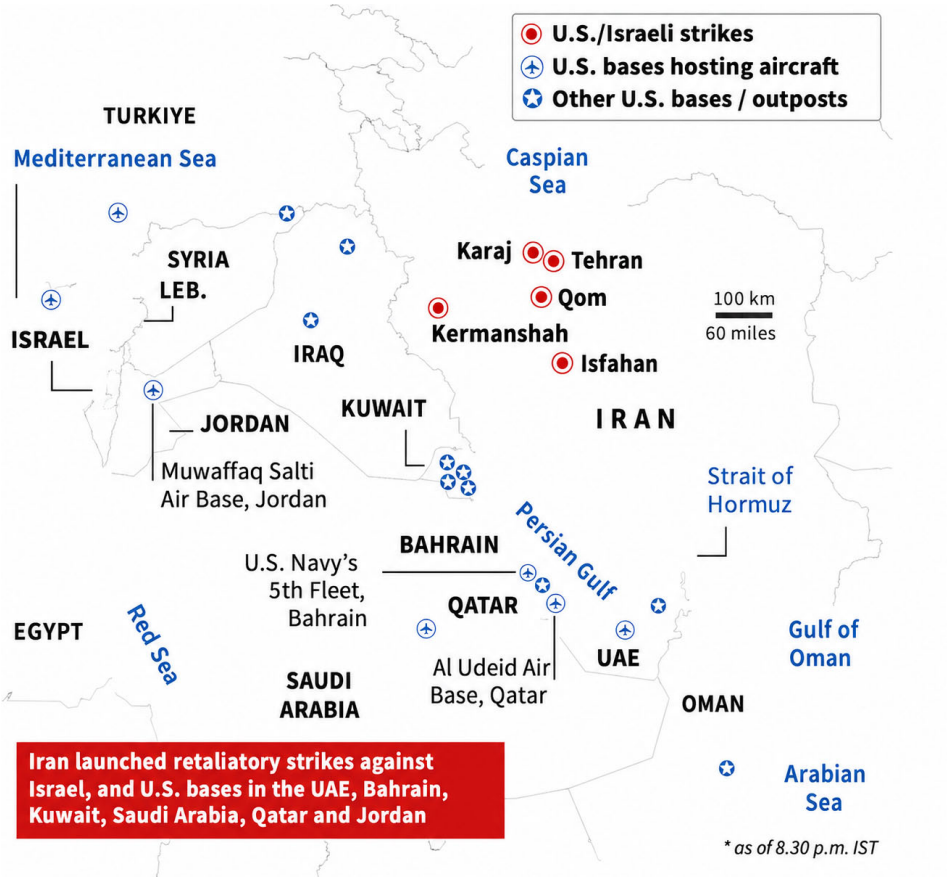
Israel ("Little Satan"), making the liberation of Jerusalem a key objective and triggering hostility with the U.S.–Israel axis.



- **Emergence of a New Regional Rivalry:** After 1979, Iran positioned itself as Israel's principal adversary, supporting the Palestinian cause to expand its influence in the Muslim world and bridge the Shia–Sunni divide, reshaping West Asian geopolitics.
- **Rise of Iran's Proxy Network:** Facing sanctions, Iran built a network of non-state actors, helping create Hezbollah in the 1980s and later backed Hamas and Islamic Jihad, increasing its leverage in Lebanon and the Israel–Palestine conflict.

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- **Israel–Hezbollah Conflicts:** Israel withdrew from southern Lebanon in 2000 after Hezbollah's resistance. In 2006, Hezbollah survived another Israeli offensive, strengthening Iran's regional deterrence strategy.
- **Impact of the 2003 Iraq War:** The U.S. invasion of Iraq removed Saddam Hussein, enabling Shia parties with ties to Tehran to rise in Iraq. Iran's influence expanded across the "Shia Crescent" from Tehran to Lebanon.
- **Syrian Civil War and Iranian Intervention:** Iran backed Bashar al-Assad during Syria's civil war, mobilising Hezbollah and Shia militias. With Russian support in 2015, the Syrian government regained territory, preserving Iran's regional corridor.
- **Threat of the Islamic State (ISIS):** ISIS endangered both Iraq and Syria and posed a sectarian threat to Shias. Iran and the U.S. found limited common ground in defeating ISIS despite broader tensions.
- **Nuclear Dispute and JCPOA (2015):** Iran agreed to limit its nuclear programme under the Joint Comprehensive Plan of Action (JCPOA) in return for sanctions relief. The agreement was backed internationally but opposed by Israel.
- **U.S. Withdrawal and Escalation (2018 Onwards):** President Donald Trump withdrew the U.S. from the JCPOA in 2018 and reimposed sanctions. Iran increased uranium enrichment, while Israel conducted covert operations against Iranian nuclear assets.
- **Killing of Qassem Soleimani (2020):** The U.S. assassination of IRGC General Qassem Soleimani escalated tensions. Iran retaliated with missile strikes on U.S. bases but avoided a full-scale war.
- **October 7, 2023 and Regional War Expansion:** After Hamas's attack on Israel, Israel aimed to dismantle Iran's regional axis. The conflict expanded to Lebanon and Syria, weakening Hezbollah and increasing direct Israel–Iran confrontation.
- **Direct Israel–U.S. Strikes on Iran (June War):** In June, Israel launched pre-emptive strikes on Iran, joined by the U.S., targeting nuclear and military facilities; after 12 days, a ceasefire was reached but tensions persisted.

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- **Dispute Over Scope of Negotiations:** Israel and the U.S. demanded Iran end its nuclear programme, missile development and support for militias; Iran was willing to negotiate only on nuclear issues, leading to diplomatic deadlock.
- **Internal Unrest and External Pressure (2026):** Protests over economic issues in Iran were violently suppressed; meanwhile, U.S. military buildup and Israeli threats intensified amid fragile diplomatic efforts mediated by Oman.
- **February Escalation and Regime Change Narrative:** Despite signs of a potential nuclear breakthrough, Israel and the U.S. launched fresh strikes on Iran; Iran retaliated with ballistic missiles, framing the conflict as a war of survival against regime change efforts.
- **Broader Geopolitical Stakes:** The conflict reflects a struggle over regional dominance in West Asia, with Israel and the U.S. seeking strategic realignment and Iran defending its regime and regional influence.

2. India-Brazil MoU on critical minerals:

Context: India and Brazil signed a memorandum of understanding (MoU) on rare earths and critical minerals during President Lula da Silva's state visit to India on February 21.

More about:

- **India–Brazil MoU on Critical Minerals:** India and Brazil signed a non-binding MoU during President Lula da Silva's visit on February 21 to cooperate across the full critical minerals value chain, including exploration, mining, processing, recycling and refining, with the aim of strengthening supply chains and competitiveness.
- **India's Domestic Strategy on Critical Minerals:** India approved the National Critical Mineral Mission (2025) to cover exploration to recycling stages from 2024–25 to 2030–31 with public investment support; it identified 30 critical minerals in 2023 and amended the Mines and Minerals (Development and Regulation) Act, 2023 to empower the Centre to auction critical mineral blocks.

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- **Auction Reforms and Overseas Outreach:** The Ministry of Mines has conducted multiple auction rounds for critical mineral blocks; Khanij Bidesh India Ltd. is pursuing overseas acquisitions and exploration partnerships, including in Argentina and Chile, to diversify supply sources.
- **Trade and Manufacturing Push:** India has rationalised customs duties to ease import costs for key inputs and plans to begin domestic production of rare earth permanent magnets by end-2026 to reduce import dependence in sectors like electric vehicles and defence.
- **Strategic Significance for India:** The MoU enhances India's bargaining power by diversifying sourcing options, reduces vulnerability to supply disruptions or export controls, encourages private investment through supply certainty and supports compliance with global environmental and sourcing standards.
- **Link with Pax Silica Initiative:** India joined the U.S.-led Pax Silica initiative on February 20 to secure supply chains in the "silicon stack"; while the Brazil MoU complements supply security goals, it does not make Brazil a Pax Silica member.
- **Benefits for Brazil:** Brazil, with significant reserves of rare earths, bauxite, manganese and lithium, can attract Indian investment for mining and processing projects, secure long-term purchase agreements and move up the mineral value chain instead of exporting raw ores.
- **Broader Geoeconomic Impact:** The MoU strengthens both countries' negotiating positions in global mineral markets and supports diversification, resilience and value addition in critical mineral supply chains.

3. Centre's focus shifts from selling PSUs to earning more from them:

Context: Despite having launched a revamped 'disinvestment policy' in 2020, the central government's focus has decisively shifted from selling off its assets to extracting the maximum value from them, an analysis of data shows. The recent launch of the National Monetisation Pipeline 2.0 marks an extension of this policy shift.

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More about:

- **Shift from Disinvestment to Asset Monetisation:** Despite announcing a revamped disinvestment policy in 2020, the Centre has shifted focus from selling assets to maximising returns through dividends and asset monetisation, reflected in the launch of National Monetisation Pipeline (NMP) 2.0.
- **Public Sector Enterprises Policy (2021):** The government stated it would exit non-strategic sectors and retain minimal presence in strategic ones, reiterating that the state should support but not necessarily own businesses.
- **Declining Disinvestment Revenues:** After a brief recovery in 2022-23 with ₹35,294 crore raised through stake sales in ONGC, LIC, GAIL and IRCTC, disinvestment proceeds declined to ₹16,507.3 crore in 2023-24 and ₹10,163.02 crore in 2024-25; ₹15,562.8 crore has been raised so far in 2025-26.
- **Removal of Disinvestment Targets:** From 2023-24 revised estimates, the government removed a separate disinvestment head in the Budget, clubbing it under 'Miscellaneous Capital Receipts', and stopped setting annual disinvestment targets.
- **Limited Private Sector Appetite:** Officials noted weak private sector interest in acquiring CPSEs due to large workforce sizes and loss-making assets, constraining privatisation efforts.
- **Focus on Dividend Maximisation:** DIPAM's 2020 advisory urged CPSEs to adopt a consistent and higher dividend policy; revised 2024 capital restructuring guidelines emphasised value creation and improved operational flexibility to maximise returns.
- **Rising Dividend Receipts:** Dividend income (excluding PSU banks and RBI) increased from ₹39,750 crore in 2020-21 to ₹74,128.6 crore in 2024-25; ₹59,730.6 crore has been received so far in 2025-26.
- **National Monetisation Pipeline (NMP):** Launched in 2021 to lease brownfield assets to private players without transferring ownership, targeting ₹6 lakh crore between 2021-22 and 2024-25, with 90% reportedly achieved.

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- **Launch of NMP 2.0:** NMP 2.0 aims to mobilise about ₹16.72 lakh crore through asset monetisation during 2025-26 to 2029-30, reinforcing the policy shift towards extracting value rather than outright privatisation.

Quick Bites:

- Prime Minister Narendra Modi on Saturday inaugurated Micron Technology Inc.'s Assembly, Test, Marking, and Packaging (ATMP) facility in Sanand, Gujarat. An ATMP facility packages semiconductors after they have been fabricated elsewhere. The facility in Sanand will focus on data storage chips, converting "advanced DRAM and NAND wafers from Micron's global manufacturing network into finished memory and storage products."
- Prime Minister Shri Narendra Modi launches Nationwide HPV Vaccination Campaign and Development Projects Worth ₹17,000 Crore in Ajmer, Rajasthan.
- The Central Bank of the United Arab Emirates (CBUAE) has launched what it calls the world's first sovereign financial cloud services infrastructure, developed in partnership with Core42, a subsidiary of G42, to provide a secure, AI-powered digital backbone exclusively for the UAE's financial sector and strengthen data sovereignty, resilience and innovation in digital finance.

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02-03-2026

PRELIMS ARTICLES

1. Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP):

Context: Janaushadhi Saptah 2026, an outreach initiative to create awareness about affordable and quality generic medicines, commenced with Health Check-Up camps across the country, marking the beginning of a week-long celebrations leading up to 8th Janaushadhi Diwas on 7th March.

About Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP):

- Pradhan Mantri Bhartiya Janaushadhi Pariyojana is a campaign launched by the Department of Pharmaceuticals to provide quality medicines at affordable prices to the public.
- Under PMBJP, special outlets called Pradhan Mantri Bhartiya Jan Aushadhi Kendra are established across the country.
- PMBJKs provide generic medicines at significantly lower prices compared to branded drugs while maintaining the same quality and efficacy.
- Bureau of Pharma PSUs of India (BPPI) is the implementing agency of PMBJP under the Department of Pharmaceuticals.
- BPPI was established with the support of Central Public Sector Undertakings (CPSUs) to ensure procurement, supply and marketing of generic medicines.
- Under the Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP), more than 18,000 Jan Aushadhi Kendras (JAKs) are operating across the country.
- The Government has further set an ambitious target of expanding this network to 25,000 Kendras by 31st March 2027, strengthening last-mile access to affordable and quality medicines.

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About Jan Aushadhi Kendras (JAKs):

- These are set up under Pradhan Mantri Bhartiya Janaushadhi Pariyojana, which was launched by the Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers in November 2008.
- The kendras aims to provide quality medicines at affordable prices for all, particularly the poor, to reduce out-of-pocket expenses in healthcare.
- These Jan Aushadhi Kendras provide generic drugs, which are available at lesser prices but are equivalent in quality and efficacy to expensive branded drugs.
- Jan Aushadhi stores also sell allied medical products commonly sold in chemist shops to improve the viability of running the Jan Aushadhi store.
- Pharmaceutical & Medical Devices Bureau of India (PMBI) has been established under the Department of Pharmaceuticals, Govt. of India, for coordinating procurement, supply, and marketing of generic drugs through the PMBKs.
- The incentive amount of Rs.5 lakh will be provided to set up Pradhan Mantri Bhartiya Jan Aushadhi Kendra.
- State Governments or any organization / reputed NGOs/ Trusts / Private hospitals / charitable institutions / Doctors / Unemployed pharmacists/ individual entrepreneurs are eligible to apply for the new Jan Aushadhi Kendra.
- The applicants shall have to employ one B Pharma / D Pharma degree holder as Pharmacist in their proposed store.

2. Members of Parliament Local Area Development Scheme (MPLADS) funds:

Context: U.P. receives over 84% of all out-of-State MPLADS funds.

About MPLADS funds:

- It is an ongoing Central Sector Scheme which was launched in 1993-94.

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- The Scheme enables the Members of Parliament to recommend works for creation of durable community assets based on locally felt needs to be taken up in their constituencies in the area of national priorities.
- The activities can include drinking water, education, public health, sanitation, roads etc.
- The Ministry of Statistics and Programme Implementation has been responsible for the policy formulation, release of funds and prescribing monitoring mechanism for implementation of the Scheme.
- Under the scheme annual MPLADS fund entitlement per MP constituency is Rs. 5 crore.
- Lok Sabha Members can recommend works within their Constituencies.
- The Rajya Sabha Members of Parliament can recommend works in one or more districts in the State from where he/she has been elected.
- The Nominated Members of the Lok Sabha and Rajya Sabha may select any one or more Districts from any one State in the Country for implementation of their choice of work under the scheme.
- MPs are to recommend every year, works costing at least 15 percent of the MPLADS entitlement for the year for areas inhabited by Scheduled Caste population and 7.5 per cent for areas inhabited by S.T. population.
- In case an elected MP wishes to contribute MPLADS funds outside the constituency or the State/UT, they can recommend work up to Rs 25 lakh in a financial year.
- MPs do not directly receive funds under MPLADS.
- The Centre directly transfers the sanctioned amount in two instalments of Rs. 2.5 crore to the district authorities of the concerned MP's nodal district after a recommended project gets approval.

3. Gharials:

Context: Madhya Pradesh Chief Minister Mohan Yadav on Sunday released gharials and turtles into the river at the Kuno National Park in Sheopur district, calling it an important step towards conservation.

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About Gharials:

- **Species Identity:** Gharial is a freshwater crocodile belonging to Order Crocodylia and Family Crocodylidae.
- **Scientific Name:** Gavialis gangeticus.
- **Etymology:** The name 'gharial' comes from the Hindi word ghara (pot), referring to the bulbous snout tip (ghara) of adult males.
- **Geographical Range (Historical):** Rivers of Bangladesh, Bhutan, India, Myanmar, Nepal, and Pakistan.
- **Current Major Population:** Found mainly in tributaries of the Ganga — Chambal and Girwa (India) and Rapti-Narayani (Nepal).
- **Gharial Reserves in India:** Located in Uttar Pradesh, Madhya Pradesh, and Rajasthan.
- **Size:** One of the largest crocodilians; males reach 16–20 ft (5–6 m), females 11.5–15 ft (3.5–4.5 m).
- **Physical Features:** Thick skin with smooth, non-overlapping scales; extremely long and slender snout (thinnest among crocodilians); adult males possess a bulbous 'ghara'.
- **Habitat Nature:** Most aquatic crocodilian; rarely leaves water except for basking and nesting on sandbanks.
- **Breeding Season:** Mating during November–January; egg-laying during March–May.
- **Conservation Status:** Classified as 'Critically Endangered' under the IUCN Red List.

Crocodile species in India:

Species	Description	Natural Habitat
Estuarine / Saltwater Crocodile (Crocodylus porosus)	Largest living reptile on Earth; IUCN: Least Concern; Schedule I of Wildlife Protection Act, 1972; CITES: Appendix I	Found in India at Bhitarkanika, Sundarbans, and Andaman & Nicobar Islands

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Mugger / Marsh Crocodile (Crocodylus palustris)	Broad snout; digs burrows for nesting; IUCN: Vulnerable; Schedule I of Wildlife Protection Act, 1972; CITES: Appendix I	Present in 15 Indian States, including much of the Ganga River drainage
Gharial (Gavialis gangeticus)	Long, narrow snout with bulbous knob ('ghara'); primarily fish-eating; IUCN: Critically Endangered; Schedule I of Wildlife Protection Act, 1972; CITES: Appendix I	Inhabits freshwater rivers such as Chambal, Girwa, Ghagra, Son, and Gandak

MAINS SPECIFIC ARTICLES:

1. Sixteenth Finance Commission — misses and concerns:

Context: The Hindu Editorial analysis.

Background and Approach of the Sixteenth Finance Commission

- The Sixteenth Finance Commission had greater flexibility as its Terms of Reference flowed directly from constitutional provisions under Articles 270 and 280, unlike earlier Commissions guided by detailed central directives.
- It examined the two core dimensions of fiscal transfers: vertical (Centre–State division) and horizontal (inter-State distribution).

Vertical Devolution: Retention of 41% Share

- The Fourteenth Finance Commission increased States' share in the divisible pool from 32% to 42%, citing discontinuation of State plan grants (~3%).
- Share was later reduced to 41% after the reorganisation of Jammu and Kashmir.

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- The Sixteenth Finance Commission retained the 41% share, giving it semi-permanent character despite Centre's concerns over reduced fiscal space.

Centre's Response to Higher Devolution

- Increase in non-shareable cesses and surcharges.
- Reduction in Centre's share in Centrally Sponsored Schemes.
- Non-acceptance of sector-specific/State-specific grants recommended by the Fifteenth Finance Commission.

Cesses and Surcharges Issue

- The Commission made no specific recommendation on limiting cesses and surcharges, which are non-shareable and ideally meant for specific, time-bound purposes.
- Proposed a 'grand bargain' (para 7.67): States accept smaller share in a larger divisible pool if Centre merges cesses/surcharges into regular taxes.
- **Criticism:** Commission did not explicitly uphold constitutional spirit regarding objective sharing of divisible pool.

Discontinuation of Revenue Deficit and Specific Grants

- Revenue deficit grants discontinued.
- No State-specific or sector-specific grants recommended.
- Result: Lower effective share of States in Centre's gross revenue receipts compared to the Fifteenth Finance Commission period.

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Trend in Effective Transfers (Tax Devolution + Grants)

- **11th–13th FC periods:** Around 27–28% of Centre's gross revenue receipts.
- **14th FC period:** Sharp rise to 35.6%.
- **15th FC period (2020–25):** Slight decline to 34.4%, but still high.
- **2026–27 (first year of 16th FC):** 32.7% as per Budget Estimates.
- **Concerns:** Overestimation of nominal GDP (11% vs Budget 10%) and failure to factor in revenue impact of major GST reforms (September 2025).

Horizontal Devolution: Introduction of Contribution Criterion

- New 'contribution' criterion introduced to reflect efficiency.
- Measured via share of State's GSDP in all-State GSDP.
- Differentiation required between production efficiency and fiscal efficiency.

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Use of GSDP and Income Distance

- Income distance: Lower per capita GSDP $\rightarrow$ Higher share.
- Contribution criterion: Higher per capita GSDP $\rightarrow$ Higher share.
- To moderate impact, square root of GSDP used instead of absolute value.

Dropping Fiscal Efficiency Criterion

- Tax effort/fiscal discipline criterion dropped.
- Seen as inconsistent with Commission's narrative on efficiency.
- Changes in weights of other criteria considered judgemental.

States Losing Under 16th FC Formula

- **Major losers:** Madhya Pradesh, Uttar Pradesh, West Bengal, Bihar, Odisha, Chhattisgarh, Rajasthan.
- **Other losing States:** Arunachal Pradesh, Meghalaya, Manipur, Nagaland, Tripura, Sikkim, Goa.
- Gains among richer States not uniform.

Need for Equalisation and Revenue Gap Grants

- Devolution formula alone insufficient to capture diverse cost and need differentials across States.
- Revenue gap/equalisation grants could have mitigated losses.
- Article 275 enables State-specific grants based on needs, especially for equalising critical services like health and education.
- Commission avoided normative revenue gap assessment instead of refining equalisation framework.

Overall Assessment

- Retained 41% vertical share but reduced effective transfers through discontinuation of grants.

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- Introduced efficiency-linked horizontal criteria but diluted fiscal discipline measures.
- Missed opportunity to strengthen equalisation principle while accommodating performance concerns of richer States.

2. Missile interceptors:

Context: The outbreak of fresh hostilities between the U.S.-led coalition, including Israel and the United Arab Emirates, and Iran seems to have triggered a newly integrated regional air defence network different from the one these actors deployed during their brief yet intense conflict in June last year.

More about:

Renewed Regional Conflict and Integrated Air Defence

- Fresh hostilities between the U.S.-led coalition (including Israel and the UAE) and Iran have activated a more integrated regional air defence network than during the June 2025 12-day war.
- The 2025 conflict tested the Integrated Air and Missile Defence against over 500 Iranian ballistic missiles and more than 1,000 drones.
- The UAE has now deployed South Korea's Cheongung II along with U.S. THAAD and Patriot systems, including previously prototype technologies.
- The alliance is rationing high-cost interceptors to sustain prolonged operations.

What is Missile Defence?

- Missile defence systems detect, track, and destroy incoming missiles before impact.
- They rely on satellites, ground radars, sensors, command centres, and interceptor missiles.
- Interceptors either explode near the target (proximity fuse) or use hit-to-kill kinetic impact.
- Besides protection, missile defence acts as deterrence and provides decision-making time to leaders.

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How the Patriot Interceptor Works

- The MIM-104 Patriot uses a stationary radar that electronically scans the sky with thousands of radio beams.
- Radar locks onto threats and continuously updates trajectory data.
- The Engagement Control Station computes trajectory and commands launch.
- The interceptor is guided mid-course by ground radar and uses an onboard seeker in final seconds.
- Destruction occurs via proximity detonation or direct kinetic hit.

Effectiveness of Interceptors

- Iron Dome reports 80–97% success against short-range rockets.
- Patriot achieved 100% success against Russian Kinzhal missiles in one 2023 Kyiv engagement and over 60% against Iskander-M initially.
- Russian decoys and manoeuvres later reduced Patriot's effectiveness reportedly to around 10%.
- Ground-based Midcourse Defense has a 55% success rate in scripted tests.

Cheongung II: UAE's 360° Defence

- Cheongung II acquired by the UAE intercepts cruise and tactical ballistic missiles over the Gulf.
- Uses hit-to-kill technology similar to Patriot.
- Equipped with Vertical Launch System and rotating multi-function radar for 360° coverage without repositioning.
- Features onboard radar seeker to counter sea-skimming cruise missiles.

Cost and Rationing of Interceptors

- Patriot PAC-3 MSE interceptors cost about $4 million per shot.
- Iran uses saturation attacks with cheaper missiles to exhaust interceptors.

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- U.S. deployed Indirect Fire Protection Capability using AIM-9X missiles to reduce Patriot dependence.
- U.S. Navy uses SM-6 missiles in dual roles (ballistic defence and maritime strike).
- Israel's Iron Beam laser system is being used against drone swarms to conserve Arrow 3 and Stunner interceptors.

Layered Defence During the 12-Day War (2025)

- Exo-atmospheric layer: Arrow 3 and U.S. Navy SM-3 missiles intercepted threats in space.
- Endo-atmospheric layer: THAAD and Arrow 2 systems.
- Mid-layer: David's Sling with Stunner interceptors.
- Final layer: Patriot batteries.
- Anti-drone defence: Iron Dome, Iron Beam, and air-to-air missiles from U.S., UK, and French forces.

Post-War Production Challenges

- U.S. quadrupled production orders for THAAD and PAC-3 MSE.
- Directed-energy systems deployment accelerated.
- Replenishing THAAD stocks may take at least 1.5 years at current capacity.
- Manufacturing base not scaled for sustained high-intensity warfare.

Iran's Air and Missile Defence Network

- Bavar-373 with Sayyad-4B missiles reportedly intercepts targets beyond 300 km.
- Arman Ballistic Missile Defence system designed for short- to medium-range ballistic missiles with 360° radar.
- Sevom-e-Khordad counters cruise missiles and fighter jets; mobile and uses Sayyad-3 missiles.

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- Tor-M1 protects against precision-guided bombs.
- Majid and Azarakhsh systems counter drones and low-flying cruise missiles.

Limitations of Iran's Defences

- High-volume U.S.-Israeli barrages may overwhelm batteries during reload intervals.
- Reports of strikes in Tehran and Isfahan question effectiveness of Bavar-373 against stealth aircraft.
- Missile defence systems on both sides face constraints of stockpiles, cost, and production capacity.

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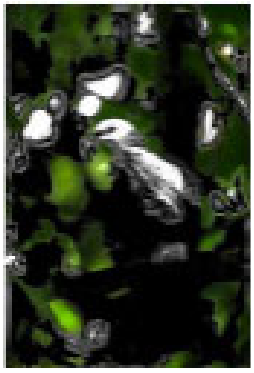
03-03-2026

PRELIMS ARTICLES:

1. Nilgiri Wood Pigeon:

Context: Climate change could drastically shrink the habitat of the Nilgiri Wood Pigeon by the end of the century, according to a recent scientific study. The study titled "Biogeography and habitat suitability of the Nilgiri Wood Pigeon using MaxEnt", published in the Proceedings of the Indian National Science Academy, applied the MaxEnt machine-learning model to predict habitat suitability.

About Nilgiri Wood Pigeon:



- The Nilgiri wood pigeon (Columba elphinstonii) is a large pigeon found in the moist deciduous forests and sholas of the Western Ghats in southwestern India.
- They are mainly frugivorous and forage in the canopy of dense hill forests.
- They are best identified in the field by their large size, dark colours and the distinctive checkerboard pattern on their nape.
- The male has a paler grey crown while the female has a darker grey crown with a pale throat.

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- A few relict populations survive on the high elevations hills of the peninsula such as the Biligirirangan Hills and Nandi Hills near Bangalore.
- Nilgiri wood pigeon feeds mainly on fruits, especially Lauraceae family fruits, and forages mostly in the middle and upper forest canopy.
- Occasionally descends to the ground to feed on fallen fruits and has been recorded eating small snails and inve1tebrates.
- Plays an important ecological role as a seed disperser of large forest trees.
- Breeding season is March-July; builds a flimsy twig platform nest and lays a single white egg visible from below.
- Exhibits seasonal movements within forests based on fruiting patterns of preferred trees.
- Known to ingest soil, possibly for mineral nutrition or digestion.
- Distinctive call: loud, low-frequency langur-like hoot followed by deep "who-who-who" notes.

MaxEnt (Maximum Entropy):

- MaxEnt (Maximum Entropy) is a statistical modeling technique based on the principle of maximum entropy.
- It selects the probability distribution with maximum uncertainty while satisfying known constraints.
- The principle was proposed by Edwin T. Jaynes.
- Among all possible distributions meeting the constraints, the one with the highest entropy is chosen
- It ensures the least biased prediction using only the available infom1ation.
- In ecology, it is widely used for species distribution modelling.

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2. Strait of Hormuz:

Context: With Iran having closed the crucial Strait of Ilormuz following the conflict in West Asia, supplies of oil from all of these countries arc at risk.



About Strait of Harmuz:

- Located between Iran (north) and the Arabian Peninsula, mainly the United Arab Emirates and Musandam Peninsula (south).
- It connects the Persian Gulf in the west to the Gulf of Oman and fw1her to the Arabian Sea, making it the only sea outlet of the Persian Gulf.
- The waterway is about 167 km long and roughly 29 nautical miles (about 54 km) wide at its nanowest point.
- Important islands in the strait include Qishm Island, Hormuz Island, and Hengam Island.
- It is one of the world's most critical maritime choke points for energy transport.
- Around one-fifth of global oil supply and a large share of liquefied natural gas shipments transit through this route annually.
- Major oil exporters dependent on this passage include Saudi Arabia, Iraq, Kuwait, Qatar, Iran and the UAE, with most shipments destined for Asian markets.

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- India relics heavily on this corridor, with a significant share of its crude oil and LNG imports passing through it.

3. Durand Line:

Context: Pakistan and Afghanistan engage m intense military clashes, signalling a break in political, military, and societal ties across the Durand Line.

More about:

Recent Military Escalation

- Pakistan and Afghanistan engaged in two major clashes within six months.
- Pakistan conducted air and missile strikes in Kabul and Kandahar; Taliban targeted Pakistani posts across the Durand Line.
- Pakistan declared an "open war" despite earlier Turkiye-Qatar mediated ceasefire.

Triple Rupture in Relations

- Political rupture between Islamabad and Taliban-led Kabul.
- Breakdown between Pakistan's Establishment and Taliban leadership.
- Growing societal divide due to Afghan refugee deportations.

Core Cause - TTP Issue

- Pakistan accuses Taliban of supporting or failing to control Tehrik-e-Taliban Pakistan (TTP).
- Taliban reluctant to act against TTP due to past refuge ties and IS-Khorasan threat.

Strategic Fallout

- Pakistan's "strategic depth" policy now backfiring.
- Mutual distrust deepened by historical double-game accusations.

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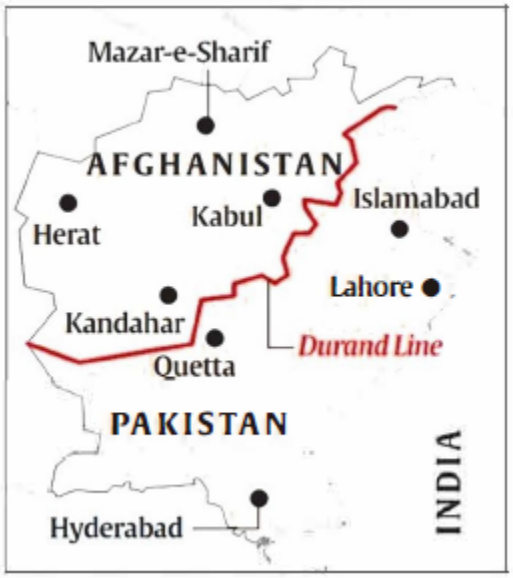
Power Asymmetry

- Pakistan militarily and economically stronger; Taliban lacks air and naval power.
- Afghanistan heavily trade-dependent on Pakistan.

Future Outlook

- Relations likely to remain conflict-prone.
- Taliban may avoid full-scale war, opting for limited or indirect responses.

About Durand line:



- The Durand Line was drawn in 1893 between British India and Afghanistan by Sir Henry Mortimer Durand and Emir Abdur Rahman Khan.
- It stretches about 2,600 km from the Iran border to the China border, cutting across the Karakoram range and Registan desert.
- Afghanistan became strategically important during the 19th century amid the Anglo-Russian rivalry in Central Asia.

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- The First Anglo-Afghan War (1839-42) ended in British defeat.
- The Second Anglo-Afghan War (1878-80) led to the Treaty of Gandamak (1879), giving Britain control over Afghanistan's foreign affairs.
- The 1893 Durand Agreement formalised the boundary between British India and Afghanistan. The line divided Pashtun tribal areas, placed Balochistan under British India, and created the Wakhan Corridor as a buffer.
- The Third Anglo-Afghan War (1919) ended with the Treaty of Rawalpindi, restoring Afghanistan's foreign policy control and reaffirming the Durand Line.
- After 1947, Pakistan inherited the border, but Afghanistan refused to recognise it as legitimate. The Pashtunistan demand intensified tensions between the two countries.
- All Afghan regimes, including the Taliban, have rejected the legitimacy of the Durand Line.

4. Nucleic Acid Test (NAT):

Context: The Supreme Court has decided to look into whether blood banks should compulsorily conduct Nucleic Acid Test (NAT) for identification of diseases.

About Nucleic Acid Test (NAT):

- A nucleic acid test (NAT) detects specific DNA or RNA sequences of pathogens.
- It is commonly used to identify viruses or bacteria in blood, tissue, urine, etc.
- NAT detects genetic material directly, unlike tests that detect antigens or antibodies.
- It enables early diagnosis because genetic material appears before antibodies or antigens.
- Since pathogen genetic material is often present in small amounts, amplification is usually required.
- Tests that include amplification are called nucleic acid amplification tests (NAATs).

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MAINS SPECIFIC ARTICLES:

1. New series of national accounts data:

Context: The Hindu Editorial.

Base Year Revision

- National accounts base year updated from 2011-12 to 2022-23.
- Update was long overdue as earlier data had become outdated and less representative.

Methodological Improvements

- Adoption of double-deflator approach to separately account for inflation in intermediate and final goods.
- Proportionate allocation of multi-sector company output to improve sectoral accuracy.
- Enhanced robustness through improved estimation techniques.

New Data Sources

- Household data to be sourced annually from ASUSE and PLFS instead of extrapolations.
- Integration of GST data to improve consumption and production estimates.
- Better estimation methods for agriculture and informal sector.

Growth Projections

- GDP growth projected at 7.6% for 2025-26 under the new series.
- Higher than 7.4% growth projected under the old series.

Revised Economic Size

- Economy pegged at 345.47 lakh crore in 2025-26.
- Around 3.3% smaller than estimates under the old series.

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- GDP for 2023-24 and 2024-25 revised downward by 3.8% each.

Implications for $5 Trillion Goal

- With rupee depreciation, India's economy currently stands at about $3.8 trillion.
- $5 trillion target appears more distant.

Fiscal Challenges

- Lower nominal GDP makes fiscal deficit and debt targets harder to achieve.
- Fiscal ratios pegged to GDP become more stringent with reduced base.

Overall Assessment

- New series provides more accurate and reliable economic data.
- Realignment of policy targets based on updated data is preferable to relying on outdated metrics.

2. How landscapes' 'memories' shape the way Indian cities flood:

Context: In India's cities, streets remain waterlogged long after the rains have passed, and these scenes are often dismissed as failures of drainage systems; however, landscapes do not respond to rain instantly or forget it quickly; instead, they exhibit hydrological hysteresis — a 'memory' of past rainfall.

Concept of Hydrological Hysteresis

- Hydrological hysteresis refers to the phenomenon where a landscape's response to rainfall depends not only on current rain but also on past rainfall events.
- It explains why water movement through soils, rivers, wetlands, and cities is path-dependent rather than instantaneous.

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Landscape Memory of Rain

- Soils, aquifers, wetlands, and floodplains store water and release it at varying rates.
- The rainfall-runoff relationship is non-linear and changes as land shifts from dry to saturated conditions.
- Saturated soils reduce infiltration, increasing surface runoff and flood risk even without intensified rainfall.

Catchment Behaviour

- A dry catchment absorbs rainfall like a sponge.
- A saturated catchment generates rapid runoff with even small additional rainfall.
- Flooding can occur due to accumulated moisture from previous rains.

River Dynamics During Floods

- Rivers initially channel water downstream when confined within banks.
- Once banks are breached, water spreads laterally into floodplains, wetlands, and low-lying areas.
- Floodplains store large volumes of slow-moving or stagnant water.
- Even after rainfall weakens, stored water drains slowly, prolonging floods.

Falling Limb Effect

- When water levels recede, river conditions differ from when levels were rising.
- Altered storage, sediment deposition, and groundwater rise delay drainage.
- The system retains a "memory" of the flood event.

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Urban Flooding Example - Bengaluru

- In October 2024, Kogilu and Doddabommasandra lakes overflowed in Yelahanka after sustained rainfall.
- Lakes spilled into roads and submerging stormwater drains once critical levels were crossed.
- Flooding persisted even as rainfall reduced due to saturated soils and submerged drains.
- On the falling limb, identical lake levels caused more flooding than during the rise.

Historical Context of Urban Hydrology

- Bengaluru's 16th-century interconnected lake system under Kempegowda allowed gradual water spread and return.
- Urbanisation replaced natural streams and floodplains with concrete channels and construction.
- The altered system fills quickly, spills abruptly, and drains slowly.

Policy Implications

- Rainfall totals alone are poor indicators of flood risk.
- Pre-existing soil moisture and landscape saturation must be considered in planning.
- Lakes, wetlands, and floodplains function as natural water-storage infrastructure.
- Climate change makes recognition of hydrological memory crucial for basin-scale planning beyond engineering solutions.

Quick Bites:

➢ The Ministry of Education today launched the online registration portal for Yuva Sangam - Phase VI under the Ek Bharat Shreshtha Bharat (EBSB) initiative. "Yuva Sangam" is a flagship Youth Exchange Programme of the Department of Higher Education, Government of India, aimed at strengthening emotional bonds and fostering mutual understanding among young citizens from different States and Union Territories. The initiative promotes the spirit of "Unity in Diversity" by

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facilitating structured exposure visits between paired States/UTs. Interested youth in the age group of 18-30 years, including students of Higher Education Institutions, NSS/NYKS volunteers, and young professionals, are eligible to apply.

- Researchers have identified a new genus and species of subterranean fish, "Gitchak nakana", from a dug-out well in western Assam. The discovery marks the first aquifer-dwelling, or phreatobitic, fish recorded from Northeast India.
- Researchers have discovered fragments of a 12th-century Mandir-style stone pillar belonging to Yadava dynasty near the Vena River in Hinganghat (Wardha district), about 70 km from Nagpur, highlighting the town's medieval historical and cultural significance.

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04-03-2026

PRELIMS ARTICLES:

1. World Wildlife Day 2026:

Context: Every year on 3 March, the world observes World Wildlife Day, proclaimed by the United Nations to celebrate wild fauna and flora and to raise awareness about their importance to people and the planet.

More details:

- The day marks the adoption of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), reinforcing global commitment to ensuring that trade in wildlife does not threaten species survival.
- The day underscores that wildlife is not merely part of nature's beauty, but a critical pillar of food security, healthcare, livelihoods, climate resilience, and sustainable development.
- The theme for World Wildlife Day 2026 - "Medicinal and Aromatic Plants: Conserving Health, Heritage and Livelihoods" - highlights the importance of plants used for medicine, their role in preserving cultural traditions.

Importance for India:

- India is one of the 17 mega biodiversity-rich countries in the world.
- It hosts about 7% of the world's biodiversity.
- India has 15 distinct agro-climatic regions.
- The country has around 45,000 plant species.
- Nearly 15,000 of these are medicinal plants.

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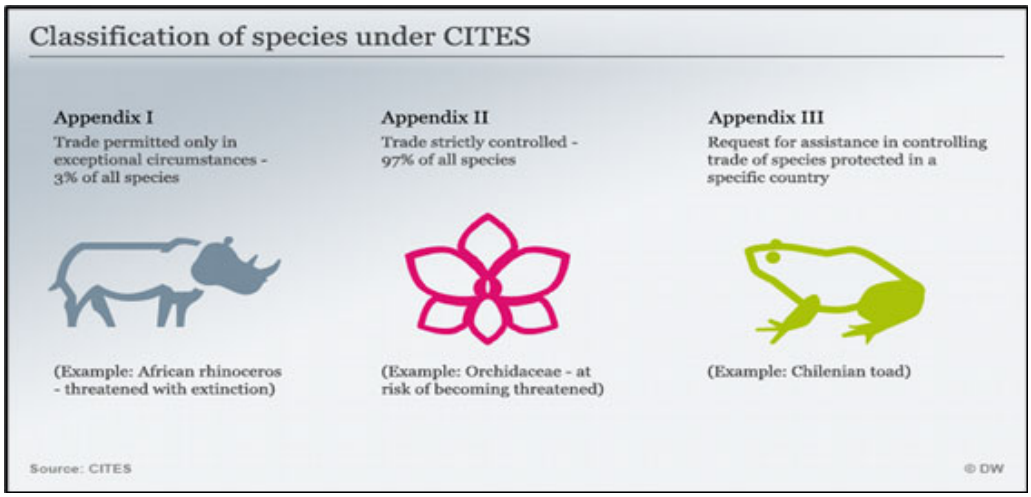
- About 8,000 medicinal plant species are used in Indian systems of medicine and folk traditions.
- Nearly 70% of medicinal and aromatic plants (MAPs) are found in the Western Ghats, Eastern Ghats, Himalayas, and Aravalli range.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):



- It is an international agreement to regulate worldwide commercial trade in wild animal and plant species.
- It was signed on March 3, 1973 on World Wildlife Day.
- It is administered by the United Nations Environment Programme (UNEP).
- Secretariat — Geneva, Switzerland.
- CITES is legally binding on state parties to the convention, which is obliged to adopt their domestic legislation to implement its goals.
- In India, Wildlife Crime Control Bureau, works for the Implementation and monitoring of CITES under the Ministry of Environment, Forest and Climate Change.
- In the context of CITES, India is considered a category 2 country under the CITES National Legislation Project meaning that only 1 – 3 of the four requirements for effective implementation of CITES have been met.

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2. Indian Bison:

Context: The Debrigarh Wildlife Sanctuary will host the second edition of the two-day 'Indian Bison Fest' on March 8 at Zeropoint, highlighting conservation of the Indian bison, locally known as 'Gayala'.

About Indian Bison:

- The Indian Bison or Gaur (Bos gaurus) is the tallest species of wild cattle found in India and largest extant bovine.
- There are about 13,000 to 30,000 gaurs in the world with approximately 85% of the population present in India.
- It is listed as vulnerable in the International Union for Conservation of Nature (IUCN) Red List.
- The Western Ghats in southern India constitute one of the most extensive extant strongholds of gaur, in particular in the Wayanad – Nagarhole – Mudumalai – Bandipur complex.
- The gaur is the State Animal of Goa and Bihar.
- They prefer evergreen forests and moist deciduous forests. However, they can survive in dry deciduous forests also.
- They are not found in the Himalayas with an altitude greater than 6,000 ft.

Debrigarh Wildlife Sanctuary:

- It is located in Bargarh district of Odisha near the Hirakud Dam on the Mahanadi River.
- It covers an area of 346.91 square kilometres.
- It is bounded on the east and north by the Hirakud reservoir.
- It was declared a Wildlife Sanctuary on 8 February 1985.
- It is an important site for in situ conservation of wildlife and habitats in Odisha.
- The vegetation mainly consists of dry deciduous forests.
- Key fauna include four-horned antelope, Indian leopard, Indian elephant, sambar, chital and gaur.

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3. Megamaser:

Context: Astronomers reported finding the most distant hydroxyl maser yet using the MeerKAT telescope.

More about:

- **Meaning and Nature:** A hydroxyl megamaser is a naturally occurring cosmic maser that amplifies microwave or radio waves, similar to how a laser amplifies visible light.
- **Hydroxyl (OH) Molecule:** The term 'hydroxyl' refers to the OH molecule (one oxygen and one hydrogen atom) present in large interstellar gas clouds of distant galaxies.
- **Formation Trigger:** When galaxies collide, intense star formation and active supermassive black hole activity release enormous infrared radiation.
- **Energy Pumping Mechanism:** Infrared energy excites hydroxyl molecules to a high-energy state; when they return to a lower state, they emit amplified radio waves.
- **Why Called Megamaser:** These signals are termed megamasers because they are millions of times brighter than typical masers found in the Milky Way galaxy.
- **Astronomical Importance:** Radio waves from megamasers pass through dense cosmic dust, allowing astronomers to study obscured galactic regions.
- **Scientific Applications:** They help measure galaxy motion, study galaxy collisions, and understand the large-scale evolution of the universe.
- **Gigamaser Discovery:** A newly discovered megamaser from a galaxy billions of light-years away was magnified by a natural gravitational lens, making it the brightest ever detected and earning it the name 'gigamaser'.

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About MeerKAT Radio Telescope:

- MeerKAT is a connected array of radio telescopes located in the Northern Cape province of South Africa.
- It was originally called the Karoo Array Telescope (KAT), planned with 20 receptors, but was renamed "MeerKAT" ("more of KAT") after expansion to 64 receptors.
- It forms South Africa's contribution to the global Square Kilometre Array (SKA) project.
- It serves as a precursor instrument to the mid-frequency component of the SKA.
- It studies the evolution of the universe using radio signals from space.
- It consists of 64 dishes, each 13.5 metres in diameter, with a maximum separation of 8 km.
- The signals received are processed in a subterranean facility, enabling the array to function as a single instrument.
- It is currently the most powerful radio interferometer operating at centimetre wavelengths.

Square Kilometre Array Observatory (SKAO):

- SKAO is an intergovernmental organization that aims to build and operate cutting-edge radio telescopes.
- Its global headquarters is located in the Jodrell Bank Observatory, United Kingdom.
- The project will not have a single telescope but an array of thousands of antennas, to be installed in remote radio-quiet locations in South Africa and Australia, that will operate as one large unit meant to observe and study celestial phenomena.
- SKAO objectives also include study of gravitational waves.
- The SKAO, collocated in Australia (SKA-Low) and South Africa (SKA-Mid) with operational headquarters in the UK.
- Other ten countries involved are - Australia, Canada, China, India, Italy, New Zealand, South Africa, Sweden, and the Netherlands.

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MAINS SPECIFIC ARTICLES:

1. AI Impact Casebooks released in the AI Summit 2026:

Context: At the India AI Impact Summit 2026, a set of AI Impact Casebooks were released that described real time artificial intelligence (AI) deployment currently benefiting farmers, students and teachers, patients and the physically challenged in the Global South.

More about:

AI for the Physically Challenged:

- PathPal enables visually impaired users to scan handwritten notes, printed text and currency forinstant voice feedback even without stable internet.
- SMARTON uses advanced computer vision to interpret complex documents, tables, diagrams andcharts into structured audio, serving over 15,000 users through schools and NGOs.
- Shruti AI provides real-time voice-to-Indian Sign Language translation for the deaf.
- Vaani AI supports individuals with autism or speech impairments through intent prediction andcontextual prompts.
- Pheezee is an AI-powered wearable integrating joint mobility and muscle sensors to monitorrecovery in stroke and amputation patients.

AI Boosting Small Farmers' Earnings:

- MapMyCrop uses multi-sensor satellite imagery and super-resolution algorithms to predictoptimal harvest windows, increasing sugarcane yields significantly.
- The Chemistry-Aware Crop Yield Prediction system applies physics-guided machine learning andsatellite data to detect soil toxicities, reducing nitrogen use by 28% while improving productivity.
- MahaVISTAAR and FarmAdvice leverage natural language processing and voice-first interfacesto deliver expert agricultural advice in local dialects, overcoming literacy barriers.

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AI for Women Empowerment:

- NyayaSakhi-SWATI guides domestic violence survivors on legal rights and remedies.
- AtenIA uses a phygital AI mentoring model to counter gender stereotypes in STEM, significantlyincreasing girls' career aspirations.
- YASHODA AI trains women to identify AI-driven harms like deepfakes and scams.
- MetsaQ delivers voice-based advisories and helps women farmers access formal credit throughverifiable digital records.

AI in Healthcare Solutions:

- Nayanamritham 2.0 integrates AI into diabetic retinopathy screening in Kerala's public healthsystem. Cough Against TB uses sound analysis to triage tuberculosis cases.
- AyurVAID D-RISK enables non-invasive diabetes detection. The Predictive Virtual Cardiac Twin platform allows 3D visualisation of a patient's heart before surgery to improve precision.

AI as an Education Partner:

- BharatGen Yojaka supports scalable spoken language assessment with teacher oversight. Chimple enables educators to create curriculum-aligned games in local languages.
- QwiXGenie provides AI tutoring for coding and technical skills in Tier-2 and Tier-3 cities. PadhAI uses speech recognition to assess oral reading fluency and give instant feedback.

Quick Bites:

- Tamil Nadu has inaugurated its first Dark Sky Park at the Ariyur Shola Reserve Forest in Kolli Hills, Namakkal district, marking a significant step towards promoting astro-tourism in the State. Dark Sky Parks are designated areas with minimal light pollution to promote astronomical observation. In 2022, a first-of-its-kind initiative, the Department of Science & Technology (DST) has announced the setting up of India's first Dark Sky Reserve in Hanle, Ladakh.
- Scotland has become the first nation in the United Kingdom to legalise water cremation, formally known as alkaline hydrolysis.

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05-03-2026

PRELIMS ARTICLES:

1. World Obesity Atlas, 2026:

Context: India ranks second globally in childhood obesity.

More details about the report:

- **Rising Childhood Obesity in India** - The World Obesity Atlas 2026 released on World Obesity Day reported that nearly 15 million children aged 5-9 and over 26 million aged 10-19 in India were overweight or obese in 2025.
- **Global Target Missed** - The World Obesity Federation warned that the 2025 global target to halve the rise in childhood obesity will be missed, with the deadline extended to 2030, though most countries including India remain off track.
- **Global Concentration of High BMI Cases** - Over 200 million overweight or obese children aged 5-19 are concentrated in 10 countries; China, India and the United States each have over 10 million affected children.
- **India's Comparative Position** - India ranks second after China with 41 million children having high BMI and 14 million living with obesity, while China leads with 62 million high BMI and 33 million obese children; the U.S. reports 27 million high BMI and 13 million obesity cases.
- **Projected Health Consequences** - The Atlas projects a substantial rise in disease indicators linked to high BMI in Indian children by 2040, signalling long-term public health risks.
- **Key Risk Factors in India** - About 74% of adolescents aged 11-17 fail to meet recommended physical activity levels; only 35.5% of school-age children receive school meals; 32.6% of infants face sub-optimal breastfeeding; 13.4% of women aged 15-49 have high BMI and 4.2% live with Type 2 diabetes; children aged 6-10 consume sugary drinks averaging 50 ml daily.

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- **Global Trends** - Worldwide, 20.7% of children are overweight or obese, up from 14.6% in 2010, and by 2040 around 507 million children are projected to be affected.
- **Call for Immediate Action** - The Federation urges governments to strengthen prevention and management strategies, including taxes on sugar-sweetened beverages and restrictions on marketing unhealthy foods to children, to reverse current trends.

2. Dark Oxygen:

Context: Scientists exploring the deep Pacific Ocean have reported the discovery of what they describe as "dark oxygen", detected about 4,000 metres below the ocean surface where sunlight never reaches.

More about:

- The discovery was made during research on polymetallic nodules on the Pacific Ocean floor, raising new questions about oxygen generation in extreme environments.
- The study was conducted in the Clarion-Clipperton Zone, a mineral-rich deep-sea region of the Pacific Ocean.
- Scientists deployed specialised instruments and benthic chambers to isolate sections of the seabed and monitor chemical changes.
- Instead of the expected decline, oxygen levels inside the chambers increased over time.
- Normally, deep-sea microbes and chemical reactions consume oxygen in sediments.
- The unexpected rise in oxygen suggests that an unknown seabed process may be generating oxygen even in complete darkness.

What is Dark Oxygen?

- "Dark oxygen" refers to oxygen detected in deep-sea environments where sunlight is completely absent.

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- Traditionally, oxygen production has been linked to photosynthesis by plants, algae and bacteria using light energy.
- Oxygen concentrations near polymetallic nodules increased over time in sealed seafloor experiments.
- This oxygen is produced thousands of feet below the ocean surface without sunlight or photosynthesis.
- Oceanic plankton, drifting plants, algae and certain bacteria are traditionally considered the main oxygen producers in oceans.
- Polymetallic nodules resembling lumps of coal were identified as the unexpected source of oxygen.
- These nodules contain metals such as manganese, iron, cobalt, nickel, copper and lithium. → The nodules generate oxygen through electrochemical reactions even in complete darkness. → They split water (H:O) molecules into hydrogen and oxygen, enabling non-photosynthetic oxygen production.

MAINS SPECIFIC ARTICLES:

1. Chronic traffic noise exposes kinks in India's urban regulations:

Context: In India, urban noise is relentless yet it is largely under-recognised as a public health concern.

- **Urban Noise as a Public Health Concern** - Urban traffic in India routinely reaches 80-100 dB, exceeding the World Health Organization recommended 70 dB limit, posing a significant risk of Noise-Induced Hearing Loss (NIHL).
- **Changing Understanding of NIHL** - NIHL is no longer viewed solely as an occupational hazard of factories and mines; scientific evidence shows chronic exposure to environmental noise, especially road traffic, can cause measurable auditory damage.

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- **Physiological Impact of Noise** - Studies by CSIR National Environmental Engineering Research Institute indicate NIHL often begins with a 4 kHz dip in hearing, repeated exposure above 85 dB causes cumulative auditory stress leading from temporary to permanent threshold shifts.
- **Urban Traffic Noise Characteristics** - Research in road tunnels recorded noise levels between 78.9 and 86.5 dB(A), with peak energy at 4 kHz; urban noise includes continuous exposure punctuated by horns and construction sounds.
- **Systemic Health Effects** - Chronic noise activates the hypothalamic-pituitary-adrenal axis, elevating cortisol, blood pressure and cardiovascular strain, while night-time exposure disrupts REM and deep sleep, impairing cognition and metabolic health.
- **Legal and Monitoring Framework** - Noise is recognised as a pollutant under the Noise Pollution (Regulation and Control) Rules, 2000, but monitoring is episodic and rarely linked to health outcomes; India's National Ambient Noise Monitoring Network does not capture cumulative exposure.
- **Cumulative Noise Exposure Concept** - A 2024 study in Nature Scientific Reports led by Markandeya of Indian Institute of Technology (BHU) Varanasi showed a dose-response relationship between long-term traffic noise and hearing threshold shifts, emphasising cumulative noise exposure (CNE) over snapshot metrics like Leq and Ldn.
- **Limitations of Current Metrics** - Metrics such as Leq and Ldn (measured in dB(A)) fail to account for impulsive peaks like honking, underestimating actual auditory burden in urban settings.
- **High-Risk Groups and Underdiagnosis** - Traffic police, drivers and roadside vendors are particularly vulnerable; experts from Sanjay Gandhi Post Graduate Institute of Medical Sciences note early NIHL appears as a 4 kHz dip detectable via audiometry and DPOAE, yet remains underdiagnosed.
- **Field Evidence of Hearing Risk** - A 2023 screening of 231 traffic personnel in Ahmedabad found over half had hearing thresholds above 40 dB, indicating substantial occupational risk though systematic nationwide data are lacking.

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- **Policy Gaps and Urban Planning Issues** - Honking regulations are poorly enforced, quiet zones are ineffective, and urban planning underestimates hearing burden; experts suggest low-noise emission zones near hospitals, schools and residential areas.
- **Way Forward** - Integrating environmental noise metrics with routine hearing assessments and implementing preventive urban planning measures are essential to address NIHL, shifting from awareness to actionable public health mechanisms.

Quick Bites:

- After nearly six years of quiet, Echinus Geyser in Yellowstone National Park, USA has erupted again, sending powerful blasts of steaming water up to 30 feet into the air. Known as the world's largest acidic geyser, its renewed activity has drawn attention from scientists and visitors.
- A 16th-century bronze statue of Saint Tirumankai Alvar, originally from a temple in Tamil Nadu, is set to be returned to India by the Ashmolean Museum at the University of Oxford.

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06-03-2026

PRELIMS ARTICLES:

1. Raisina Dialogue 2026:

Context: Prime Minister attends Raisina Dialogue 2026.

About Raisina Dialogue:

- It is a conference on geopolitics and geoeconomics.
- It is committed to addressing the most challenging issues facing the global community.
- It is held annually since 2016 in New Delhi.
- The Dialogue is structured as a multi-stakeholder.
- It is organized by the Observer Research Foundation (ORF), an independent, nonpartisan think tank in partnership with the Ministry of External Affairs, Government of India.

Raisina Dialogue 2026:

- The 11th edition of the Raisina Dialogue will be held from 5-7 March, 2026.
- The 11th Raisina Dialogue will witness participation of representatives from 110 countries.
- The theme of the 2026 edition is "Saṁskāra - Assertion, Accommodation, Advancement".

2. Census-2027 developments:

Context: Union Home Minister and Minister of Cooperation Shri Amit Shah soft-launched four digital tools and formally unveiled the mascots - "Pragati" (female) and "Vikas" (male) for Census-2027.

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More details:

- The Centre for Development of Advanced Computing (C-DAC) has developed advanced digital platforms to facilitate enumeration operations across the country.
- The mascots "Pragati" (female enumerator) and "Vikas" (male enumerator) were unveiled to serve as friendly, relatable faces of the Census-2027. These mascots also symbolize the equal participation of women and men in fulfilling the resolve to make India a developed nation by 2047.
- Census 2027 will be India's first Census conducted using digital tools. The four digital platforms soft launched are:

Digital Platform	Purpose/ Key Features
Houselisting Block Creator (HLBC) Web Application	A web-map application that enables Charge Officers to digitally create houselisting blocks using satellite imagery, ensuring standardized geographic coverage across the country.
HLO Mobile Application	A secure offline mobile app used by enumerators to collect and upload houselisting data. Accessible only to enumerators registered on the CMMS Portal. Enables direct field-to-server data transmission, removes paperwork, works with registered mobile numbers, supports Android and iOS, and operates in 16 regional languages.
Self-Enumeration (SE) Portal	A web-based platform allowing eligible household members to submit their household information online before field enumeration. After submission, a unique Self-Enumeration ID (SE ID) is generated, which the enumerator uses to verify the information.
Census Management and Monitoring System (CMMS) Portal	A centralized web-based platform used to plan, manage, execute, and monitor census activities across administrative levels. Provides real-time dashboards for officers at sub-district, district, and state levels to track progress and operational readiness.

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3. National Waterway 2:

Context: India's First Riverine Lighthouses to Come Up on Brahmaputra (NW-2).

More details:

- Four river lighthouses along the banks of the Brahmaputra River were launched, marking the first time lighthouse infrastructure was established on an inland waterway in the country.
- The four sites - Bogibeel, Pandu, Silghat and Biswanath Ghat are located at strategic points along Brahmaputra (National Waterway-2).

About National waterway 2:

- **National Waterway-2 (NW-2):** An 891 km stretch of the Brahmaputra River in Assam from Sadiya to Dhubri near the Bangladesh border.
- **Declaration:** It was declared a national waterway on 1 September 1988.
- **Length:** The total navigable length of NW-2 is 891 km.
- **Location:** The waterway runs entirely along the Brahmaputra River in Assam.
- **Economic Importance:** It serves as a cost-effective and eco-friendly transport corridor for Northeast India.
- **Freight Movement:** Used for transporting goods such as tea, coal, petroleum products, and other cargo.
- **Passenger Transport:** Facilitates inland passenger transport within the region.
- **Regional Connectivity:** Known as the "Lifeline of Northeast India" for improving trade and connectivity.
- **International Link:** Connects with trade routes through the Indo-Bangladesh Protocol route.
- **Major Terminals:** Important terminals include Pandu, Dhubri, Jogighopa, Tezpur, and Sadiya. Implementing Authority: Developed and maintained by the Inland Waterways Authority of India (IWAI).

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MAINS SPECIFIC ARTICLES:

1. Transforming representation into real change by 2029:

Context: The Hindu Editorial Analysis

More details:

- **Background:** The Women's Reservation Act will reserve one-third of seats in the Lok Sabha from the 2029 general elections, marking the largest expansion of women's political representation in India.
- **Need for Immediate Action:** Increased representation alone is insufficient; women's issues must be identified and made political priorities before 2029 for effective policy influence.
- **Lack of Elder Care Policy:** India currently lacks a comprehensive elder-care policy framework that specifically recognises the needs of ageing women.
- **Reality of Care Burden:** Many women manage elder care for ageing parents while balancing employment and family responsibilities, highlighting the absence of state-supported care systems.
- **Rapid Ageing in India:** India already has over 100 million people above 60 years of age, and this number is projected to exceed 250 million by 2040.
- **Gender Disadvantages in Ageing:** Women generally live four to five years longer than men but often face lower savings, interrupted careers, lack of asset ownership, and limited caregiving support.
- **Limitations of Existing Policies:** Existing initiatives such as the National Policy for Older Persons and the Indira Gandhi National Old Age Pension Scheme focus mainly on poverty and health, without addressing gender-specific ageing issues.
- **Rising Dementia Burden:** A 2023 study published in Alzheimer's & Dementia estimates that about 8.8 million Indians above 60 live with dementia, and the number may nearly double by 2036, with women more vulnerable.

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- **Limited Political Attention:** Parliamentary discussions rarely focus on ageing women, with very few parliamentary questions, private member bills, or committee debates addressing the issue.
- **Example of State Initiative:** Maharashtra launched menopause clinics across 580 government facilities in 2026, and over 31,000 women accessed services within five weeks, showing the impact of targeted policy intervention.
- **Need for Prepared Leadership:** Political parties preparing candidates for reserved seats must ensure leaders understand issues affecting women across their entire life cycle, including old age.
- **Policy and Data Requirements:** Effective policymaking requires age- and gender-disaggregated census data, transparent budgeting for elder care, and clear commitments in political manifestos.
- **Significance for 2029 Elections:** The success of the 2029 Parliament in advancing women's welfare will depend on integrating elder care and dignified ageing into political agendas before the elections.

2. India, China top Asia-Pacific region in metabolic diseases burden: study: (GS paper 2)

Context: A recent analysis based on the Global Burden of Disease Study shows that India and China have among the highest absolute metabolic disease burdens in the Asia-Pacific region, with projections up to 2030.

More details:

- **Publication Details:** The findings were published in the peer-reviewed journal Metabolism by researchers led by Huang Zhang, analysing disease burden trends across the Asia-Pacific region.
- **Diseases and Risk Factors Studied:** The research examined five major metabolic conditions and risk factors Type 2 diabetes mellitus, high systolic blood pressure, high body mass index (BMI), high LDL cholesterol, and metabolic dysfunction-associated steatotic liver disease (MASLD).

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- **Meaning of Metabolic Diseases:** Metabolic diseases occur when the body's normal process of breaking down, storing, or using energy from food is disrupted due to genetic, lifestyle, or environmental factors.
- **India and China's Burden:** Across most indicators of metabolic disease burden, India and China rank at the top in the Asia-Pacific region, indicating a major public health challenge.
- **India's Diabetes Burden (2023):** India recorded around 21 million Disability-Adjusted Life Years (DALYs) and about 5.8 lakh deaths due to Type 2 diabetes in 2023.
- **Impact of High Blood Pressure:** High systolic blood pressure in India caused approximately 3.8 crore DALYs and about 15.7 lakh deaths in 2023.
- **Other Rising Risk Factors:** High BMI, elevated LDL cholesterol, and metabolic dysfunction-associated steatotic liver disease are also increasing steadily in India.
- **Shift in Regional Rankings:** In terms of DALYS, India surpassed China in 2023 to become the country with the highest metabolic disease burden in the Asia-Pacific region, whereas China held the top position in 1990.
- **Continuing Competition with China:** For other risk factors such as high blood pressure, BMI, LDL cholesterol, and MASLD, India remains second after China, though the gap is narrowing.
- Need for Prevention Strategies: Experts emphasise the need for urgent integrated strategies to prevent metabolic diseases and reduce long-term health burdens.
- **Food Policy Measures:** Governments should promote healthier diets by regulating ultra-processed foods, introducing clear front-of-pack nutrition labelling, and reducing excess sugar, salt, and unhealthy fats in commonly consumed foods.
- **Urban and Lifestyle Changes:** Cities and communities should be redesigned to promote physical activity through safe walking spaces, cycling tracks, and exercise programs in schools and workplaces.

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Quick Bites:

- World Hearing day is celebrated on March 3rd led by the World Health Organization, the 2026 theme, "From communities to classrooms: hearing care for all children,"
- The Indian Navy launched search-and-rescue operations after a distress call from the Iranian vessel IRIS Dena was received by the Maritime Rescue Coordination Centre (MRCC), Colombo. The Indian Navy's sail training vessel, INS Tarangini, which was operating nearby, was diverted to assist the rescue efforts and reached the designated search area. INS Ikshak has sailed from Kochi to further augment the search mission and remains deployed in the area to look for missing personnel.
- Union Home and Cooperation Minister Shri Amit Shah dedicated IFFCO's Sulphuric Acid Plant (SAP-III) to the Nation in Odisha on 6 March. It is mainly used to manufacture fertilizers such as Phosphoric Acid and Ammonium Sulfate, which are essential for agriculture.
- Union Minister of Youth Affairs and Sports, Dr Mansukh Mandaviya unveils the logo of World's first franchise based "Cycling League of India"
- The Adani Group has been named an official partner for the World Engineering Day for Sustainable Development (WED) 2026. The international observance is recognised by UNESCO and delivered by the World Federation of Engineering Organizations (WFEO). This marks the first time an Indian organisation has been selected by WFEO as a partner for this global platform that celebrates the role of engineers in sustainable development.
- A major leak of hazardous oleum gas at a chemical manufacturing unit in Maharashtra's Palghar district triggered panic and prompted authorities to evacuate more than 2,600 people as a precautionary measure. Oleum, or fuming sulphuric acid, is a solution of sulphur trioxide dissolved in concentrated sulphuric acid.
- Chile has become the first country in the Americas to be officially verified by the World Health Organization (WHO) for eliminating leprosy as a public health problem.

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07-03-2026

PRELIMS ARTICLES:

1. Essential Commodities Act (ECA), 1955:

Context: Despite assuring Indians that the country has "comfortable" stocks of crude, diesel, petrol and LPG, the Centre on Wednesday invoked the Essential Commodities Act (ECA), 1955, directing domestic oil refiners to prioritise the production of liquefied petroleum gas (LPG).

More about:

❖ **Government Order to Boost LPG Production**

- The government directed all oil refining companies in India to maximise the use of propane and butane streams for LPG production.
- These streams must be made available to the three public sector oil marketing companies (OMCs).

❖ **Supply Restricted for Domestic Use**

- Public sector OMCs must ensure that the LPG produced is supplied only to domestic LPG consumers.
- The measure prioritises household cooking gas availability.

❖ **Restriction on Petrochemical Use**

- Refineries are prohibited from diverting propane or butane for manufacturing petrochemical products or downstream derivatives.
- They cannot utilise, crack, convert, or process these gases for other industrial purposes.

❖ **Composition and Production of LPG**

- Liquefied Petroleum Gas (LPG) is mainly a mixture of Propane and Butane, liquefied under pressure.

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- It may also contain trace quantities of higher hydrocarbons.

❖ **Source and Refining Process**

- Propane and butane are obtained from natural gas processing and crude oil refining.
- According to Prashant Vasisht of ICRA, refining processes can be adjusted to increase propane-butane output, boosting LPG production.

❖ **Government Priority**

- The government is prioritising LPG for household cooking rather than use in vehicles or commercial establishments.

❖ **India's LPG Import Dependence**

- Around 60% of India's LPG demand is met through imports.
- Major suppliers include Saudi Arabia and Qatar in the Persian Gulf.

❖ **Impact of Strait of Hormuz Disruption**

- LPG imports have been affected due to the closure of the Strait of Hormuz since March 1.

❖ **Domestic LPG Production**

- Public sector OMCs such as Indian Oil Corporation and Bharat Petroleum Corporation Limited together produce about 40% of India's LPG requirement domestically.

About Essential commodities Act 1955:

- The Essential Commodities Act, 1955 is a law enacted to ensure the availability of essential goods and prevent hoarding, black marketing, and price rise.
- It was enacted in 1955 when India faced severe food shortages and low foodgrain production.
- At that time, India depended on imports such as wheat supplied under the PL-480 Programme from the United States.
- The Act does not give a fixed definition of essential commodities.
- Under Section 2(A), an essential commodity means any item listed in the Schedule of the Act. The

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Central Government has the power to add or remove commodities from the Schedule in public interest.

- Such decisions are usually taken in consultation with State Governments.
- The Act allows governments to regulate production, supply, and distribution of essential goods.
- It also empowers authorities to impose stock limits to prevent hoarding and black marketing.
- The Act is mainly used as a policy tool to control inflation and ensure equitable distribution of essential commodities.

2. SWAYATT-Startups, Women and Youth Advantage through e-Transactions:

Context: Government e-Marketplace (GeM) celebrated the seven-year journey of its flagship initiative, SWAYATT - Startups, Women and Youth Advantage through e-Transactions reaffirming its commitment to making public procurement more inclusive for startups, women entrepreneurs and youth across India.

What is Government e-Marketplace (GeM)?

- It is an online platform for public procurement.
- It was launched in 2016 by the Ministry of Commerce and Industry (MoC&I).
- It was created with the objective to create an open and transparent procurement platform for government buyers to facilitate the online procurement of goods and services.
- The purchases through GeM by Government users have been authorised and made mandatory by the Ministry of Finance under the General Financial Rules, 2017.
- The platform is owned by GeM SPV (Special Purpose Vehicle) which is a 100% Government-owned, non-profit company under the MoC&I.

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About SWAYATT:

- SWAYATT (Startups, Women and Youth Advantage Through e-Transactions) was launched on 19 February 2019 to promote inclusive participation of startups, women entrepreneurs, youth, MSES, SHGs, and small sellers in government procurement through the Government e-Marketplace (GEM).
- The initiative aims to democratise public procurement by enabling direct access to government buyers through the GeM digital platform.
- It focuses on solving three major challenges for emerging enterprises: access to markets, access to finance, and access to value addition.
- It promotes social inclusion in government procurement by integrating small and last-mile sellers into the national procurement ecosystem.

3. Swachhata Pakhwada:

Context: Swachhata Pakhwada Cleanliness Campaign Observed by Department of Food and Public Distribution from 16-28 February 2026.

About Swachhata Pakhwada:

- Swachhata Pakhwada was launched in April 2016 under the Swachh Bharat Mission to promote cleanliness through focused activities by government ministries.
- It aims to create a fortnight of intensive focus on sanitation practices and awareness across central government ministries and departments.
- The initiative encourages all ministries and departments to participate through a common programme supporting the Swachh Bharat Mission.
- An annual calendar is circulated in advance to ministries to help them plan Swachhata Pakhwada activities.

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- Activities are monitored through the Swachhata Samiksha online monitoring system, where action plans, photos, and videos are uploaded.
- During the fortnight, participating ministries are designated as "Swachhata Ministries" and are expected to implement measurable sanitation improvements in their jurisdictions.

4. Ocean Thermal Energy Conversion (OTEC) project:

Context: Union Minister for Earth Sciences and Science & Technology Dr. Jitendra Singh on Friday reviewed the progress of an Ocean Thermal Energy Conversion (OTEC) in Lakshadweep, first of its kind in the world.

About Ocean Thermal Energy Conversion (OTEC) project:

- The OTEC project aims to strengthen freshwater availability and renewable energy use in island territories.
- OTEC technology uses the temperature difference between warm surface seawater and cold deep-sea water to generate energy.
- The energy generated is used to run desalination systems that convert seawater into potable drinking water.
- The project aims to solve freshwater shortages in Lakshadweep caused by limited groundwater, salinity intrusion, and dependence on seasonal rainfall.
- The system includes seawater intake systems, deep-sea cold-water pipelines, turbine-generator units, and desalination modules.
- OTEC can generate continuous renewable energy, unlike solar or wind power which depend on weather conditions.
- Globally, only a few countries such as Japan and United States have developed OTEC facilities, and India aims to join this group with the Kavaratti plant.

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5. Khelo India Tribal Games:

Context: The inaugural edition of the Khelo India Tribal Games will be held between March 25 and April 6 in three cities in Chhattisgarh Raipur, Jagdalpur and Sarguja.

More details:



- The Games will feature seven medal sports - athletics, football, hockey, weightlifting, archery, swimming and wrestling.
- There will be two demonstration sports - mallakhamb and kabaddi.
- The KITG 2026 will be jointly managed by the Ministry of Youth Affairs & Sports, Sports Authority of India (SAI), Indian Olympic Association, National Sports Federations and the Chhattisgarh state organising committee, with technical standards benchmarked against international competitions.
- The official mascot 'Morveer', is a name deeply rooted in Chhattisgarh's cultural ethos. Derived from two powerful words 'Mor', meaning mine or our own in Chhattisgarhi, and 'Veer', symbolising courage and valour.
- The Khelo India Tribal Games are part of the Khelo India Scheme, a flagship Central Sector Scheme of the Ministry of Youth Affairs & Sports, Government of India, aimed at promoting mass participation and sporting excellence.

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About Khelo India Games:

- Khelo India is a scheme envisioned by Prime Minister Modi in 2017-18 to give a platform to grassroots athletes and build sports infrastructure across India.
- The Khelo India Scheme is the flagship Central Sector Scheme of the Ministry of Youth Affairs & Sports.
- Twin objectives: Mass participation and promotion of excellence in sports
- Khelo India University Games is a national level multi-sport event held in India, where athletes from universities across the country compete in different sports disciplines.
- The inaugural edition held in Odisha started on 22 February and concluded on 1 March 2020.

Khelo India Youth Games:

- The Khelo India Youth Games is an annual multidisciplinary grassroot sporting event held at the national level in India
- It is conducted for 2 groups of students -
  - Students under 17 years of age in secondary school
  - Students under 21 years of age in college
- It was started in 2018 by Prime Minister Narendra Modi in the name of Khelo India School Games.
- In 2019, its name was changed to Khelo India Youth Games.

MAINS SPECIFIC ARTICLES:

1. Regulating internet exclusive domain of Centre:

Context: Karnataka and Andhra Pradesh announced a ban on social media use by children under 16 and below 13 respectively.

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More about:

❖ **Union Government's Jurisdiction over Internet Regulation**

- Regulation of the internet is largely the exclusive domain of the Union government in India.
- The country's digital governance framework is mainly based on central laws such as the Information Technology Act, 2000 and the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.

❖ **Expert View on State-Level Regulation**

- According to Garima Saxena, analyst at The Dialogue, India's digital and intermediary regulations are structured through central legislation.
- Any direct regulation by States on digital intermediaries could raise constitutional and legal concerns.

❖ **Centre Considering Age-Based Restrictions**

- Union IT Minister Ashwini Vaishnaw stated that the government is discussing age-based restrictions on social media use.
- However, no implementation framework has been announced yet.

❖ **Centre Observing State-Level Developments**

- A senior official indicated that the Union government may first observe how a State-level ban works before deciding its response.

❖ **Possible Constitutional Issues**

- States may attempt to justify regulation citing public order, public health, or child welfare.
- However, once such measures directly affect digital intermediaries or online services, they may face issues of constitutional validity, overlap with central laws, and enforcement challenges.

❖ **Global Example - Australia's Ban**

- Australia became the first country to ban social media for children in December.

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- The policy remains controversial, as sufficient empirical evidence on its effectiveness is still limited.

❖ **Concerns Raised by Digital Rights Groups**

- The Internet Freedom Foundation criticised blanket bans on social media.
- It argued such bans are disproportionate and may cause more harm than good.

❖ **Issues Highlighted by Internet Freedom Foundation**

- Blanket bans fail to address platform design that maximises engagement over safety.
- Weak data protection frameworks and poor digital literacy infrastructure remain unaddressed.
- Restrictions could limit children's rights to information, expression, and participation.

❖ **Response from Social Media Companies**

- Meta Platforms stated it would comply with bans where legally enforced.
- However, it argued that child safety measures should apply to all apps, not just social media platforms.

2. 204 of 238 Indian cities did not meet air quality standards, says CREA:

Context: During the last winter, 204 out of 238 Indian cities recorded average PM2.5 (a chief pollutant) levels above the Indian standard of 40 g/m3, as per the Central Pollution Control Board (CPCB) data analysed by the Centre for Research on Energy and Clean Air (CREA).

More details:

- Ghaziabad was the most polluted city with an average PM2.5 concentration of 172 $\mu g/m^3$ during winter 2025-26.
- It was followed by Noida (166 $\mu g/m^3$) and Delhi (163 $\mu g/m^3$).
- The analysis was conducted by Centre for Research on Energy and Clean Air (CREA), a Finland-based research group.

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- Greater Noida, Bahadurgarh, Dharuhera, Gurugram, Bhiwadi, Charkhi Dadri, and Baghpat were also among the ten most polluted cities.
- Uttar Pradesh and Haryana had four cities each among the top ten most polluted cities.
- One city each from Delhi and Rajasthan was also included in the top ten.
- The study used data from Continuous Ambient Air Quality Monitoring Stations of the Central Pollution Control Board (CPCB) from October 1, 2025 to February 28, 2026.
- None of the analysed cities met the World Health Organization PM2.5 guideline of 5 $\mu g/m^3$.
- Kolkata (78 $\mu g/m^3$), Mumbai (48 $u\mu g/m^3$), and Chennai (44 $\mu g/m^3$) also recorded PM2.5 levels above the national standard.
- Bengaluru recorded 39 $\mu g/m^3$, slightly below the National Ambient Air Quality Standards (NAAQS) limit.
- Chamarajanagar in Karnataka was recorded as the cleanest city in India during winter 2025-26.
- Centre for Research on Energy and Clean Air (CREA) is a non-profit think tank founded in 2019 in Helsinki that conducts data-driven research on energy use and air pollution and tracks their environmental and health impacts.

Quick Bites:

- Indonesia to restrict social media access for under-16s. It would ban social media access for children under 16, citing threats from online pornography, cyberbullying, online fraud and internet addiction.
- Under Swachh Bharat Mission-Urban 2.0, Thiruvananthapuram Municipal Corporation has deployed an Al-powered G-SPIDER robot for safe, precise, and human-free canal cleaning in high-risk areas.
- MPLADS eSAKSHI web portal was introduced with effect from 1 April 2023 to manage the revised fund-flow procedure under the Members of Parliament Local Area Development Scheme (MPLADS). With the launch of the eSAKSHI portal, the annual entitlement of Hon'ble Members

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of Parliament (MPs) is made available through online authorisations at the beginning of each financial year or tenure. Revamped public dashboard of MPLADS eSAKSHI portal is available now.

- Korea district in Chhattisgarh has emerged as a notable example of community-led water conservation through the Jal Sanchay Jan Bhagidari' initiative. The programme encourages farmers to voluntarily allocate a small portion of their land for groundwater recharge and sustainable water management.
- The Indian Institute of Science (IISc), Bengaluru launched a "moonshot" project to develop brain co-processors combining neuromorphic hardware and AI algorithms to decode brain signals and send corrective responses to restore or enhance brain function. The project is supported by the Pratiksha Trust, founded by Kris Gopalakrishnan, and aims to aid cognitive rehabilitation, particularly for stroke survivors with motor impairments.
- Skyroot Aerospace, a Hyderabad-based startup, is preparing to launch Vikram-1, India's first privately developed orbital rocket. The rocket, about 75 feet tall with a seven-storey structure, is part of the Vikram series named after Vikram Sarabhai, the father of India's space programme, and is designed to carry satellites up to 300 kg into Low Earth Orbit. Earlier, Skyroot successfully launched Vikram-S, India's first private sub-orbital rocket, in November 2022.
- India's foreign exchange reserves rose to a new all-time high of $728.49 billion during the week ended February 27, according to data released by the Reserve Bank of India (RBI).

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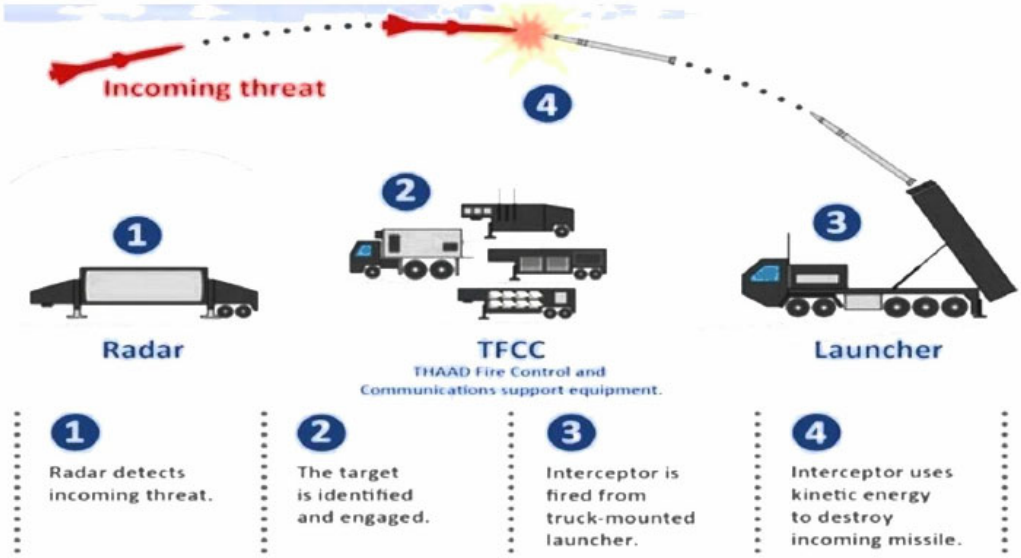
08-03-2026

PRELIMS ARTICLES:

1. Terminal High Altitude Area Defence (THAAD) system:

Context: The Terminal High Altitude Area Defence (THAAD) system is one of the most advanced missile defence platforms developed by the United States to counter ballistic missile threats.

About Terminal High Altitude Area Defence (THAAD) system:



- **About THAAD System**
  - Terminal High Altitude Area Defense (THAAD) is a missile defence system designed to intercept and destroy short-, medium-, and limited intermediate-range ballistic missiles during the final stage of their flight.

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- It can destroy incoming missiles both inside and outside the Earth's atmosphere, providing a high-altitude defensive shield.

- **Hit-to-Kill Technology**
  - THAAD uses hit-to-kill technology, where interceptor missiles destroy targets through direct collision at very high speed using kinetic energy rather than explosive warheads. This method improves precision and reduces the risk of debris affecting populated areas.
- **Operational Range and Interception**
  - The system can intercept ballistic missiles at ranges of about 150-200 km and at high altitudes before they descend toward their targets.
- **Key Components of THAAD**
  - Interceptors that destroy incoming missiles through kinetic impact. Truck-mounted launchers used to deploy interceptor missiles.
  - AN/TPY-2 radar for long-range detection and tracking of missile threats.
  - Tactical fire control and communications unit for coordination of targeting and engagement. Additional logistics and support equipment.
- **Structure of a THAAD Battery**
  - A typical battery consists of about 90 personnel, six launchers, and 48 interceptors, with each launcher carrying eight missiles.
- **Integration with Other Missile Defence Systems**
  - THAAD operates as part of a layered missile defence network.
  - It can integrate with systems such as MIM-104 Patriot (including PAC-3) and the Aegis Ballistic Missile Defence system used by naval forces.
  - Recent tests showed THAAD can launch PAC-3 MSE interceptors, indicating improved interoperability.

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- **Mobility and Deployment**
  - The system is highly mobile and rapidly deployable, allowing quick positioning in regions facing missile threats.
  - The first operational THAAD battery was deployed in Guam in 2013.
- **International Users**
  - The United Arab Emirates became the first foreign buyer in 2011, followed later by Saudi Arabia.
- **Recent Conflict Developments**
  - Reports suggest that Iran destroyed an AN/TPY-2 radar linked to the THAAD system at Muwaffaq Salti Air Base in Jordan during the recent conflict.
  - The radar, worth about $300 million and produced by RTX Corporation, is crucial for detecting and guiding missile interception in the Persian Gulf region.
- **Strategic Importance**
  - Despite setbacks, THAAD remains a key component of the U.S. multi-layered ballistic missile defence strategy.
  - It is designed to intercept fast-moving ballistic missiles far from population centres and critical infrastructure, increasing the chances of neutralising threats before impact.

2. India's earthquake zoning:

Context: Less than four months after issuing a revision to India's earthquake zoning framework, the Centre has withdrawn its own notification following a major backlash from several government departments, Metro Rail corporations and infrastructure authorities that apprehended a surge in construction costs of marquee projects nationwide.

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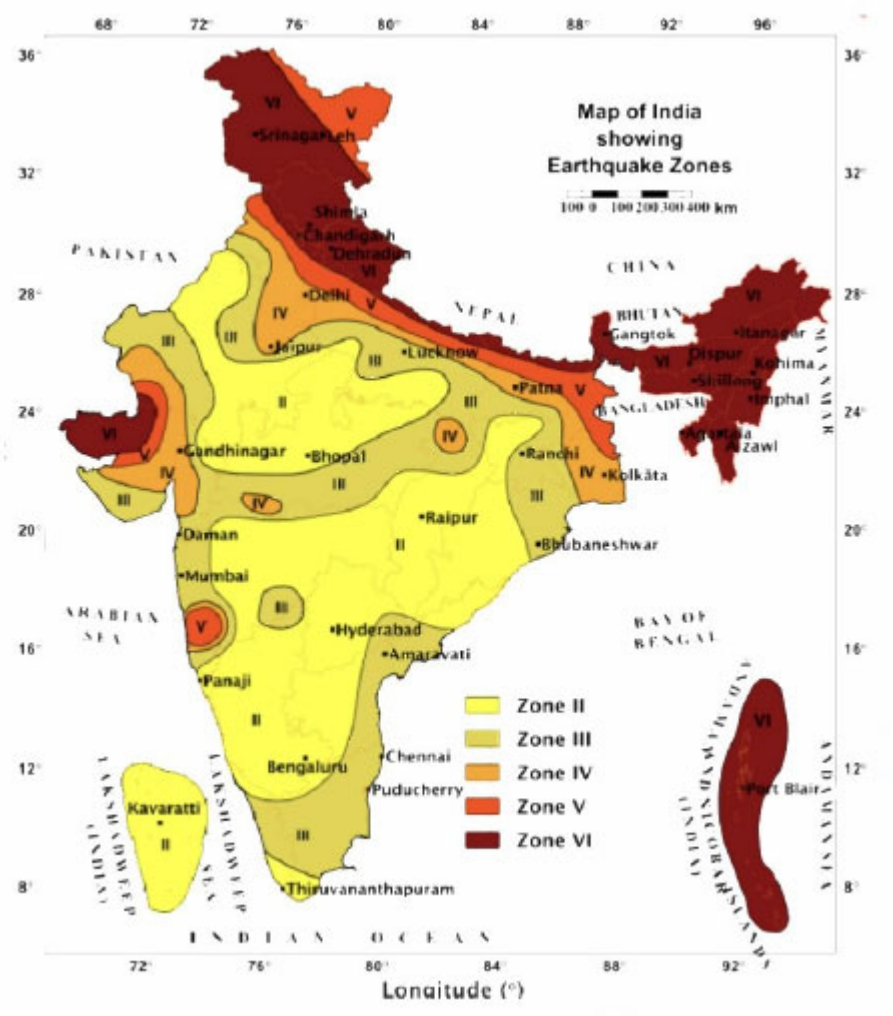
- **What is New Earthquake zoning presented in November 2025?**

  The Bureau of Indian Standards (BIS) had issued a Gazette notification on November 6, 2025, introducing revised earthquake hazard zoning under the updated IS 1893 (Part 1): 2025 code, which governs the earthquake-resistant design of structures. The revised standard was meant to replace the existing IS 1893 (Part 1): 2016 framework that currently guides structural design norms across the country.



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- **Number of Zones:** India earlier had four earthquake zones - II, III, IV and V — based on seismic risk classification.
- **New Zone VI:** A new highest-risk Zone VI has been introduced, placing the entire Himalayan arc under one category instead of splitting it between Zones IV and V.
- **Boundary towns rule:** Towns located on the boundary between two seismic zones will now automatically be classified in the higher-risk zone.
- **Hazard mapping approach:** The revised mapping prioritises geological conditions and fault lines rather than administrative boundaries.
- **Land vulnerability:** Around 61% of India's land area now falls in moderate to high earthquake hazard zones (earlier about 59%).
- **Population exposure:** Nearly 75% of India's population now lives in seismically active regions. Retrofitting push: The new map encourages strengthening and retrofitting of existing buildings in high-risk zones.
- **Urban planning impact:** It discourages expansion in areas with soft sediments or near active fault lines.
- **Building regulations:** The changes push for stricter and more uniform earthquake-resistant building standards, especially in Himalayan states.

What happened now?

- The revised notification has now been withdrawn through a fresh Gazette notification issued on March 3, 2026, restoring the earlier code with immediate effect.

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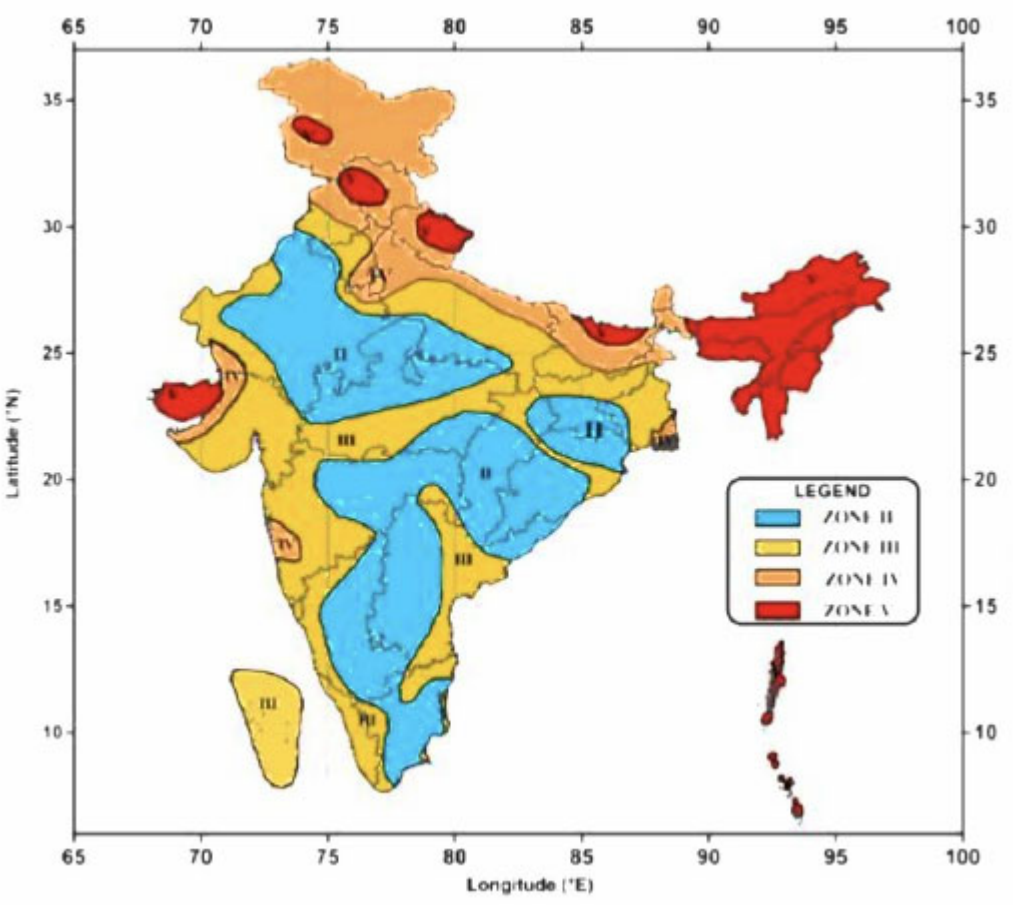
Earlier Zonation:



3. Santal Hul in 1855:

Context: The President mentioned Santal Hul in her speech during the 9th International Santal Conference at Darjeeling, West Bengal. The president said nearly 60 years after his revolt, the brave brothers Sido-Kanhu and Chand-Bhairav, along with the brave sisters Phoolo-Jhano, led the Santal Hul in 1855. About Santha Hul 1855:

- **Meaning:** The Santhal Hul of 1855 was a major tribal uprising against British rule and exploitative intermediaries in eastern India.

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- **Leadership:** The revolt was led by Sidho, Kanho, Chand and Bhairav Murmu along with their sisters Phulo and Jhano.
- **Beginning:** The uprising began on 30 June 1855 in the Santhal region of present-day Jharkhand. Targets: The Santhals revolted against the British administration, zamindars, moneylenders and officials collectively called 'dikus'.
- **Objective:** The movement aimed to protect the economic, cultural and religious rights of the Santhal community.

  Background region: In 1832 the British created the Damin-i-Koh region (Santhal Pargana) for the settlement of displaced Santhals.
- **Reality of settlement:** Instead of promised agricultural security, Santhals faced land alienation, heavy taxation and exploitation.
- **Bonded labour systems:** Two exploitative labour systems developed - kamioti (working for the lender until debt repayment) and harwahi (personal and agricultural services to the lender).
- **Nature of revolt:** About 60,000 Santhals under the Murmu brothers carried out guerrilla warfare against the East India Company.
- **Suppression:** The British crushed the revolt by January 1856 after about six months of fighting. Casualties and damage: Over 15,000 Santhals were killed and more than 10,000 villages were destroyed.

  Historical significance: The Santhal Hul is one of the earliest organised tribal resistances against colonial rule.
- **Legal impact:** The uprising eventually led to protective land laws such as the Santhal Pargana Tenancy Act, 1876 and the Chotanagpur Tenancy Act, 1908.

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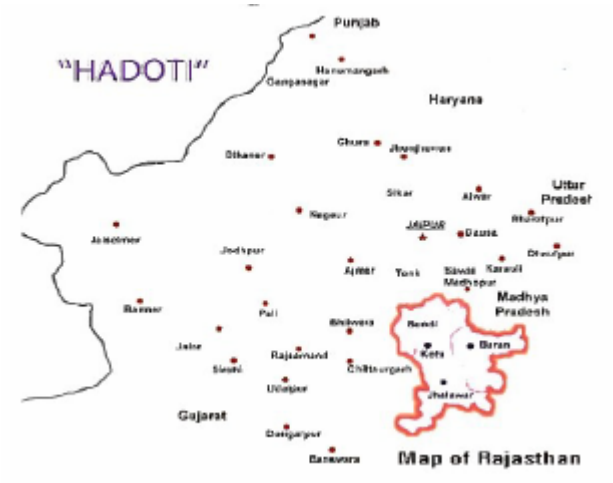
4. Hadoti region:

Context: Prime Minister Shri Narendra Modi addressed the foundation stone-laying ceremony of the Kota Airport via video message, marking a significant milestone for the Hadoti region. About Hadoti region:



- **Hadoti region:** The south-eastern region of Rajasthan is known as the Hadoti region. Geographical location: It lies between the Malwa Plateau in the east, the Aravalli Range in the west, and the Marwar Plateau in the southwest.
- **State boundary:** The region shares its boundary with the state of Madhya Pradesh.
- **Major river:** The Chambal River is the principal river flowing through the Hadoti region. Important tributaries: Major tributaries in the region include the Kalisindh, Parvati, Parwan, and Chapi rivers.
- **Soil type:** Alluvial soil is the dominant soil type found in the region. Agricultural significance: The fertile alluvial soil supports extensive agricultural activities in Hadoti.

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5. Chips to Start-up (C2S) Programme:

Context: Government of India's initiative for prioritizing talent development through Training, Up-skilling and Workforce Development Programs under Chips to Startups (C2S) initiative of India Semiconductor Mission (ISM), India has made significant progress in last 04 years itself for its 10-year target of training 85,000 engineers in semiconductor design.

About Chips to Start-up (C2S) Programme:

- **Programme launch:** The Chips to Start-up (C2S) Programme was launched in 2022 by the Ministry of Electronics and Information Technology.
- **Nature of programme:** It is an umbrella capacity-building initiative aimed at strengthening India's semiconductor design ecosystem.
- **Financial outlay:** The programme has a total budget of ₹250 crore for a period of five years. ❖ Institutional coverage: It involves participation from academic institutions across India.
- **Human resource target:** The programme aims to develop about 85,000 industry-ready professionals at undergraduate, postgraduate and doctoral levels.
- **Student training:** It seeks to train around one lakh students in semiconductor design and related technologies.
- **Startup promotion:** The initiative aims to incubate around 25 semiconductor start-ups.
- **Technology transfer:** It plans to facilitate at least 10 technology transfers from academia to industry.
- **Research output:** The programme targets the creation of about 50 patents and at least 2,000 research publications.
- **Innovation impact:** It aims to boost innovation, improve employability and strengthen academic participation in India's semiconductor value chain.

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- **Implementation ecosystem:** The programme is implemented through collaboration between academic institutions, the Centre for Development of Advanced Computing ChipIN Centre in Bengaluru and National Institute of Electronics and Information Technology SMART Labs.
- **Training approach:** It combines academic learning with industry training, mentorship and long-term research and development projects.
- **Technical exposure:** Students gain practical experience in chip design, fabrication and testing using advanced electronic design automation tools.
- **Design areas:** The programme supports work on ASICS, system-on-chip designs and IP core development.
- **Fabrication process:** Student chip designs are aggregated quarterly, verified and fabricated using 180 nm technology at the Semi-Conductor Laboratory in Mohali.
- **Chip delivery:** After fabrication, chips are packaged and delivered back to students for testing and learning.
- **Technical support:** The ChipIN Centre provides centralized support to institutions and has resolved thousands of technical queries to improve design outcomes.

6. National Health Claims Exchange (NHCX):

Context: The National Health Authority (NHA) has successfully conducted the NHCX Hackathon organised under the Ayushman Bharat Digital Mission (ABDM) to promote innovation around the National Health Claims Exchange (NHCX).

More details:

- The winning teams presented their solutions at the NHCX Innovation Meet held on 6-7 March 2026 at IIT Hyderabad, where their solutions were showcased and recognized.
- The hackathon was organised in collaboration with ecosystem partners, including Insurance Regulatory and Development Authority of India (IRDAI), IIT Hyderabad, National Resource Centre for EHR Standards (NRCeS), General Insurance Council (GIC), Google, Insurance

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Information Bureau (IIB), National Accreditation Board for Hospitals and Healthcare Providers (NABH), India Insurtech Association (IIA) and NATHealth.

- The National Health Claims Exchange (NHCX) is one of the three gateways under ABDM, built to simplify and standardise health insurance claims processing across the country.
- It provides a unified digital infrastructure for seamless exchange of claims data among hospitals, insurance companies, and patients.
- The hackathon invited participants to develop solutions addressing key operational challenges in health insurance claims processing and ecosystem interoperability.

MAINS SPECIFIC ARTICLES:

1. Why does the Strait of Hormuz's closure matter? (GS paper 2)

Context: The Strait of Hormuz, one of the world's most strategically important chokepoints, has been experiencing a near-total collapse in commercial traffic following rising tensions in West Asia. More than 20% of the world's total oil and gas shipments, and nearly 40% of India's, pass through the strait.

Strategic Importance of the Strait of Hormuz

- The Strait of Hormuz is one of the world's most critical maritime chokepoints for global energy trade.
- Over 20% of global oil and gas shipments and nearly 40% of India's energy imports pass through the strait.
- It is located between Iran, Oman, and United Arab Emirates and is about 33 km wide at its narrowest point.
- The route is vital for energy exports from Saudi Arabia, Qatar, Kuwait, Iraq, and Iran to global markets.

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Major Global Maritime Chokepoints

- The Strait of Malacca near Singapore is crucial for Chinese maritime trade.
- The Bab-el-Mandeb Strait connects the Red Sea with the Gulf of Aden and has recently come under the influence of Houthi movement.
- The Suez Canal connects Europe with Asia and Africa, while the Panama Canal links the Pacific and Atlantic Oceans.
- The Bosphorus Strait and Dardanelles Strait connect the Mediterranean Sea and the Black Sea through the Sea of Marmara.

Control and Sovereignty Over Chokepoints

- Egypt and Panama hold sovereignty over the Suez and Panama canals respectively.
- Turkey has exclusive sovereign rights over the Bosphorus and Dardanelles straits.
- Countries like Malaysia, Singapore, Iran, and Oman help secure natural straits such as Malacca and Hormuz but do not exercise exclusive sovereignty over them.
- India has strengthened naval presence in the Andaman and Nicobar Islands to gain strategic leverage over traffic through the Malacca Strait.

Current Situation in the Strait

- Since February 28, following attacks by the United States and Israel on Iran and Iran's retaliation, shipping traffic through the strait has reduced by about 95%.
- At least nine ships have faced attacks in or near the strait.
- Around 600 ships are stranded in the region, according to Lloyd's List Intelligence.
- These include about 250 bulk carriers, 200 oil tankers, and 50 gas carriers.

Legal Status of Shipping Routes

- Under international law, the seas are generally treated as global commons.

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- Merchant ships and naval vessels have the right of "innocent passage" through international waters.
- No country can unilaterally close natural straits such as Hormuz or Malacca.
- However, security threats and attacks can discourage shipping companies from using the route.

Impact on Shipping and Insurance

- Insurance premiums for ships transiting the strait have increased 10-15 times due to security risks.
- The cost of insuring a ship for one week of transit can now equal the normal annual insurance premium.

Possible Alternative Routes

- Saudi Arabia can transport oil to Yanbu on the Red Sea through pipelines.
- However, shipping through the Red Sea has also declined due to attacks by the Houthi movement since 2023-24.
- Ship transits through the Bab-el-Mandeb Strait dropped sharply from about 2,300 in October 2023 to less than half by January.

Iran's Strategic Leverage

- Iran has historically used the strait as geopolitical leverage, including during the Iran-Iraq War in the 1980s.
- Iran hopes that restricting traffic will increase global pressure on the United States and Israel to end the conflict.
- Currently, about one in five ships passing through the strait are Iranian.

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Historical Response by the U.S. and India

- During the Iran-Iraq War, the United States allowed merchant ships to fly the U.S. flag to justify naval escort operations.
- Shipping Corporation of India adopted a strategy of marking ships clearly with "INDIA" to highlight neutrality and avoid attacks.

Impact on India's Energy Security

- Nearly 40% of India's oil imports pass through the Strait of Hormuz.
- Qatar supplies about half of India's LNG imports, which account for half of India's natural gas consumption.
- LNG is used for city gas distribution, power generation, and industrial uses.

Impact on Fertilizer Production

- About 30% of India's natural gas is used in fertilizer production.
- Disruptions could affect fertilizer supply when ammonia demand rises later in the year.

LPG Supply Concerns

- Around 60% of India's LPG imports originate upstream of the strait.
- LPG shortages are a concern since it is the primary cooking fuel in India.

Government Measures and Alternatives

- The government is encouraging increased domestic production of propane and butane through refinery adjustments.
- India is exploring alternative LNG sources from United States, Russia, and Australia.
- The U.S. has temporarily allowed India to continue purchasing Russian crude oil for 30 days.

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Impact on Oil Prices and Economy

- Brent crude oil prices remain below $90 per barrel, though disruptions could push prices higher.
- Urals crude from Russia is now sometimes costlier than Brent in India due to strong demand.
- Rising crude prices could lead to higher fuel prices in India, potentially triggering inflation and broader economic impacts.

2. How does Canada's uranium deal help India?:

Context: In its quest for energy security, on March 2, India signed a Canadian $2.6-billion deal with Cameco. The Canadian company is among the world's top three largest uranium producers by volume. The deal ensures a supply of around 10,000 tonnes of uranium between 2027 and 2035 to India.

India's uranium stocks

India has both domestic uranium reserves and imported stockpiles. Domestic reserves contain about 4.2-4.3 lakh tonnes of uranium ore located mainly at Jaduguda and Turamdih in Jharkhand and Tummalapalle in Andhra Pradesh. However, because the ore is low grade (0.02-0.45% uranium concentration), the extractable uranium metal is estimated at only 76,000-92,000 tonnes.

Low-grade domestic ore

Indian uranium ore has very low uranium concentration compared to global standards. In contrast, Canada has high-grade ore that is 10-100 times richer than Indian ore. This makes extraction in India more difficult and expensive.

Dependence on uranium imports

India currently meets nearly three-fourths of its civilian uranium requirement through imports. Besides the Cameco agreement, India has a supply agreement with Kazatomprom of Kazakhstan

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and contracts with Uzbekistan and Russia. The government is also building a strategic uranium reserve capable of supporting five years of reactor fuel demand.

Reason for domestic mining

Imported uranium ore cannot legally be used for nuclear weapons under international safeguards. Therefore, India continues domestic mining to ensure uranium availability for strategic purposes such as nuclear weapons and naval propulsion.

India-Canada Civil Nuclear Cooperation Agreement

The Cameco deal operates under the India-Canada Civil Nuclear Cooperation Agreement signed in 2010. This agreement followed the Nuclear Suppliers Group waiver granted to India in 2008, which allowed India to engage in global civil nuclear trade despite not signing the Nuclear Non-Proliferation Treaty. The waiver itself was enabled by the India-US Civil Nuclear Agreement (123 Agreement).

Safeguards and criticism

Under the agreement, India must provide "fissionable material accounts" to Canada. Critics argue that such reporting requirements affect India's sovereignty. However, others note that importing uranium for civilian reactors frees up domestic uranium for military uses.

Use of uranium in power generation

India operates 24 nuclear reactors with a total capacity of about 9 GW. Pressurised Heavy Water Reactors (PHWRs), especially the 700-MW units, generate around 6-7 GW and supply roughly 3% of India's electricity using uranium fuel. The government aims to increase nuclear power capacity to 100 GW by 2047.

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Use in research and medicine

Uranium is also used in research reactors such as Dhruva research reactor in Trombay. These reactors produce medical isotopes like technetium-99m and iodine-131, which are widely used in medical diagnostics and treatment, and support advanced materials research.

Small Modular Reactors initiative

In the 2025-26 Union Budget, Finance Minister Nirmala Sitharaman allocated ₹20,000 crore for the development of small modular reactors (SMRS). These reactors typically use uranium enriched to about 3-5%.

Strategic uses of uranium

Domestic uranium also supports India's nuclear weapons programme, estimated to include about 170 warheads, and powers nuclear submarines such as those of the INS Arihant class submarine.

India's three-stage nuclear programme

India's nuclear power strategy, designed by Homi J. Bhabha follows a three-stage approach.

- Stage 1 uses PHWRS fuelled by natural uranium to produce electricity and plutonium-239.
- Stage 2 employs fast breeder reactors using mixed oxide fuel (uranium-238 and plutonium-239) to generate more plutonium and uranium-233.
- Stage 3 will use advanced heavy water reactors powered by plutonium-239 and thorium-232 to produce uranium-233 and electricity.

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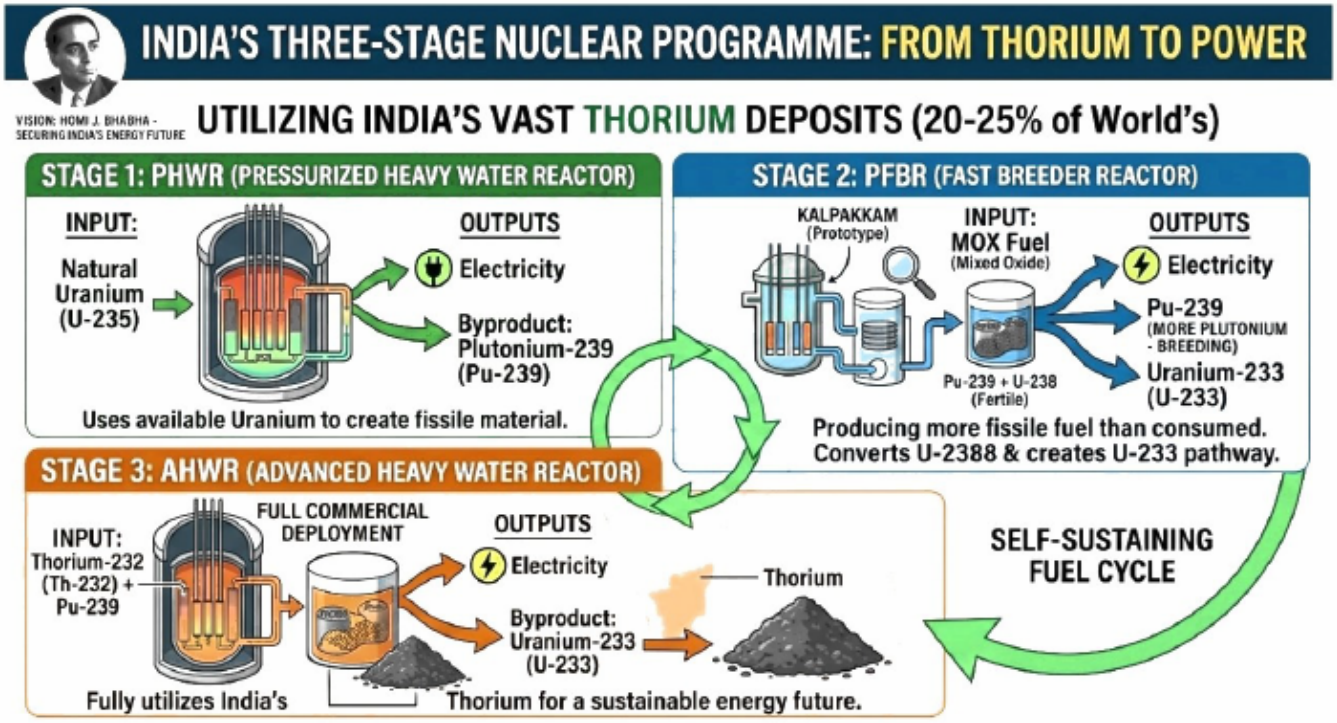

Fast breeder reactor development

The Prototype Fast Breeder Reactor at Kalpakkam Nuclear Complex is currently in an advanced stage of commissioning. Fast breeder reactors are designed to produce more nuclear fuel than they consume, supporting long-term energy sustainability.

Thorium advantage and delays

India holds about 20-25% of the world's thorium deposits, making the final stage of the programme strategically important. However, the programme has faced significant delays, cost overruns, and technological challenges, meaning large-scale thorium-based power generation may only become feasible around the 2060s or later.

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Quick Bites:

- The President of India Smt Droupadi Murmu graced the 9th International Santal Conference at Darjeeling, West Bengal.
- On the occasion of Jan Aushadhi Diwas 2026 on March 7th, the Prime Minister, Shri Narendra Modi extended his greetings to all those who have been positively impacted by the Pradhan Mantri Bhartiya Janaushadhi Pariyojana. The theme for the 8th Jan Aushadhi Diwas 2026 is "Janaushadhi Sasti Bhi, Bharosemand Bhi, Sehat Ki Baat, Bachat Ke Saath"
- The Department of Drinking Water and Sanitation (DDWS), Ministry of Jal Shakti, Government of India, will organise "Jal Mahotsav 2026", a nationwide campaign from 8 March (International Women's Day) to 22 March (World Water Day) to strengthen Jan Bhagidari and community ownership in rural drinking water service delivery under the Jal Jeevan Mission (JJM). Jal Mahotsav is envisioned as a nationwide movement connecting policy dialogue with village-level action, bringing together Gram Panchayats, Village Water and Sanitation Committees (VWSCs), Self-Help Groups, youth volunteers, development partners, academic institutions and communities to collectively advance the vision of Sujal Gram and sustainable rural drinking water governance.
- Minister of State for Women and Child Development, Smt. Savitri Thakur, will visit New York, United States of America, from 9 to 12 March 2026 to participate in the 70th Session of the Commission on the Status of Women (CSW-70) at the United Nations Headquarters.
- The Ministry of Women and Child Development (MWCD) is organising a women-led walk titled "Shakti Walk #SheLeads Bharat" (8 March 2026) along Kartavya Path in New Delhi as part of the celebrations of International Women's Day. International Women's Day 2026 (March 8) focuses on the theme "Give To Gain," a campaign encouraging a mindset of generosity, collaboration, and collective empowerment. The UN theme is "Rights. Justice. Action. For ALL Women and Girls". The date is linked to 1917, when women in Russia went on strike demanding "bread and peace." The protest began on 23 February in the Julian calendar, which corresponds to 8 March in the Gregorian calendar used internationally.

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- Indian roller skater Shrishti Dharmendra Sharma has created history by setting a new Guinness World Record in limbo skating. She achieved the fastest time to skate under descending poles over a distance of 50 metres, demonstrating exceptional flexibility, speed and balance.
- The High Court of Karnataka has directed the State government to include the remaining areas of the Kappatagudda reserve forest within the boundaries of the Kappatagudda Wildlife Sanctuary in Gadag district.
- The Maharashtra government has signed a memorandum of understanding (MoU) with three Finnish companies to modernise Sassoon Dock in Mumbai and transform it into a technologically advanced and environmentally sustainable fishing harbour.

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09-03-2026

PRELIMS ARTICLES

1. ASMITA initiative:

Context: Prime Minister shares an article on ASMITA initiative promoting women in sports.

About ASMITA initiative:

- The Ministry of Youth Affairs and Sports (MYAS), through the Khelo India initiative, is promoting the ASMITA (Achieving Sports Milestone by Inspiring Women Through Action) Leagues.
- Formerly known as the Khelo India Women's League, ASMITA represents the unyielding spirit, resilience, and power of Indian women athletes.
- To give a face and voice to this movement, the Sports Authority of India (SAI) in collaboration with MyGov invites citizens to participate in the ASMITA Khelo India Women League Contests.
- The Khelo India ASMITA league is a core component of the 'Khelo Bharat Niti,' promoting sports for nation-building and women's empowerment.
- The league is a dedicated platform for young girls, addressing historical imbalances and creating new opportunities.
- Till now, the ASMITA League has witnessed participation of almost 3 lakh women in 33 disciplines across 2600 leagues.

2. Viksit Bharat - Guarantee for Rozgar and Ajeevika Mission (Gramin) (VB-G RAM G) Act, 2025:

Context: The Viksit Bharat - Guarantee for Rozgar and Ajeevika Mission (Gramin) (VB-G RAM G) Act, 2025, has several steps to clear before it can be implemented.

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More details:

- According to sources, the Union Rural Development Ministry is holding weekly consultation meetings with the State governments.
- There are several tricky issues that the Centre must navigate, including a formula for "normative allocation" for the States. The objective parameters for this are yet to be finalised.
- The Union government has to frame rules under 11 categories, for example on social audit of the scheme.

About VB-G RAM G Act, 2025:

- The Viksit Bharat-Guarantee for Rozgar and Ajeevika Mission (Gramin) Act, 2025 replaces and comprehensively reforms MGNREGA, marking a major shift in rural employment policy.
- The Act aligns rural employment with the Viksit Bharat 2047 vision by improving accountability, strengthening infrastructure creation, and enhancing income security in rural areas.
- Under the Viksit Bharat Guarantee for Rozgar and Ajeevika Mission Gramin Act, the estimated annual outlay is about 1.51 lakh crore, including the State share.
- The Central share is about 295,692 crore of the total expenditure.

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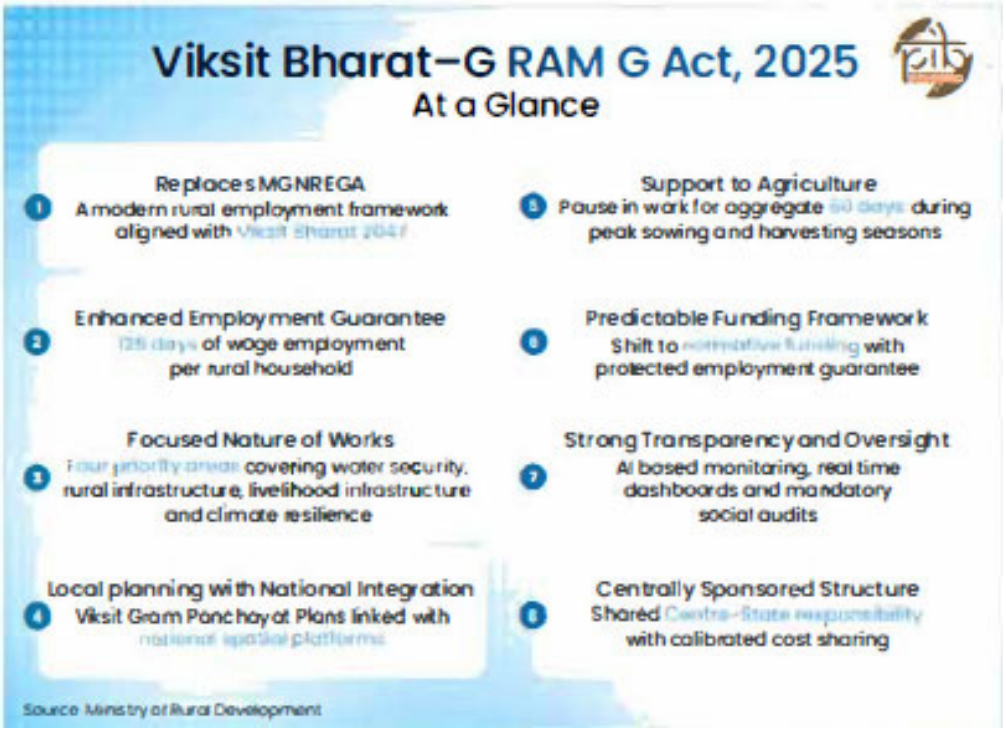

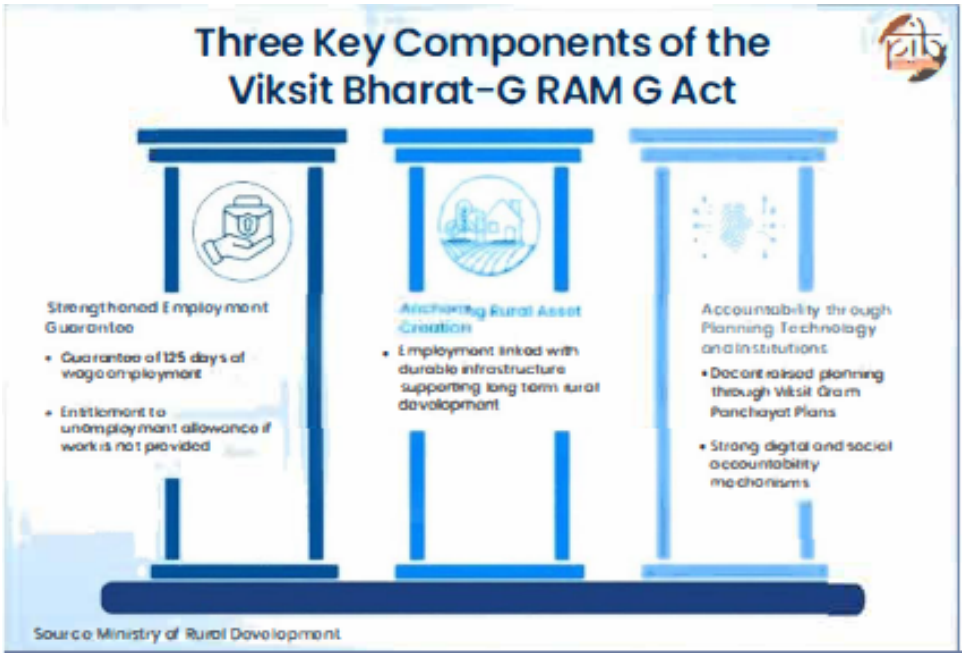

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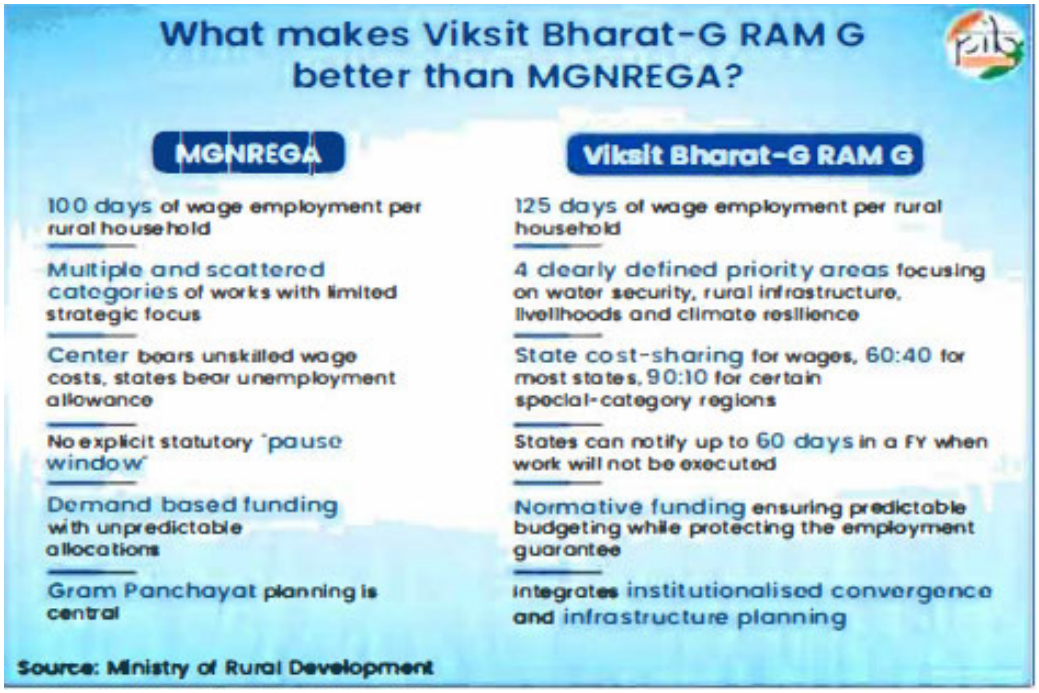

3. Project Cheetah:

Context: The National Tiger Conservation Authority (NTCA), a body under the Union Environment Ministry, said that cheetahs travelling from the Kuno National Park in Madhya Pradesh to Baran district in Rajasthan were showing "natural territorial behaviour".

More about:

- Cheetah cubs KP2 and KP3 are among the first generation born in India to African cheetahs translocated in 2022 under Project Cheetah.
- Both cheetahs are radio-collared and monitored round the clock through satellite tracking by a joint inter-State team.
- Monitoring teams operate from the Kishanganj Forest Range and Anta Forest Range in Rajasthan. Long-distance dispersal across landscapes is a natural territorial behaviour of cheetahs.

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- The National Tiger Conservation Authority noted that such movements were anticipated in the Project Cheetah Action Plan.
- The plan proposes a 17,000 sq. km Kuno-Gandhi Sagar inter-State wildlife corridor across seven districts of Rajasthan and eight districts of Madhya Pradesh.
- On February 28, nine cheetahs (six females and three males) arrived from Botswana under Project Cheetah.
- The animals were transported by a cargo aircraft of the Indian Air Force to Gwalior Air Base and then flown by helicopter to Kuno National Park.
- Botswana became the third African country to send cheetahs to India after Namibia and South Africa.
- Since September 2022, a total of 29 adult cheetahs have been translocated to India.
- Out of these, nine adult cheetahs have died due to various causes.
- About 28 cheetah cubs have been born in India, with around 12 cub deaths recorded so far.
- Three adult cheetahs are currently housed in the Gandhi Sagar Wildlife Sanctuary in Madhya Pradesh.

About Project Cheetah:

- Project Cheetah is the world's first intercontinental large wild carnivore translocation project. The project aimed at the reintroduction of Cheetahs in the country which had become extinct in 1950s in the country.
- The project involves translocation of cheetahs from source countries in Africa.
- Kuno National Park in Madhya Pradesh has been chosen as the first reintroduction site due to its suitable grasslands and prey base.
- The first batch of eight cheetahs (five females and three males) arrived in India from South Africa in September 2022.

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- In February 2023, an additional 12 cheetahs were translocated from South Africa under an agreement for further introductions over the next 8-10 years.
- On February 28, 2026, nine cheetahs (six females and three males) arrived from Botswana under Project Cheetah.

4. Removal of speaker:

Context: The second part of the Budget Session of Parliament is set to resume from Monday and is expected to be stormy, with the first item on the agenda being the debate over the Motion of Removal admitted against Lok Sabha Speaker Om Birla.

Background:

- The resolution, listed against Congress MPs Mohammad Jawed, K. Suresh and Mallu Ravi, has been signed by 118 Opposition members.
- Speaker Birla will not be presiding over the proceedings; instead, in the absence of a Deputy Speaker, the senior-most MP in the presiding officers committee, likely Bharatiya Janata Party MP Jagdambika Pal, may preside over the debate.
- Speaker Birla is permitted under the rules to be present and may be allotted a seat among the Cabinet Ministers.
- Motions seeking the removal of Lok Sabha Speakers are not very common but are not unprecedented, with even the first Speaker of the Lok Sabha, G.V. Mavalankar, being subject to it in 1954, followed by Hukum Singh in 1966.
- The last such instance was in 1987, against then Speaker Balram Jakhar.

Process and Procedure for Removal of the Speaker

Notice of Resolution

- A written notice of intention to move a resolution for removal must be given.

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- At least 14 days' notice is required before the motion is taken up.

Listing and Admission

- The motion is included in the agenda after the notice period.
- The House takes up the resolution for discussion.

Presiding Officer During Discussion

- The Speaker does not preside when a motion for his/her removal is under consideration.
- The Deputy Speaker or another member presides.

Right of the Speaker

- The Speaker has the right to speak and participate in the proceedings.
- However, the Speaker cannot vote in the first instance but may vote in case of a tie (casting vote), as per parliamentary practice.

Voting Requirement

- The resolution must be passed by a majority of all the then members of the House (effective majority).
- If passed, the Speaker vacates office immediately.

MAINS SPECIFIC ARTICLES:

1. One Nation, One Election — remedy worse than disease: (GS paper 2)

Context: The Hindu Editorial Analysis.

Background:

- Indonesia conducted simultaneous national and local elections in 2019 and 2024, leading to severe administrative overload and the deaths and illnesses of many poll workers.
- In June 2025, the Indonesian Constitutional Court ruling on election separation (2025) directed that national and local elections be held separately from 2029 to reduce administrative and voter burden.

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- This experience is cited as a caution for India's One Nation One Election (ONOE) proposal.

Arguments Supporting ONOE

- Synchronising Lok Sabha and State Legislative Assemblies in India elections may reduce election expenditure.
- It could limit long security deployments and reduce disruptions due to the Model Code of Conduct.
- Political parties may spend less time in continuous campaigning, potentially improving governance focus.

Comparative Constitutional Practices

- **Canada:** Federal and provincial elections are conducted independently.
- **Australia:** Synchronisation is impossible due to different legislative tenures (State legislatures have fixed four-year terms while the federal House of Representatives of Australia has a maximum three-year term).
- **Germany:** Stability comes from the Constructive Vote of No Confidence, not synchronised elections.
- South Africa and Indonesia use Proportional Representation electoral system, which protects minority representation.
- United States operates under a Presidential system of government, where the executive tenure is fixed and independent of legislative confidence.

Constitutional Amendment Proposal

- The proposal comes from the High-Level Committee on Simultaneous Elections (2023-24) chaired by Ram Nath Kovind.
- It is reflected in the Constitution (One Hundred and Twenty-ninth Amendment) Bill, 2024.

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- Proposed Article 82A of the Constitution of India empowers the President to notify an "appointed date" aligning State Assembly terms with the Lok Sabha cycle.
- State Assembly tenures could be curtailed to achieve synchronisation.
- Introduces "unexpired-term elections" where a newly elected legislature serves only the remainder of the original term.
- The Election Commission of India may recommend deferring State elections if simultaneous polls are impracticable.
- Amendments proposed to Article 83 of the Constitution of India, Article 172 of the Constitution of India, and Article 327 of the Constitution of India.

Conflict with Parliamentary Democracy

- India adopted a Parliamentary system of government prioritising executive accountability.
- B. R. Ambedkar emphasised that democracy cannot maximise both stability and responsibility simultaneously.
- Article 75 of the Constitution of India and Article 164 of the Constitution of India ensure executive accountability to legislatures through collective responsibility.
- Early dissolution is a democratic safeguard allowing renewal of public mandate.
- ONOE risks shifting India toward a quasi-presidential model by prioritising fixed electoral cycles.

Federalism Concerns

- In S. R. Bommai v. Union of India (1994), the Supreme Court of India declared federalism part of the Constitution's basic structure.
- States possess independent constitutional identities and electoral rhythms.
- NOE could truncate State mandates to align with national cycles, weakening federal autonomy.

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Importance of Staggered Elections

- Staggered elections across Parliament, States, and local bodies maintain constant democratic feedback.
- They function as accountability mechanisms in the absence of recall provisions.
- James Madison in Federalist No. 52 argued that frequent elections maintain government dependence on the people.

Problems with 'Unexpired-Term Elections

- The Constitution currently does not recognise a "residual mandate."
- Proposed Article 83(6) of the Constitution (proposed) and Article 172(5) of the Constitution (proposed) allow newly elected legislatures to serve only the remainder of a term.
- This may reduce voter enthusiasm and devalue the franchise.
- Governments with truncated mandates may avoid long-term reforms and focus on populism.
- Absence of a minimum duration for residual terms could create governance instability.

Governance and Constitutional Issues

- Deferring elections could extend Article 356 of the Constitution of India (President's Rule), which is constitutionally limited.
- At the Union level, caretaker governments may face problems under Article 85 of the Constitution of India (Parliament must meet every six months).
- Budgetary constraints arise under Article 112 of the Constitution of India, Article 117 of the Constitution of India, and reliance on Article 116 of the Constitution of India (Vote on Account).

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Discretionary Power to Defer Elections

- Proposed Article 82A(5) of the Constitution (proposed) allows the Election Commission of India to recommend deferring State elections without clear criteria.
- Unlike Article 356 of the Constitution of India, it lacks explicit safeguards like time limits or parliamentary approval.
- This could allow prolonged central control over States through Governors.

Basic Structure Concerns

- In Supreme Court Advocates-on-Record Association v. Union of India (NJAC Case, 2015), the Supreme Court of India held that constitutional validity depends on institutional design.
- Amendments threatening core constitutional principles can be invalidated even if misuse is not proven.
- ONOE may violate federalism and democratic accountability, both part of the basic structure.

Cost Argument Evaluation

- Parliamentary Standing Committee estimates place combined election spending at about ₹4,500 crore (2015-16).
- This equals about 0.25% of the Union Budget and 0.03% of GDP.
- Historical election costs ranged from 0.02-0.05% of GDP.
- Simultaneous elections may actually require more EVMs, VVPATS, and security forces due to the loss of phased election flexibility.

Expert Committee Opposition

- The Justice Kurian Joseph Committee on Union-State Relations recommended withdrawal of the proposal in its February 2026 report.
- The Government of Tamil Nadu supported this recommendation.

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Conclusion

- ONOE promises administrative convenience but risks weakening federalism, democratic accountability, and constitutional balance.
- Election costs are relatively minor compared to the constitutional risks.
- India's staggered electoral system sustains continuous democratic feedback and should be preserved.

2. Why are Finance Commission grants to cities still so limited?: (GS paper 2 and 3)

Context: The Hindu Explainer:

Urban Economy and Fiscal Reality

- Cities are major centres of economic activity, generating nearly 67% of India's GDP and about 90% of government revenues.
- Despite their economic contribution, fiscal transfers to Urban Local Bodies in India remain limited.
- The recommendations of the Sixteenth Finance Commission of India emphasise increasing Own Source Revenue (OSR) rather than significantly expanding central transfers.

Urban Transfers under the 15th Finance Commission

- The Fifteenth Finance Commission of India allocated around 1.2–1.3 lakh crore to urban local bodies over five years.
- During this period, India's GDP was around 200-210 lakh crore.
- The transfer therefore amounted to roughly 0.12-0.13% of GDP, indicating a very small fiscal share for cities.

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Urban Transfers under the 16th Finance Commission

- The Sixteenth Finance Commission of India proposes 3.56 lakh crore for urban local bodies between 2026-2031.
- This equals roughly 375,000 crore per year.
- With projected GDP around 400 lakh crore, the ratio remains almost unchanged at about 0.13% of GDP, showing limited improvement in urban fiscal support.

Urban Population Growth and Fiscal Pressure

- India's urban population was about 470 million around 2020.
- It is projected to exceed 600 million by the 2026-2030 Finance Commission cycle.
- Urban population is expected to reach 41% by 2031, increasing pressure on urban infrastructure and services.
- When grants are distributed among a larger population, per capita transfers stagnate or decline in real terms.

Issues in Utilisation of Funds

- Under the Fifteenth Finance Commission of India, total local body grants were around 4.36 lakh crore.
- A significant portion remained unspent or pending utilisation, estimated at 90,000–95,000 crore.
- Around ₹30,000-35,000 crore of this unspent amount belonged to urban local bodies, indicating administrative and capacity challenges.

Tied Grants and Fiscal Autonomy

- Tied grants are funds earmarked for specific sectors such as water supply, sanitation, and wastewater management.
- These grants restrict fiscal flexibility because cities must spend them only in the specified sectors.

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- The Sixteenth Finance Commission of India expands the use of tied and performance-based grants, reducing financial autonomy for cities.

Performance-Based Grant Conditions

- Grants will be released only if cities meet certain governance and financial criteria.
- Conditions include regular local body elections, publishing audited accounts, fiscal discipline, and constitution of State Finance Commissions.
- Around 20% of funds are conditional, meaning cities may lose this share if they fail to meet these requirements.

Own Source Revenue (OSR) Requirement

- Cities are encouraged to increase property taxes and user charges.
- The Finance Commission sets a benchmark of ₹1,200 per household through such revenues.
- While fiscally rational, this condition may burden local residents and widen disparities among cities with different revenue capacities.

Federal Concerns over Urban Governance

- The Commission sets aside ₹10,000 crore as an incentive for merging peri-urban villages with towns having populations above one lakh.
- Urban development is constitutionally a State subject, so such incentives may be viewed as federal overreach.
- Forced or incentivised mergers may distort urban planning and prioritise revenue generation over administrative efficiency.

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Administrative Challenges in Some States

- In states like Kerala, rural local governments function effectively.
- Merging rural areas into urban bodies could create administrative, governance, and civic service complications.

Neglect of Climate and Fiscal Issues

- The Commission pays limited attention to climate change challenges faced by cities.
- It also ignores the large share of cess revenues collected by the Union government that remain outside the divisible pool.
- These cess collections amount to around 2.2% of GDP (about 8.8 lakh crore), much of which originates from urban economic activity.

Overall Assessment

- Fiscal transfers to cities remain structurally low despite growing urbanisation.
- Heavy reliance on tied grants and performance conditions reduces local fiscal autonomy.
- The approach overlooks the need for greater decentralisation and financial empowerment of urban governments.

Conclusion

- Urban local bodies require greater fiscal space and autonomy to manage rapid urbanisation.
- The Centre should play an enabling role, allowing cities to plan and finance their own development rather than imposing restrictive fiscal conditions.

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Quick Bites:

- The National Handloom Development Corporation (NHDC), with the support of the Ministry of Textiles is organizing the Exclusive Handloom Expo Virasat Shakti, a special initiative celebrating India's rich handloom heritage while highlighting the role of women in the handloom sector.
- RM Nachammai has created history by becoming the first woman to head the operations of a functional nuclear power plant in India under the Nuclear Power Corporation of India Limited (NPCIL). She has been appointed Chief Superintendent of Kaiga Generating Station Units 3 and 4 in Karnataka, with the role taking effect from 15 March 2026.
- The strikes targeted the markets of Abu Zabad and Wad Banda in West Kordofan state of Sudan part of the resource-rich Kordofan region that is currently the fiercest battlefield in the war between Sudan's army and the paramilitary RSF.
- The Indian Railways has launched a customised app for women employees to lodge complaints about sexual harassment at workplace. Sexual Harassment Incident Notification for Empowerment (SHINE) was made operational on the occasion of International Women's Day.

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10-03-2026

PRELIMS ARTICLES:

1. Open Market Operations (OMO):

Context: With the prolonged war in West Asia likely to have far-reaching consequences on the Indian economy, the Reserve Bank of India (RBI) held Open Market Operations (OMO) buying 50,000 crore Government of India securities (G-Secs) of various maturities. OMOs are key money market policy tools used by the RBI to regulate money supply by buying or selling G-Secs. The latest move is aimed at injecting liquidity.

About Open Market Operations (OMO):

- Open Market Operations (OMOs) are the buying and selling of government securities by the Reserve Bank of India to regulate liquidity in the economy.
- OMOS are used by the central bank to control the money supply in the banking system.
- When the Reserve Bank of India buys government securities, it injects liquidity into the banking system.
- When the Reserve Bank of India sells government securities, it absorbs liquidity from the banking system.
- OMOS help influence interest rates and overall credit conditions in the economy.
- Selling securities through OMOS reduces excess liquidity and helps control inflation. Purchasing securities through OMOS increases liquidity and stimulates economic growth. OMOS also help maintain financial stability and smooth functioning of financial markets.
- OMOS can indirectly affect exchange rates by altering money supply in the economy.

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2. Gyan Bharatam:

Context: The information on Gyan Bharatam mission was given by Union Minister for Culture and Tourism Shri Gajendra Singh Shekhawat in a written reply in Lok Sabha.

About the information given :

- Gyan Bharatam, announced during Union Budget 2025-26, is a flagship initiative of the Ministry of Culture (MoC), Government of India aimed at unearthing, safeguarding and preserving India's vast manuscript heritage.
- **Nodal Ministry:** The initiative is implemented by the Ministry of Culture to preserve and promote India's manuscript heritage.
- **Key Components:** Includes survey and documentation, conservation and restoration, digitisation with a national digital repository, and AI-based tools such as handwritten text recognition and the Gyan-Setu AI Challenge.
- **Significance:** Over 44 lakh manuscripts have been documented in Kriti Sampada, preserving India's knowledge traditions in philosophy, science, medicine, mathematics, arts, literature, and spirituality.
- **Policy Relevance:** Supports Article 51A(f) (duty to preserve cultural heritage) and aligns with the National Education Policy 2020 by integrating Indian Knowledge Systems with modern education and technology.

3. LAMITIYE-2026:

Context: Indian Armed Forces contingent arrived at Seychelles to participate in the Eleventh edition of Joint Military Exercise "LAMITIYE-2026" with Seychelles Defence Forces (SDF).

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About LAMITIYE 2026 exercise:

- 'LAMITIYE' meaning 'Friendship' in the Creole language is a biennial training event and has been conducted in Seychelles since 2001.
- This edition marks a significant milestone with the participation of all three services of the Indian Armed Forces.
- The 12 days long Joint Exercise will include Field Training Exercises, combat discussions, case studies, lectures & demonstrations, culminating with two days of Validation Exercise.

4. Green Cover Index (NH-GCI) for 2025-26:

Context: With the objective to provide a quantitative assessment of the plantations along the National Highways, NHAI has released the first-of-its-kind Annual Report on the National Highways Green Cover Index (NH-GCI) 2025-26. The report has been prepared in coordination with the National Remote Sensing Centre (NRSC) of the Indian Space Research Organisation (ISRO).

Major highlights of the report:

- In this first assessment cycle, approximately 30,000 km of National Highways spanning 24 States have been covered for the period July-December 2024.
- Subsequent annual cycles will track year-on-year changes to monitor progressive improvements in green cover.

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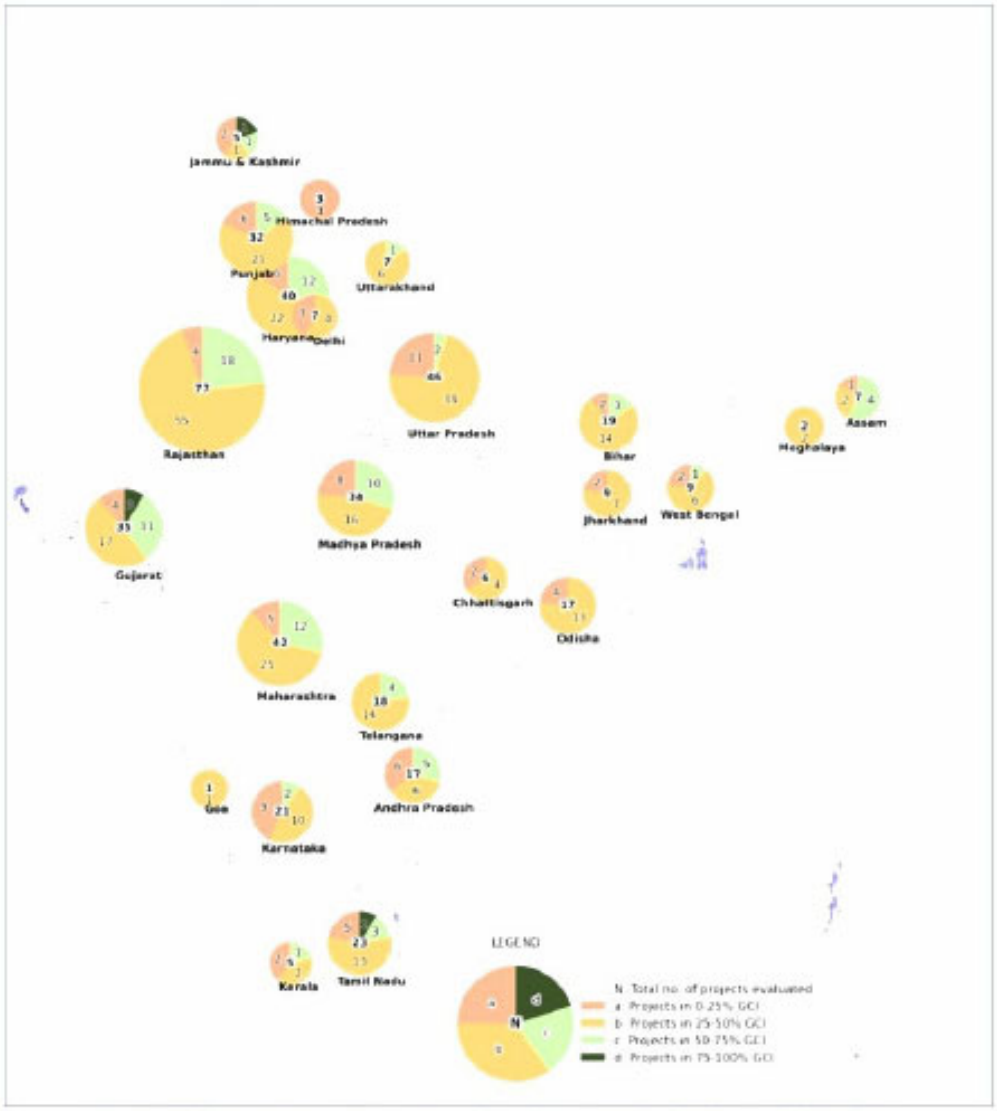

Figure 34 State-wise representation of no. of projects classified as per GCI values

Top 3 Performing States (based on Avenue GCI)

- Assam - 53.16
- Gujarat-46.91
- Telangana - 43.57

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Bottom 3 Performing States (based on Avenue GCI)

- Himachal Pradesh - 13.54
- Delhi - 25.37
- Chhattisgarh - 27.82

MAINS SPECIFIC ARTICLES:

1. Development means expansion of choices in Amartya Sen's 'capabilities approach': (GS paper 3 and 4)

Meaning of Capabilities

- In everyday language, capabilities mean skills or abilities.
- Amartya Sen defined capabilities as substantive freedoms that allow people to live the lives they value.

Development as Expansion of Freedom

- Amartya Sen argued that development should be measured by expansion of human freedoms, not just economic growth.
- His collaboration with Mahbub ul Haq promoted the idea that development means enlarging human choices rather than increasing national income.

Challenge to Economic Reductionism

- The capabilities approach challenged the dominance of GDP and income-based measures of development.
- It emphasised human well-being, freedom, and opportunities rather than purely economic indicators.

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Debate with Martha Nussbaum

- Martha Nussbaum proposed a fixed universal list of capabilities for governments to guarantee.
- Amartya Sen rejected a fixed list to avoid paternalism, preferring societies to decide their own priorities through public debate.

Importance of Freedom in Well-being

- The approach highlights the moral importance of freedom in achieving human well-being.
- Development should expand social opportunities, economic security, and human agency.

Policy Challenges in India

- Translating the capabilities approach into public policy remains difficult.
- Weak conditions for critical thinking, governance decline, and shrinking freedoms affect democratic life.

Declining Educational Standards

- Education systems show falling standards despite a service-sector dominated economy.
- Growing post-truth politics and artificial intelligence influence threaten thinking skills and informed debate.

Theory-Practice Disconnect

- There is a gap between academic theory and practical policy implementation.
- The integration of thought and action (praxis) is largely missing in public discourse.

Justice and Political Philosophy

- Ideas like John Rawls' veil of ignorance rarely influence real political decisions.
- Sen's idea that development is freedom highlights the political nature of development debates.

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Intrinsic Value of Capabilities

- Capabilities are valuable not only as tools for economic growth but also for their intrinsic value in human life.
- They emphasise people's agency and participation in shaping development.

Misinterpretation in Policy Discourse

- Modern policy often reduces capabilities to skill development for employability.
- Amartya Sen argued that education should also promote reasoning, participation, and broader freedoms.

Equality of Autonomy

- Sen emphasised equality of autonomy, meaning individuals should have equal freedom to shape their lives.
- The approach draws insights from complexity theory to understand unpredictable social realities.

Niti and Nyaya Distinction

- Sen distinguishes between niti (rules and institutions) and nyaya (actual justice experienced by people).
- Justice must be evaluated based on real outcomes in people's lives, not just institutional design.

Academic and Institutional Disconnect

- There is a gap between theoretical knowledge (“book view”) and real-world practice ("field view").
- Information is increasingly mistaken for knowledge in a post-truth environment.

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Rise of Plutocratic Populism

- Growing convergence between state power and market interests creates a form of plutocratic populism.
- This weakens civil society and narrows development to economic growth alone.

Need to Restore Human Agency

- The capabilities approach originally aimed to place people at the centre of development.
- Individuals should be active agents of development rather than passive beneficiaries.

Core Message of the Capabilities Approach

- Development must be understood as the expansion of people's freedoms, choices, and agency.
- Restoring this focus is essential for meaningful and human-centred development.

Veil of ignorance:

The "veil of ignorance" is a concept proposed by the philosopher John Rawls to explain how a fair and just society should design its rules.

Rawls imagined that people must decide the principles of justice without knowing their own position in society such as their caste, wealth, gender, religion, talents, or social status.

Because no one knows whether they will end up rich or poor, powerful or disadvantaged, they would choose fair rules that protect everyone, especially the weakest members of society.

Thus, the veil of ignorance is a way of thinking that encourages impartial and fair decision-making in creating social institutions and policies.

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Quick Bites:

- The International Malaria Conference (IMC) 2026, organised by the ICMR-National Institute of Malaria Research (ICMR-NIMR) under the Indian Council of Medical Research (ICMR), concluded successfully in New Delhi. The conference was organised under the theme "Discovery, Development and Delivery: Driving Malaria Elimination and Beyond."
- The Union government has launched a nationwide social media campaign to address the practice of "Sarpanch Pati", where male relatives exercise authority in place of elected women leaders in village governance. Announced by the Ministry of Panchayati Raj (MOPR), the campaign titled "Say No To Proxy Sarpanch" aims to empower women sarpanches and strengthen democratic participation in grassroots governance. The initiative coincides with International Women's Day and will run unitl March 18.

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11-03-2026

PRELIMS ARTICLES:

1. LPG (Liquefied Petroleum Gas) and LNG (Liquefied Natural Gas):

Context: Amid the ongoing conflict in the Gulf region following the U.S. and Israeli strikes on Iran, concerns are growing over the availability of LPG and LNG.

More about:

- India is highly dependent on imports for Liquefied Petroleum Gas (LPG - -58%) and Liquefied Natural Gas (LNG-~50%), with over 80% of LPG and 50% of LNG passing through the volatile Strait of Hormuz.
- Due to the 2026 West Asia conflict, the government has invoked the Essential Commodities Act to prioritize domestic supply and is diversifying sources

Difference between LNG and LPG:

Feature	LPG (Liquefied Petroleum Gas)	LNG (Liquefied Natural Gas)
Full Form	Liquefied Petroleum Gas	Liquefied Natural Gas
Main Composition	Mainly propane and butane	Mainly methane
Source	By-product of crude oil refining and natural gas processing	Obtained from natural gas fields
Liquefaction Temperature	Liquefied at moderate pressure at normal temperatures	Liquefied by cooling natural gas to about -162°C

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Storage	Stored in pressurised cylinders or tanks	Stored in cryogenic (very low temperature) tanks
Common Uses	Domestic cooking gas, heating, small industries	Power generation, industrial fuel, transport fuel, city gas supply
Transport	Usually transported in cylinders or small tankers	Transported in special LNG ships and cryogenic tankers

2. Jal Jeevan Mission (JJM):

Context: Cabinet approves extension of Jal Jeevan Mission (JJM) period up to December 2028 with enhanced outlay and restructured implementation.

More details about reforms:

Restructuring of Jal Jeevan Mission (JJM)

- The Union Cabinet approved restructuring of Jal Jeevan Mission with a total outlay of ₹8.69 lakh crore.
- Central assistance increased to 23.59 lakh crore, up from 2.08 lakh crore approved in 2019-20.
- This includes an additional central share of ₹1.51 lakh crore.

Digital Monitoring Framework

- A national digital framework called "Sujalam Bharat" will be introduced.
- Each village will receive a unique Sujal Gaon / Service Area ID.
- The entire drinking water supply system from source to tap will be digitally mapped.

Transparency and Local Participation

- Greater role for Gram Panchayats (GPS) and Village Water and Sanitation Committees (VWSCs) in scheme commissioning.
- Formal handover of schemes will be done through the initiative "Jal Arpan."

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Certification of Har Ghar Jal

- A Gram Panchayat will certify completion of works before declaring the village as "Har Ghar Jal."
- Certification will be based on confirmation that operation and maintenance mechanisms are in place.

Community Participation Initiative

- The programme will promote "Jal Utsav," an annual community-led maintenance and review event.
- It aims to strengthen community ownership and sustainability of drinking water sources.

Progress Under Jal Jeevan Mission

- In 2019, only 3.23 crore rural households (17%) had tap water connections.
- Under JJM, 12.56 crore additional rural households have received tap water connections.
- Out of 19.36 crore rural households identified, about 15.80 crore (81.61%) households now have tap water connections.

About Jal Jeevan Mission (JJM):

- It is envisioned to provide safe and adequate drinking water through individual household tap connections by 2024 to all households in rural India.
- **Nodal Ministry:** Department of Drinking Water and Sanitation under the Jal Shakti Mantralaya. The mission was launched by Prime Minister on 15 August 2019, with a budget of Rs. 3.6 lakh crore.
- The mission is based on the principle of 'Har Ghar Jal' and seeks to improve the quality of life and health of rural people.
- The villagers have to contribute 10% of the capital cost as well as bear the operation and maintenance costs of the schemes.

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3. Agriculture & Allied Sector:

Context: Agriculture & Allied Sector GVA More Than Doubles to 48.77 Lakh Crore in 2023-24; Foodgrain Production Continues to Rise.

More details:

Share of Agriculture in GVA

- As per estimates released by the Ministry of Statistics and Programme Implementation, the Agriculture & Allied Sector contributes about 18% to India's total GVA.
- The sector's GVA increased from 20,93,612 crore in 2014-15 to 348,77,867 crore in 2023-24.
- It recorded a compound annual growth rate (CAGR) of 8.83% at current prices during 2014-15 to 2023-24.

Composition within Agriculture & Allied Sector

- Crops: 54.39% share of agriculture GVA.
- Livestock: 30.87% share.
- Fishing & Aquaculture: 7.55% share.

Growth of Major Sub-Sectors

- Livestock GVA increased from ₹5,10,411 crore in 2014-15 to 15,05,615 crore in 2023-24.
- Crop sector GVA increased from ₹12,92,874 crore in 2014-15 to 26,52,891 crore in 2023-24.
- Fishing & Aquaculture GVA increased from about 11,65,67 crore in 2014-15 to 36,81,24 crore in 2023-24.

Foodgrain Production Trends

- Foodgrain production rose from 2515.42 lakh metric tonnes (LMT) in 2015-16 to 3577.32 LMT in 2024-25.
- This reflects a compound annual growth rate of about 3.6%.
- According to First Advance Estimates for 2025-26, kharif foodgrain production is estimated at a record 1733.30 LMT.

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Recent Agriculture Growth Estimate

- As per the Second Advance Estimates of Annual GDP for 2025-26, the GVA of Agriculture & Allied Sector is estimated at ₹52,08,800 crore, showing 2.4% growth.

Income of Agricultural Households

- Income data is estimated through the Situation Assessment Survey (SAS) of Agricultural Households conducted by the National Statistical Office.
- The average monthly income of agricultural households increased from ₹6,426 in 2012-13 (NSS 70th round) to 10,218 in 2018-19 (NSS 77th round).
- Income sources include crop production, livestock farming, wages, non-farm businesses, and leasing of land.

4. National Internet Exchange of India (NIXI):

Context: The ICANN85 Community Forum, organized by the Internet Corporation for Assigned Names and Numbers (ICANN) and hosted in collaboration with the National Internet Exchange of India (NIXI) under Meity, brought global Internet stakeholders to Mumbai to discuss how to support an open, secure, inclusive, and resilient Internet across the global Internet ecosystem.

About ICANN

- ICANN's mission is to help ensure a stable, secure, and unified global Internet.
- To reach another person on the Internet, one needs to type an address - a name or a number - into the computer or other device. That address must be unique, so computers know where to find each other.
- ICANN helps coordinate and support these unique identifiers across the world.
- ICANN was formed in 1998 as a nonprofit public benefit corporation with a community of participants from all over the world.

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About NIXI

- The National Internet Exchange of India (NIXI) is a not-for-profit organization set up under the aegis of the Ministry of Electronics and Information Technology (MeitY), Government of India.
- NIXI plays a critical role in strengthening India's Internet infrastructure by facilitating efficient exchange of domestic Internet traffic, managing the .IN and HR (Bharat) country-code top-level domains, and promoting adoption of Internet services across the country.
- Through its initiatives, NIXI supports a secure, resilient, and inclusive Internet ecosystem aligned with India's digital growth ambitions.

MAINS SPECIFIC ARTICLES:

1. Reevaluating the office of the Speaker: (GS paper 2)

Context: The Hindu Editorial Analysis.

Context

- A no-confidence motion has been moved by the Opposition against Om Birla, the Speaker of the Lok Sabha, reviving debate on the constitutional position and accountability of the Speaker.
- Such motions are rare but highlight concerns about the functioning of parliamentary institutions and conventions.

Role and Importance of the Speaker

- The Speaker is the presiding officer of the Lok Sabha and a key pillar of India's parliamentary democracy.
- Responsible for maintaining order in the House, enforcing rules of procedure, and protecting members' rights.
- Ensures balance between the government and the Opposition in parliamentary debates.
- The Constitution expects the Speaker to act as an impartial authority above party politics once elected.

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Powers of the Speaker

- Recognition of members to speak in the House.
- Interpretation and enforcement of procedural rules.
- Disciplinary authority to maintain order in proceedings.
- Certification of Money Bills, which has major legislative implications.
- Decisions significantly influence legislative debates and outcomes.

Constitutional Protection of the Office

- The Constitution provides strong safeguards to ensure the Speaker is not easily removed for political reasons.
- Stability and dignity of the office are protected through strict procedural requirements.

Procedure for Removal

- Removal of the Speaker is governed by Article 94(c) of the Constitution.
- Requires a resolution passed by a majority of the total membership of the Lok Sabha, not just those present and voting.
- A written notice must be submitted to the Secretary-General of the Lok Sabha.
- At least 14 days' notice is required before the motion can be taken up.
- The motion must be supported by at least 50 members for discussion.
- Procedure is detailed in Rules 200-203 of the Rules of Procedure and Conduct of Business in Lok Sabha.
- The resolution must clearly state the charges against the Speaker.
- During the debate, the Speaker may participate and vote in the first instance but cannot exercise a casting vote in case of a tie.

Historical Instances

- No-confidence motions against Speakers have been extremely rare.

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- Attempts were made against G. V. Mavalankar in 1954, Hukam Singh in 1966, and Balram Jakhar in 1987.
- All three motions failed, highlighting the difficulty of removing a Speaker.

Institutional Significance of the Present Motion

- Even if unsuccessful, the motion underscores that the Speaker's authority depends on the confidence of the House.
- The credibility of the office relies heavily on the perception of neutrality and fairness.
- Allegations of partisanship can weaken public trust in parliamentary institutions.

Challenges in the Functioning of the Speaker's Office

- Increasing perception of politicisation of the office.
- Controversies over decisions such as disqualification under the anti-defection law and certification of Money Bills.
- Frequent confrontations between the ruling party and the Opposition leading to procedural deadlocks.
- Gradual erosion of parliamentary conventions and unwritten norms guiding impartial conduct.

Way Forward

- Reinforce parliamentary conventions that the Speaker acts above party politics once elected.
- Improve transparency in procedural rulings with clear explanations for major decisions.
- Encourage dialogue and structured consultations between the government and Opposition.
- Codify best practices regarding the Speaker's discretionary powers to reduce interpretational disputes.
- Strengthening these measures can enhance the credibility of Parliament and support democratic governance.

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2. 16th Finance commission 41%' illusion: (GS paper 2 and 3)

Context: The Hindu Explainer.

Context

- An Explanatory Memorandum issued by the Ministry of Finance on February 1, 2026 responded to the recommendations of the Sixteenth Finance Commission.
- The document is notable not only for the recommendations accepted but also for several structural reforms that were deferred.

Acceptance of Key FC16 Recommendations

- The Union government accepted retaining the States' share in the divisible pool at 41%.
- It also accepted the horizontal devolution formula, local body grants, and the disaster management corpus recommended by the Sixteenth Finance Commission.

Issue with the Divisible Pool

- The 41% share applies only to the divisible pool of taxes, not to the entire gross tax revenue.
- Cesses and surcharges, which are retained entirely by the Union, are excluded from the pool and have been increasing.
- As a result, the divisible pool declined from 89.2% of gross tax revenue during FC13 to 78.3% during FC15, reducing the effective share available to States.

Discontinuation of Certain Grants

- FC16 discontinued revenue deficit grants, sector-specific grants, and State-specific grants.
- These instruments earlier provided targeted fiscal support to States with weaker finances. Projected Fiscal Outlook
- The Commission projects that combined general government debt will decline from 77.3% of GDP in 2026-27 to 73.1% by 2030-31.
- However, this aggregate outlook hides significant fiscal stress among individual States.

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Structural Reforms Deferred

- Several structural issues were identified by FC16 but not implemented by the Union.
- These include reforms in Fiscal Responsibility Legislation (FRL), regulation of off-budget borrowings, power sector distribution reforms, and subsidy rationalisation.

GST Compensation Gap

- The end of GST compensation in June 2022 removed the guaranteed 14% annual growth in SGST revenues for States.
- Some States continue to face fiscal pressure; for example, Tamil Nadu estimated a shortfall of nearly 20,000 crore in 2024-25.

Off-Budget Borrowings Issue

- FC16 highlighted that States often borrow through government-controlled entities, keeping liabilities outside official deficit figures.
- Though reforms were recommended, the Union deferred action on regulating such borrowings and amending fiscal rules.

State-Level Fiscal Stress

- Several States have high debt-to-GSDP ratios and persistent revenue deficits.
- Punjab had a debt-to-GSDP ratio of 42.9%, while Rajasthan had 37.9%, West Bengal 38.3%, and Andhra Pradesh 34.6%.

Change in Horizontal Devolution Criteria

Horizontal devolution formula of FC15 vs FC16

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Criterion	FC15 weight (2021-2026)	FC16 weight (2026-2031)	Change (*pp)
Income distance (per capita GSDP)	45%	42.50%	-2.5
Population (2011 Census)	15%	17.50%	+2.5
Demographic performance	12.50%	10%	-2.5
Area	15%	10%	-5
Forest cover	10%	10%	-
Tax & fiscal effort	2.50%	Dropped	-2.5
Contribution to GDP	-	10% (New)	+10

- FC16 replaced the tax and fiscal effort criterion with a contribution to GDP criterion.
- The new criterion carries 10% weight, compared to the earlier 2.5% weight for fiscal effort.
- This benefits economically larger States such as Maharashtra, Gujarat, and Karnataka.

Impact on Less Developed States

- States with lower per capita incomes such as Bihar, Jharkhand, and Uttar Pradesh gain less from the new formula.
- Critics argue that the change weakens the equalisation principle in fiscal federalism.

Conditionality in Local Body Grants

- FC16 recommended ₹7.91 lakh crore for rural and urban local bodies.
- Grants are divided into basic and performance-based components with conditions such as audited accounts, constituted local bodies, and timely State Finance Commission reports.
- States with weaker administrative capacity may struggle to meet these conditions.

Overall Implications

- The Union accepted financial transfers that ensured budget predictability but deferred deeper structural reforms.

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- The evolving transfer system increasingly rewards economic weight rather than fiscal need.
- Continued deferral of structural reforms may intensify Centre-State fiscal asymmetry and strain India's federal framework.

3. SC to look into plea against law on Muslim inheritance: (GS paper 1)

Context: The Supreme Court of India observed that reforms regarding Muslim inheritance laws may be better addressed by Parliament rather than by striking down provisions of the Muslim Personal Law (Shariat) Application Act, 1937.

Issue in the Shariat Act

- The law applies Islamic inheritance rules among Muslims.
- Widows with children receive one-eighth share of property and one-fourth share if they have no children.
- Daughters receive half the share of sons, leading to claims of gender discrimination.

Petitioner's Argument

- Advocate Prashant Bhushan, representing petitioner Poulomi Pavini Shukla, argued that the provisions create artificial discrimination between men and women.
- He contended that such provisions violate Article 14 (Right to Equality) of the Constitution.

Bench Hearing the Case

- The case was heard by a Bench comprising Chief Justice Surya Kant, Justice R. Mahadevan, and Justice Joymalya Bagchi.

Court's Concern About Legal Vacuum

- The Bench questioned which law would govern Muslim inheritance if the Shariat Act were struck down.
- The Chief Justice warned that striking down the law could create a legal vacuum and potentially reduce existing protections for Muslim women.

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Suggestion of Alternative Law

- The petitioner suggested applying the Indian Succession Act, 1925 to Muslim inheritance matters if the Shariat Act provisions were invalidated.

Reference to Earlier Judgment

- The petitioner cited the landmark case Mary Roy vs State of Kerala.
- In that case, the Court invalidated the Travancore Christian Succession Act, 1916, granting equal inheritance rights to Syrian Christian women.

Debate on Uniform Civil Code

- Justice Bagchi suggested that such reforms may be better addressed by Parliament in line with Article 44 of the Constitution of India.
- Article 44 in the Directive Principles urges the State to establish a Uniform Civil Code (UCC) across the country.

Judicial Restraint Argument

- The Bench noted that issues involving personal laws and broader social reforms should ideally be handled through legislative action rather than judicial intervention.

Uniform Civil Code:

- **Uniform Civil Code (UCC):** A proposal to have one common set of civil laws governing marriage, divorce, inheritance, adoption, and succession for all citizens in India irrespective of religion.
- **Constitutional Basis:** Mentioned in Article 44 of the Constitution of India under the Directive Principles of State Policy, directing the State to endeavour to implement a UCC. Nature of Provision: Being a Directive Principle, it is not legally enforceable and implementation depends on government policy decisions.
- **Objective:** To promote equality, national integration, and gender justice by replacing religion-based personal laws with a common civil law.

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- **Existing Example:** Goa follows a form of UCC based on the Portuguese Civil Code of 1867.
- **Colonial Context:** The British introduced uniform criminal laws but avoided standardizing personal or family laws due to religious sensitivities.

Quick Bites:

- The Union Cabinet chaired by the Prime Minister Shri Narendra Modi has approved the declaration of Madurai Airport, Tamil Nadu, as an International Airport. Madurai Airport, located in the Temple City of Madurai, Tamil Nadu, is one of the oldest airports in the State. Defence Research & Development Organisation (DRDO) and the Indian Navy jointly conducted four successful in-flight release trials of the indigenous Air Droppable Container 'ADC-150' from the P8I aircraft off the coast of Goa. Indigenously designed and developed to deliver 150 kg payload, the Air Droppable Container enhances the naval operational logistics capabilities for providing quick response to naval vessels under distress, needing critical stores/equipment, medical assistance etc. at blue sea deployed far from the coast.
- The Ministry of Ports, Shipping and Waterways has approved the renovation of the historic Bascule Bridge at Syama Prasad Mookerjee Port, Kolkata, at a cost of 117.54 crore to enhance safety and operational efficiency.
- The United States is reportedly considering the possibility of capturing Iran's Kharg Island, a move aimed at restricting Tehran's oil revenues amid escalating tensions in the Middle East. The island is Iran's primary oil export hub and a vital component of its energy infrastructure. The National Bank for Agriculture and Rural Development (NABARD), in collaboration with the Gates Foundation and Dalberg Advisors, has launched the National Climate Stack Innovation Challenge to strengthen India's climate resilience framework for rural regions. The initiative aims to build foundational technological layers of a National Climate Stack that will integrate diverse climate datasets and enable more effective climate intelligence for agriculture, rural finance, and public planning.

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12-03-2026

PRELIMS ARTICLES:

1. AAHAR 2026:

Context: The Agricultural and Processed Food Products Export Development Authority (APEDA), under the Ministry of Commerce & Industry, participated in the 40th edition of AAHAR 2026 held from 10-14 March 2026 at Bharat Mandapam, New Delhi.

More about:

- The 40th edition of AAHAR - The International Food & Hospitality Fair was inaugurated by Union Minister of Commerce and Industry Shri Piyush Goyal.
- Organised by the India Trade Promotion Organisation (ITPO), the landmark edition of the event features Italy as the Country Partner.

About AAHAR:

- AAHAR is one of Asia's largest and most well-known food and hospitality trade exhibitions. It serves as a Business-to-Business (B2B) platform for companies in the food processing, hospitality, and related sectors.
- The event brings together global vendors, buyers, chefs, and industry professionals to showcase products, technologies, and innovations in the food and hospitality industry.

2. Glaucoma:

Context: In a landmark advancement in glaucoma surgery, surgeons at Army Hospital (Research & Referral), New Delhi have successfully performed a world's first implantation of the Hydrus Microstent guided by intraoperative aqueous angiography along with cataract surgery.

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More details:

- This novel technique allows precise, targeted placement of the implant within Schlemm's canal, enhancing aqueous drainage and improving outcomes for patients with Glaucoma.
- The achievement represents a major global milestone in precision Minimally Invasive Glaucoma Surgery.

About Glaucoma:

- Glaucoma (Kala Motia) is an eye disease in which increased intraocular pressure damages the optic nerve, affecting vision.
- It occurs when the drainage of aqueous humour (eye fluid) becomes blocked, causing pressure to build up inside the eye.
- The condition may be caused by ageing, disease, trauma, or other factors that obstruct fluid drainage.
- Peripheral (outer) vision is affected first, while central vision remains normal in early stages.
- It is known as the "silent thief of sight" because early stages usually show no noticeable symptoms.
- By the time it is diagnosed, significant and irreversible peripheral vision loss may already have occurred.

3. Bug Bounty Programme:

Context: The Unique Identification Authority of India (UIDAI) has launched its first structured Bug Bounty Programme to further strengthen the security of the Aadhaar system.

About Bug Bounty Programme:

- The programme allows cybersecurity experts to look for possible weaknesses in some of UIDAI's key digital platforms.
- If they find genuine security gaps and report them responsibly, they will receive rewards based on the seriousness of the issue.

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- The researchers will check these systems for vulnerabilities that fall into categories such as Critical, High, Medium, and Low risk.
- Depending on the severity of the issue discovered, they will receive appropriate rewards.
- UIDAI is running the program in partnership with M/s ComOlho IT Private Limited, a cybersecurity solution provider.

4. Kavach 4.0:

Context: Kavach 4.0 Successfully Commissioned on 1,452 Route Km Covering High-Density Delhi-Mumbai and Delhi-Howrah Routes.

More about:

- Kavach version 4.0 covers all the major features required for the diverse railway network. This is a significant milestone in safety for Indian Railways.
- Within a short period, IR has developed, tested and started deploying Automatic Train Protection System.
- Major improvement in Version 4.0 includes increased Location Accuracy, Improved Information of Signal Aspects in bigger yards, Station to Station Kavach interface on OFC and Direct Interface to existing Electronic Interlocking System.
- With these improvements, Kavach Ver.4.0. is planned for large scale deployment over Indian Railways.

About Kavach system:

- Kavach is an indigenously developed Automatic Train Protection (ATP) system.
- Kavach aids the Loco Pilot in running of trains within specified speed limits by automatic application of brakes in case Loco Pilot fails to do so and also helps the trains to run safely during inclement weather.

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- It is certified with the highest railway safety standard, Safety Integrity Level-4 (SIL-4), which means it has an extremely high reliability in preventing accidents.
- Kavach was adopted as the National ATP system in July, 2020.
- It is developed by the Research Design and Standards Organisation (RDSO) Implementation of Kavach System involves following Key Activities:
  a. Installation of Station Kavach at each and every station, block section.
  b. Installation of RFID Tags throughout the track length.
  c. Installation of telecom Towers throughout the section.
  d. Laying of Optical Fibre Cable along the track.
  e. Provision of Loco Kavach on cach and every Locomotive running on Indian Railways.

5. Fiscal Health Index 2026:

Context: NITI Aayog launched second annual edition of "Fiscal Health Index"

About Fiscal Health Index:

- The Fiscal Health Index provides a comprehensive and comparable assessment of the fiscal performance of Indian states.
- The Index has been designed as a data-driven framework to evaluate fiscal soundness, guide reforms, and promote evidence-based fiscal policymaking across states.
- While the first edition assessed the fiscal performance of 18 major states, this edition includes the 10 North-Eastern and Himalayan states, making the Index more inclusive and representative of India's fiscal diversity.
- To account for structural differences across regions, the Northeastern and Himalayan states have been evaluated and ranked separately from the major states.

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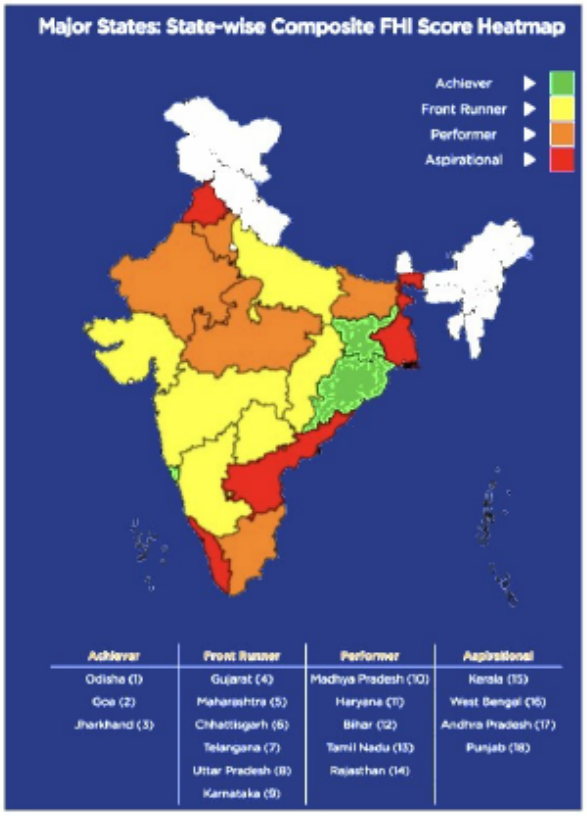
Major highlights:



States	FHI Score	Rank 2023-24	Quality of Expenditure	Revenue Mobilisation	Fiscal Prudence	Debt Index	Debt Sustainability
Odisha	73.1	1					
Goa	54.7	2					
Jharkhand	50.5	3					
Gujarat	49.9	4					
Maharashtra	45.0	5					
Chhattisgarh	44.3	6					
Telangana	44.3	7					
Uttar Pradesh	41.9	8					
Karnataka	41.7	9					
Madhya Pradesh	37.8	10					
Haryana	34.5	11					
Bihar	30.9	12					
Tamil Nadu	29.8	13					
Rajasthan	27.6	14					
Kerala	24.8	15					
West Bengal	23.8	16					
Andhra Pradesh	23.1	17					
Punjab	12.4	18					

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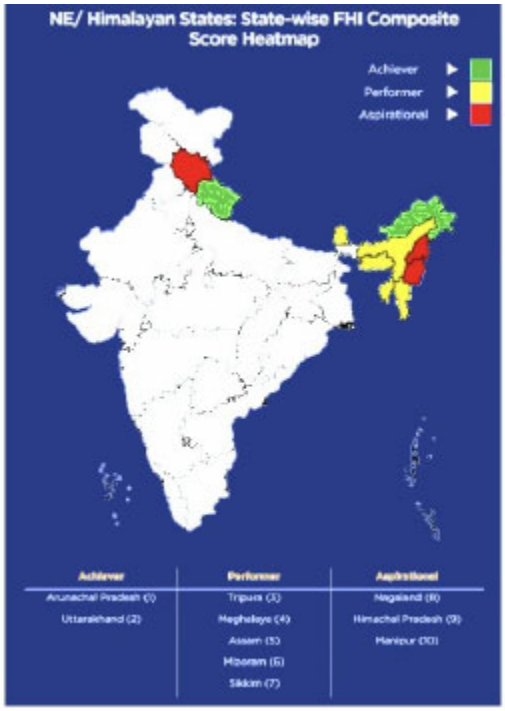

States	FHI Score	Rank 2023-24	Quality of Expenditure	Revenue Mobilisation	Fiscal Prudence	Debt Index	Debt Sustain-ability
Arunachal Pradesh	59.5	1	97.6	40.6	59.0	62.3	38.3
Uttarakhand	52.5	2	28.2	83.3	26.6	66.5	58.7
Tripura	44.1	3	24.6	23.5	38.5	66.2	67.7
Meghalaya	41.5	4	66.6	38.2	12.8	57.8	31.9
Assam	39.1	5	30.9	58.3	16.4	69.2	20.4
Mizoram	33.4	6	28.9	37.8	29.9	69.1	1.4
Sikkim	32.5	7	27.3	44.8	10.8	56.5	25.3
Nagaland	27.1	8	15.8	21.8	21.1	47.1	55.3
Himachal Pradesh	22.0	9	13.2	64.2	3.0	24.9	4.6
Manipur	17.6	10	11.8	1.5	19.4	30.3	26.1

6. Crude oil:

Cntext: Oil prices remained well below Monday's peaks but the price of Brent crude, the international standard, was still up some 20%.

Various kind of Crude oil in the world:

- Crude oil is a naturally occurring, unrefined fossil fuel composed of hydrocarbons and other organic compounds, formed over millions of years from buried, compressed marine organic matter.
- Extracted from underground, it is a thick, black liquid that must be refined into products like gasoline, diesel, and petrochemicals.

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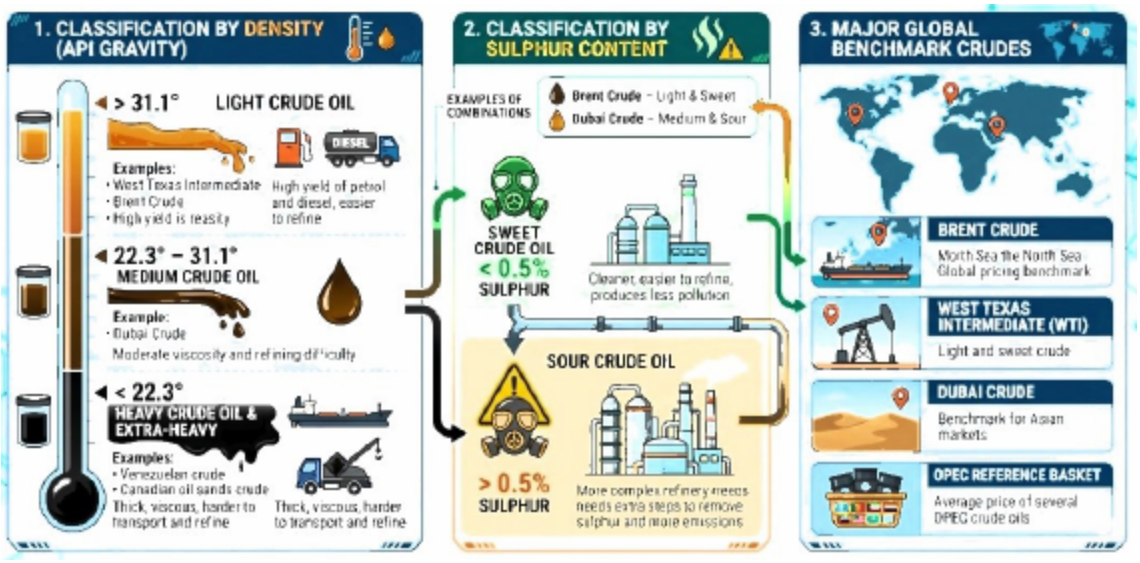
GLOBAL CRUDE OIL CLASSIFICATION & BENCHMARKS



MAINS SPECIFIC ARTICLES:

1. Euthanasia: (GS paper 4)

Context: The Supreme Court of India allowed passive euthanasia for Harish Rana, who has been in a persistent vegetative state (PVS) for 13 years after a 2013 accident. The decision represents the first practical implementation of India's passive euthanasia guidelines established by earlier Supreme Court judgments.

Background:

- Harish Rana suffered severe head injuries after falling from a balcony in 2013 and remained in a persistent vegetative state (PVS) with 100% quadriplegia for over 13 years.
- His father approached the Delhi High Court in 2024 seeking permission to withdraw life-support treatment, but the plea was rejected.
- The family later moved the Supreme Court of India.

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- A bench of Justice J. B. Pardiwala and Justice K. V. Viswanathan formed two medical boards to assess the patient's condition.
- The medical boards concluded that chances of recovery were negligible.
- Based on these findings, the Court allowed withdrawal of life-sustaining treatment, marking the first practical implementation of India's passive euthanasia framework.

About Euthanasia:

- Euthanasia refers to the deliberate act of ending the life of a person suffering from an incurable disease or irreversible condition in order to relieve pain and suffering. It is usually performed by a physician and is broadly classified into active euthanasia and passive euthanasia,
- Active euthanasia involves directly causing the death of a patient through deliberate medical intervention, such as administering a lethal injection. This form of euthanasia is illegal in India and may be treated as culpable homicide or abetment to suicide under criminal law.
- Passive euthanasia involves withdrawing or withholding life-sustaining treatment, such as ventilators, artificial nutrition, or other medical support. In such cases, death occurs naturally due to the underlying illness. Passive euthanasia is permitted in India under strict guidelines laid down by the Supreme Court of India.

2. Why is India staring at the LPG deficit?: (GS paper 3)

Context: The Hindu Explainer.

LPG Shortage and Strategic Storage Issue in India

- India has witnessed LPG shortages affecting daily life due to high dependence on imports and limited storage capacity.
- The LPG system in India is designed mainly for continuous operational supply rather than long-term stockpiling.

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- The International Energy Agency has identified lack of strategic LPG storage infrastructure as a key weakness in India's energy system.

High Import Dependency and Supply Risks

- Around 85% of India's LPG imports pass through the Strait of Hormuz, making supplies vulnerable to disruptions.
- LPG imports increased threefold between 2011-12 and 2024-25 to around 20 million tonnes.
- Import dependence rose from 47% in 2015 to nearly 60% currently.
- In FY2026, imports had already crossed 18 million tonnes by January.

Consumption Pattern in India

- India consumes around 3 million tonnes of LPG per month, making it the second-largest LPG consumer globally.
- Daily LPG consumption is about 80,000 tonnes, with over 85% used by households.
- The country has around 33 crore domestic LPG connections.
- About 10 crore connections were added after 2017 through the Pradhan Mantri Ujjwala Yojana.
- The scheme aimed to provide clean cooking fuel to poor households, reducing reliance on firewood, cow-dung, and kerosene.

Current LPG Storage Capacity

- India's LPG storage capacity can meet less than half of the monthly consumption requirement.
- Most storage exists in surface tanks at import terminals such as Ennore.
- Underground LPG storage in India totals about 1.4 lakh tonnes, equivalent to less than two days of consumption.

Existing Underground LPG Caverns

- India currently has two underground LPG storage caverns:
  - Visakhapatnam cavern commissioned in 2007.

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- Mangaluru cavern commissioned in 2025 with 80,000 tonnes capacity, roughly one day's consumption.

Government Policy and Future Plans

- The Ministry of Petroleum and Natural Gas informed Parliament in 2025 that no additional LPG caverns are currently planned.
- India signed an LPG import agreement with the United States in 2025 for 2.2 million tonnes per year.
- However, U.S. shipments take about 45 days to reach India, compared to shorter travel times from the Persian Gulf.

International Comparison

- In Europe, countries can store around 25% of annual gas consumption in storage facilities.
- The European Union introduced mandatory storage filling targets in 2022 after the Russia-Ukraine War.
- Member states must ensure 90% storage levels before winter, with some exceptions.

Geological Zones Suitable for Gas Storage in India

- **Peninsular Shield:** Covers about 60% of peninsular India and consists of granite, gneiss, and charnockite rocks suitable for caverns. Both operational LPG caverns are located in this region.
- **Deccan Traps:** A basaltic plateau covering about 5,00,000 sq km in western and central India but poses engineering challenges for storage construction.
- **Salt Formations in Rajasthan:** The Bikaner-Barmer belt contains halite deposits that can be used for cavern storage.

Advantages of Salt Cavern Storage

- Salt caverns are cheaper and faster to construct.
- They are naturally impermeable, ensuring safe storage.
- Allow rapid injection and withdrawal of gas.

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- A refinery is under construction in Barmer, and crude pipelines already pass through the region.
- Engineers India Limited has partnered with Germany's DEEP.KBB GmbH to develop salt cavern storage technology.

Other Potential Storage Options

- Depleted gas reservoirs are being studied for storage.
- Possible locations include the Krishna-Godavari Basin, Cambay Basin, and Mumbai Offshore Basin.

Quick Bites:

- The President of India Smt Droupadi Murmu graced and addressed the 'Jal Mahotsav 2026" in New Delhi. The Ministry of Jal Shakti is organising Jal Mahotsav 2026 - a nationwide campaign from 8 March to 22 March to strengthen Jan Bhagidari and community ownership in rural drinking water service delivery under the Jal Jeevan Mission.
- New Delhi to Host Groundbreaking Global Conference on Women in Agri-Food Systems (GCWAS-2026) from 12-14 March 2026. The programme is taking place during the UN-declared 'International Year for Women Farmers' in 2026.The conference theme, "Driving Progress, Attaining New Heights," is perfectly aligned with the global focus on women farmers.
- MOSPI has also launched a new web based monitoring system called PAIMANA (Project Assessment Infrastructure Monitoring and Analytics for Nation-Building) to monitor the status of Ongoing Central Sector Infrastructure Projects costing Rs. 150 crore and above.
- The Union Minister of Textiles, Shri Giriraj Singh, unveiled Bharat Tex 2026, India's flagship global textile event, signalling the country's growing leadership in the global textile economy. Building upon the remarkable success of earlier two editions, Bharat Tex 2026 is poised to be the largest and most impactful edition to date. The event is an industry led initiative and will be organised by the Bharat Tex Trade Federation (BTTF) - an umbrella group of 11 Textile related Export Promotion Councils (EPCs) and other industry bodies.

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- The North Atlantic Treaty Organization (NATO) has launched its biennial Arctic military exercise named "Cold Response,". Cold Response is designed to test NATO's ability to conduct military operations in harsh Arctic environments.
- India is advancing its unmanned warfare capabilities with the development of the Sheshnaag-150, a long-range swarming attack drone currently undergoing testing developed by defence startup Newspace Research Technologies.
- The Protection of Plant Varieties and Farmers' Rights Authority (PPVFRA) has officially registered "Nagauri Paan Methi" as a Community Farmers' Variety of Rajasthan.
- The Forest Survey of India (FSI), the central agency responsible for monitoring the country's forest resources, has stopped issuing fortnightly deforestation alerts through its Al-based Anavaran portal. The Anavaran-Deforestation Alert System was operational from January 2024 and used satellite imagery and advanced algorithms to detect changes in forest cover.

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13-03-2026

PRELIMS ARTICLES:

1. Dandi March:

Context: The Prime Minister Shri Narendra Modi, paid homage to all the great personalities who participated in the Dandi March, which began on 12th March in 1930.

About Dandi March:

The Dandi March, also called the Salt March, was a non-violent civil disobedience movement led by Mahatma Gandhi against the British salt monopoly.

- The march took place from 12 March 1930 to 6 April 1930 as part of the Civil Disobedience Movement.
- Gandhi started the march from Sabarmati Ashram with 78 followers.
- The march covered 241 miles to the coastal village of Dandi on the Arabian Sea.
- At Dandi, Gandhi broke the salt law by making salt from seawater.
- The act triggered mass civil disobedience across India against British salt taxation.
- In cities like Mumbai and Karachi, people also began producing salt in defiance of British laws.
- The movement soon involved millions of Indians, and the British arrested over 60,000 people.
- Gandhi was arrested on 5 May 1930, but the movement continued.
- On 21 May 1930, Sarojini Naidu led 2,500 volunteers in a protest at the Dharasana Salt Works.
- The Dharasana protest was reported internationally by journalist Webb Miller, creating global criticism of British rule.
- Gandhi was released in January 1931 and later met Lord Irwin.

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- Gandhi agreed to suspend the movement after securing a role in negotiations at the Second Round Table Conference.
- The success of the march led to nationwide defiance of the salt laws.

Regional Participation in the Salt Satyagraha:

- **Tamil Nadu:** C. Rajagopalachari led the Vedaranyam Salt March from Tiruchirapalli to Vedaranyam, along with picketing foreign cloth shops and anti-liquor campaigns.
- **Malabar:** K. Kelappan and P. Krishna Pillai organised salt marches from Calicut to Poyannur.
- **Bengal:** Subhas Chandra Bose and J. M. Sengupta led salt satyagraha and anti-chaukidari tax movements.
- **Peshawar:** Khan Abdul Ghaffar Khan organised the Khudai Khidmatgars (Red Shirts) and Garhwal Rifles soldiers refused to fire on protesters.
- **Dharasana:** Sarojini Naidu, Imam Sahib Abdul Kadir Bawazeer, and Manilal Gandhi led the protest at Dharasana Salt Works.
- **Bardoli and Kheda:** Sardar Vallabhbhai Patel led the no-tax and land-revenue refusal movement.
- **United Provinces:** Jawaharlal Nehru led no-revenue and no-rent campaigns.
- **Bihar:** Ambika Kant Sinha organised salt law breaking in Patna and anti-chaukidari tax movements.
- **Orissa:** Gopabandhu Choudhury organised satyagraha in coastal districts like Balasore, Cuttack, and Puri.

2. FraudPro:

Context: C-DOT's Indigenous AI-Driven Fraud Detection Solution 'Fraud Pro' among Top Finalists at Prestigious Global Mobile (Glomo) Awards at Mobile World Congress (MWC) 2026 in Barcelona, Spain.

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About Fraud Pro:

- Designed and developed by C-DOT, FraudPro is an advanced AI/ML driven fraud detection platform aimed at securing telecom ecosystems against identity-based fraud.
- The solution leverages sophisticated Artificial Intelligence (AI) and Machine Learning (ML) techniques for large-scale image deduplication, forged document detection, and re-verification, enabling telecom operators to proactively detect fraudulent mobile connections in the network and prevent misuse of telecom resources.
- This solution is deployed by Department of Telecommunication in India as part of Digital Intelligence Platform and Sancharsaathi portal

3. Global Engagement Scheme:

Context: The information about the Global Engagement Scheme was given by Union Minister for Culture and Tourism Shri Gajendra Singh Shekhawat in a written reply in Rajya Sabha.

About Global Engagement Scheme:

- The Ministry of Culture implements the "Global Engagement Scheme" to promote India's rich cultural heritage internationally and enhance India's global image.
- The primary objectives of the Scheme include strengthening cultural ties with foreign nations, promoting bilateral cultural contacts, projecting India's cultural identity on the world stage and encouraging inbound tourism.
- The Global Engagement Scheme has the following three components:
  - Festival of India (Fol)
  - Grant in aid to Indo Foreign Friendship Cultural Societies
  - Contributions to Inter-governmental organizations
- Components (1) & (II) of the scheme are administered through Indian Missions abroad to achieve its objectives.

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4. International Solar Alliance (ISA):

Context: The 10th foundation day of International Solar Alliance (ISA was celebrated on March 11th.

About International Solar Alliance (ISA):

- The International Solar Alliance promotes global cooperation to accelerate solar energy deployment and support the transition to clean energy.
- The global solar revolution reflects the increasing importance of solar power in achieving sustainable and low-carbon energy systems.
- ISA mobilises partnerships among governments, development institutions, industries, and investors to scale up solar energy worldwide.
- The alliance was jointly launched by India and France during UNFCCC COP21 in 2015.
- ISA was created with the vision that solar-rich countries can collaborate to harness solar energy for sustainable development and energy access.
- Over time, ISA has evolved into a major global platform for international cooperation on solar energy.
- The alliance currently includes more than 120 member countries.
- ISA focuses on expanding solar energy adoption in Africa, Asia, Latin America, and Small Island Developing States (SIDS).
- Solar energy in these regions helps improve energy access, livelihoods, and climate resilience.

5. India's power generation capacity:

Context: The information about India's power generation was given by The Minister of State in the Ministry of Power, Shri Shripad Naik, in a written reply in the Lok Sabha.

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More details:

- India has added 52,536.49 MW Installed Generation Capacity in the current financial year FY 2025-26 (till January, 2026).
- As on 31.01.2026, the total Installed Generation Capacity is 5,20,511 MW, comprising of 2,48,542 MW (47.7%) of fossil-fuel sources and 2,71,969 MW (52.3%) of non-fossil fuel sources.
- The share of 'Renewable Energy' sources in total installed capacity is 2,63,189 MW (50.6%).

Details of All India Power Generation Capacity Addition during FY2025-26(till 31st January 2026):

Source	**Power Generation Capacity Addition (in MW)**
Coal	8,810
Gas	0
Thermal Total	8,810
Hydro	3,370
Wind	4,612.58
Solar	34,955.24
Bio Power	30.61
Small Hydro	58.06
Renewable Total	43,026,49
Nuclear Total	700
Total Capacity Addition	**52,536.49**

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Category		Installed Generation % Share in	
		Capacity (MW)	Total
Fossil Fuel	Coal	2,21,210	42.5%
	Lignite	6,620	1.3%
	Gas	20,122	3.9%
	Diesel	589	0.1%
Total Fossil Fuel:		**2,48,542**	**47.7%**
Non- Fossil Fuel	RES (Incl. Hydro)	2,63,189	50.6%
	Hydro	51,165	9.8%
	Wind, Solar & Other RE	2,12,025	40.7%
	Wind	$4,650	10.5%
	Solar	1,40,602	27.0%
	BM Power/Cogen.	10,757	2.1%
	Waste to Energy	857	0.2%
	Small Hydro Power	5,159	1.0%
	Nuclear	8,780	1.7%
Total Non-Fossil Fuel:		**2,71,969**	**52.3%**
Total Installed Capacity (Fossil Fuel & Non-Fossil Fuel)		**5,20,511**	**100%**

6. Digital Twin initiative:

Context: The V.O. Chidambaranar Port Authority has achieved a major technological milestone by becoming the first port in India to launch the Digital Twin initiative for port management.

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About Digital Twin initiative:

- The Digital Twin platform will create a real-time virtual replica of the port's infrastructure, operational assets, and maritime ecosystem, enabling enhanced operational visibility, predictive analytics, and data-driven decision-making across the port.
- The Digital Twin Platform enables real-time operational monitoring, providing live visualisation of berth occupancy, vessel movements, crane utilisation, and yard capacity across the port. 7.

7. Double Asteroid Redirection Test (DART):

Context: A recent study found that Double Asteroid Redirection Test by NASA impacted the asteroid Dimorphos, altering not only its motion around Didymos but also slightly changing the entire asteroid system's orbit around the Sun.

More details:

- Dimorphos is a natural satellite or moon of the near-Earth asteroid 65803 Didymos.
- The two asteroids are not a threat to Earth, but because they do pass relatively close to Earth, they were chosen as the target for NASA's Double Asteroid Redirection Test (DART) mission.
- This technology could one day be used to deflect hazardous asteroids on a collision course with Earth.
- An asteroid is a small rocky body that orbits the Sun in our solar system. These objects are remnants from the early formation of the solar system

About Double Asteroid Redirection Test (DART):

- It was a spacecraft designed to test a method of deflecting an asteroid for planetary defense.
- The target of the spacecraft was a 160-meter-wide asteroid known as Dimorphos, which is a moonlet in orbit around the larger asteroid, Didymos.
- It was launched in November 2021.

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- DART spacecraft successfully collided with Dimorphos on 26 September 2022, altering the asteroid's orbit.
- It is the first time humanity intentionally changed the motion of a celestial object in space.

8. Purified Terephthalic Acid (PTA) and Mono Ethylene Glycol (MEG):

Context: The price of Purified Terephthalic Acid (PTA) and Mono Ethylene Glycol (MEG), raw materials used to make synthetic fibres, filament and yarn, rose by ₹20.48/kg.

About Purified Terephthalic Acid (PTA) and Mono Ethylene Glycol (MEG):

Purified Terephthalic Acid (PTA)

- Purified Terephthalic Acid is a white crystalline organic compound used as a key raw material in the polyester industry.
- Chemical formula: C&H (COOH).
- Produced mainly by oxidizing p-xylene derived from crude oil refining.
- Major raw material for manufacturing polyester fibres, polyester films and polyethylene terephthalate (PET) resin.
- Used in products such as textile fibres, plastic bottles, packaging films and industrial yarns.
- PTA is one of the two main inputs required for polyester production.

Mono Ethylene Glycol (MEG)

- Mono Ethylene Glycol is a colourless, odourless, viscous liquid used widely in chemical industries.
- Chemical formula: C:H.O.
- Manufactured from Ethylene Oxide which is produced from ethylene obtained from petroleum or natural gas.
- Mainly used in the production of polyester fibres and PET plastic.

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- Also used as antifreeze, coolant in automobile engines, and in resins and solvents.

MAINS SPECIFIC ARTICLES:

1. Preparing India for a true innovation-led economy: (GS paper 3)

Context: The Hindu Editorial analysis.

India's Innovation Paradox

- India shows strong government ambition in research, development and innovation (RDI), but outcomes remain limited.
- Major concerns include low R&D intensity, weak private-sector participation, poor research-to-market translation, and limited global technological influence.
- The main challenge today is execution rather than policy intent.

Government Initiatives and Policy Support

- Government announced a ₹1,00,000 crore Research, Development, and Innovation (RDI) Fund to promote innovation and deep technology.
- Union Budget introduced a ₹20,000 crore corpus for deep-tech startups along with tax incentives and digital infrastructure investments.
- Funding for Atal Tinkering Labs increased from ₹500 crore to ₹3,200 crore to nurture future innovators.
- Removal of the three-year existence requirement for deep-tech startups under the Industrial R&D Promotion Programme.
- HANTI Act, 2025 allows patents for peaceful uses of nuclear energy, encouraging private-sector innovation in nuclear technology.

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Improvement in Innovation Indicators

- India ranks 38th among 139 economies in the Global Innovation Index (GII) 2025.
- Patent filings increased from about 59,000 in 2020-21 to over 1,10,000 in 2024-25.
- Domestic patent filings now account for around 62% of total filings.

Low R&D Expenditure

- India spends only about 0.65% of GDP on research and development.
- This is significantly lower than innovation leaders such as Singapore, Japan, and South Korea.
- Government continues to finance most R&D due to limited private-sector investment.

Patent Scale and Global Comparison

- China files over 1.8 million patent applications annually, while the United States files around 600,000.
- India's patent filings remain much smaller despite recent growth.
- This indicates the limited scale of India's technological innovation.

Global Technological Influence (PCT Applications)

- India filed 4,547 Patent Cooperation Treaty (PCT) applications in 2024.
- China filed over 70,000, the United States over 54,000, and Japan over 48,000.
- Switzerland filed over 5,300 applications, highlighting India's relatively low global patent presence.

Human Capital Constraints

- India ranks 95th in employment in knowledge-intensive sectors.
- Ranked 80th in the number of full-time equivalent researchers.

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- Ranked 101st in employment of women with advanced degrees, indicating gender disparity in scientific fields.
- Government initiatives such as WIDUSHI and WISE-KIRAN aim to improve women's participation in science and engineering.

Structural Industrial Weakness

- India missed the phase of large-scale labour-intensive industrialisation seen in East Asian economies.
- The economy remains heavily dependent on agriculture and services.
- Many startups rely on labour-based platforms rather than deep-tech innovation.

Weak Research-to-Market Linkages

- Universities and public institutions generate research but commercialization remains limited.
- Technology transfer systems, venture creation, and risk-capital ecosystems are underdeveloped.
- Innovation ecosystems require stronger links between academia, industry, and finance.

Need for Private Sector Leadership

- Industry must take a larger role in long-term, high-risk R&D investments.
- Emerging sectors such as private space startups and deep-tech enterprises show promise.
- India's presence in future technologies such as 6G standard-essential patents will indicate its innovation strength.

Way Forward

- Government has created enabling policies and funding frameworks.
- Stronger industry participation is essential for innovation-led growth.

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- India's global technological standing will depend on successful commercialization of research and industry-led R&D investment.

2. India co-sponsors resolution passed by UNSC against Iran: (GS paper 2)

Context: On Wednesday, India co-sponsored a Gulf Cooperation Council (GCC) resolution at the United Nations Security Council (UNSC) along with 134 countries that demanded the "immediate cessation of all attacks by the Islamic Republic of Iran" against GCC countries Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, the United Arab Emirates, and Jordan.

Protection of Maritime Routes

- The resolution condemned threats by Iran to disrupt navigation through the Strait of Hormuz.
- The strait is a crucial global oil shipping route.

India's Strategic Interests in the Gulf

- India highlighted the presence of about 10 million Indians working in GCC countries.
- The region is critical for India's energy security.
- About 50% of India's crude oil and 90% of its LPG imports come from this region.

India-Iran Context

- Around 9,000 Indians live in Iran.
- India stopped importing oil from Iran in 2019 due to U.S. sanctions.

Criticism of India's Position

- India has not directly condemned military actions by the United States and Israel against Iran.
- These attacks reportedly caused large casualties and damage to Iranian infrastructure.

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Major Incidents Highlighted

- Iranian Supreme Leader Ali Khamenei was reportedly killed during attacks.
- The Iranian naval ship IRIS Dena was sunk in the Indian Ocean.
- A bombing of a school in Mubin reportedly killed around 150 schoolgirls.

Government Response

- The Ministry of External Affairs expressed regret over loss of civilian lives.
- S. Jaishankar made statements in Parliament emphasising civilian safety.

Views of Former Diplomats

- Former Foreign Secretary Nirupama Menon Rao criticised the resolution for presenting Iran as the sole aggressor.
- Former Foreign Secretary Kanwal Sibal suggested India should have acknowledged the death of Iran's leader.
- Former Foreign Secretary Shyam Saran argued India should respond more firmly to U.S. actions near its maritime region.

3. 'Parental income alone cannot set creamy layer status': (GS paper 3)

Supreme Court Ruling on Creamy Layer Criteria

- Supreme Court of India ruled that creamy layer status for OBC reservation cannot be determined solely on the basis of parental income.
- The judgment clarifics long-standing confusion regarding the income/wealth criteria used to identify the creamy layer among Other Backward Classes.

Impact on Reservation Eligibility

- The ruling may expand the pool of OBC candidates eligible for reservation.

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- Children of senior officials in public sector organisations who were earlier excluded due to parental salary above 28 lakh may now qualify.

Income Sources Excluded from Calculation

- The Court held that parental income from salaries and agricultural land should not be counted when applying the income/wealth test.
- Creamy layer identification must follow the original framework established for OBC reservations.

Case Background

- The case was heard by a Bench comprising P. S. Narasimha and R. Mahadevan.
- The appeal was filed by the Union government against lower court decisions favouring OBC candidates.
- The dispute involved OBC candidates whose parents worked in Central and State Public Sector Undertakings (PSUs).

Issue with PSU and Bank Employees

- Confusion existed over how to determine creamy layer status for children of PSU and public sector bank employees.
- Authorities had counted parental salary income while applying the 28 lakh income threshold, leading to exclusion of several candidates.

Status-Based Principle of Creamy Layer

- The Court emphasised that creamy layer identification is primarily status-based rather than purely income-based.
- Advancement in government service hierarchy reflects social progression regardless of fluctuating salary levels.

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Origin of Creamy Layer Concept

- The creamy layer exclusion framework was introduced when OBC reservations were implemented in 1993.
- The policy aimed to prevent socially and economically advanced OBC families from availing reservation benefits.

DOPT Guidelines on Exclusion

- The Department of Personnel and Training created guidelines identifying certain families as ineligible based on occupation.
- Children of constitutional authorities, senior government officials, armed forces officers, and large property owners were generally excluded.

Exceptions in Eligibility Rules

- Some groups remain eligible despite high status, including children of MPs and MLAs.
- Government employees promoted to higher posts (rather than directly recruited) are also cligible.
- Owners of unirrigated agricultural land may qualify subject to the 28 lakh income limit.

Problem with the 2004 Clarification

- A 2004 DoPT clarification allowed parental salary to be counted separately for PSU employees when determining creamy layer status.
- This interpretation led to disputes and exclusion of several OBC candidates.

Supreme Court Observation on Equality

- The Court held that excluding children of PSU or private employees solely based on salary income would create discrimination.

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- Such treatment would result in unequal treatment of individuals who are otherwise similarly placed.

Quick Bites:

- The President of India Smt Droupadi Murmu graced and addressed the inaugural session of the Global Conference on the Role of Women in Agri-Food Systems (GCWAS-2026) in New Delhi. The GCWAS-2026 is being jointly organised by the Trust for Advancement of Agricultural Sciences (TAAS), the Indian Council of Agricultural Research (ICAR), the Consultative Group for International Agricultural Research (CGIAR) and the Protection of Plant Varieties and Farmers' Rights Authority (PPV&FRA).
- Netflix has launched Eyeline Studios, its global production and innovation studio, in Hyderabad, marking an investment in India's growing Animation, Visual Effects, Gaming and Comics (AVGC) ecosystem.
- Ministry of Tourism launched 'Challenge Based Destination Development' as an initiative under Swadesh Darshan 2.0 scheme with the intention to undertake holistic development of the destination to enhance tourist experience across all points of tourist value chain, which also focuses on transforming destinations as sustainable and responsiblle destinations.
- The Karnataka High Court has directed the state government to halt all ground-level activities within the Sharavathi Valley Lion-Tailed Macaque Sanctuary and its Eco-Sensitive Zone.

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14-03-2026

PRELIMS ARTICLES:

1. Samriddh Gram Phygital Services Pilot Initiative:

Context: Union Minister of Communications and Development of North Eastern Region, Shri Jyotiraditya M. Scindia will inaugurate the Samriddhi Kendra, an Integrated Phygital (Physical + Digital) Service Centre, at Umri village in Guna district, Madhya Pradesh on 14th March, under the Samriddh Gram Phygital Services Pilot Initiative of the Department of Telecommunications (DoT).

More about Samriddhi Kendra:

- The Samriddh Gram Pilot in Umri Village showcases how integrated services can drive socio-economic development in rural areas through the Samriddh Kendra, a one-stop hulb located in the Panchayat Bhawan.
- Samriddh Kendra offers a range of services across multiple sectors: Education and Skill Development, Agriculture, Health and Telemedicine, e-Governance, Financial Inclusion and e-Commerce, Connectivity and Digital Access and Surveillance and Safety.

About Samriddh Gram Phygital Services Pilot Initiative:

- Samriddh Gram Phygital Services Pilot Project aims to transform rural India by integrating physical infrastructure with digital service delivery.
- It follows a phygital model combining on-ground service centres with digital platforms to empower rural citizens.
- The project uses BharatNet to ensure seamless digital connectivity for service delivery.
- Three pilot villages selected are Ari and Umri in Madhya Pradesh, Narakoduru in Andhra Pradesh, and Chaurawala in Uttar Pradesh.

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- Each selected village will establish a Samriddhi Kendra functioning as an integrated digital service hub.
- Education and Skilling services include smart classrooms, AR/VR-based learning, and digital skill training aligned with government initiatives.
- Agriculture services include IoT-based soil testing, drone support, and smart irrigation systems.
- Healthcare services include teleconsultation facilities, Health ATMs, and emergency medical support.

2. Additive manufacturing:

Context: The Ministry of Electronics and Information Technology (MeitY), Government of India, organized the second edition of the National Additive Manufacturing Symposium (NAMS) on 13th March 2026 at Scope Convention Centre, New Delhi.

About Additive manufacturing:

- Additive Manufacturing (AM) is the industrial term for 3D printing, where computer designed objects are created layer by layer using materials such as plastics, composites, or bio-materials.
- It uses computer-created designs to produce three-dimensional objects layer by layer.
- AM is an additive process in which materials such as plastics, composites, or bio-materials are deposited gradually to build an object.
- Unlike traditional subtractive manufacturing, AM builds objects by adding material through techniques like powder deposition, resin curing, and filament fusing.
- The process is computer-controlled and enables the production of complex shapes with high precision.
- India has strong potential to benefit from the global adoption of AM technologies and become a major manufacturing hub.

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- To support this sector, the Ministry of Electronics and Information Technology launched the National Strategy on Additive Manufacturing aiming to achieve a 5% share in the global AM market and add about $1 billion to India's GDP by 2025.

3. Project Great Indian Bustard:

Context: Union Minister of Environment, Forest and Climate Change Shri Bhupender Yadav on Friday informed that Project Great Indian Bustard (GIB) has entered the fourth year of its captive breeding programme with the hatching of two new chicks at the Conservation Breeding Centre of Rajasthan this week, taking the tally of birds in captivity to 70.

About Project Great Indian Bustard:

- The conservation program has been running since 2016 for long-term recovery of Great Indian Bustard and Lesser Florican.
- It is implemented by the Wildlife Institute of India.
- The next phase is proposed from 2024 to 2033.
- It includes habitat development, in-situ conservation, completion of the conservation breeding centre, releasing captive-bred birds, etc.

About Great Indian Bustard:

- Ground bird with a height of about one metre.
- The body is brownish with a black patch spotted in white.
- It is protected under schedule-1 of the Wildlife Protection Act, 1972.
- It is largest among the four-bustard species found in India and other three being MacQueen's bustard, lesser florican and the Bengal florican.
- They feed on insects, lizards, grass seeds etc.

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- This bird, found mainly in Rajasthan and Gujarat.
- Its historic range included much of the Indian sub-continent but it has now shrunken to just 10 percent of it.
- **Conservation Status:** Schedule I of Wildlife Protection Act, 1972, IUCN: Critically Endangered

4. Economic Stabilisation Fund:

Context: Centre sets aside *57,381 cr. to offset "global headwinds"

More about:

Context:

- Amid rising global crude oil prices (around $100 per barrel) and concerns over energy shortages and supply chain disruptions due to the West Asia conflict, the Government of India announced fiscal measures to stabilize the economy.

Economic Stabilisation Fund Allocation:

- The Central Government allocated 257,381 crore to create an Economic Stabilisation Fund.
- The fund aims to provide fiscal space to address global economic shocks, particularly rising oil prices and supply chain disruptions.

Supplementary Demand for Grants:

- The Lok Sabha approved the Centre's Second Supplementary Demand for Grants.
- The government sought approval for additional expenditure of about 22.81 lakh crore in the current financial year.

Net Additional Cash Outgo:

- Due to additional receipts of around 80,000 crore, the net additional cash spending will be 22.01 lakh crore.

Fiscal Deficit Target:

- According to the Nirmala Sitharaman, the government will still meet the fiscal deficit target for 2025-26 despite the extra spending.

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- The fiscal deficit target remains 4.4% of India's GDP, as announced in the Union Budget on February 1.

Government Assurance:

- The Finance Minister assured Parliament that the extra expenditure will not lead to breaching the fiscal deficit target, indicating controlled fiscal management despite global economic uncertainties.

What is a supplementary grant?

- It is granted when the amount authorised by the Parliament through the appropriation act for a particular service for the current financial year is found to be insufficient for that year.

Other types of grants:

- **Additional Grant:** Granted when additional expenditure is required during the current financial year for a new service not included in that year's budget.
- **Excess Grant:** Granted when expenditure on a service during a financial year exceeds the amount originally approved in the budget and it is voted by the Lok Sabha after the financial year with prior approval of the Public Accounts Committee.
- **Vote of Credit:** Granted to meet unexpected or indefinite expenditure demands, functioning like a blank cheque given by the Lok Sabha to the executive.
- **Exceptional Grant:** Granted for a special purpose that does not form part of the current service of any financial year.
- **Token Grant:** Granted when new expenditure is met through reappropriation of existing funds where a token amount of Re 1 is voted by the Lok Sabha without increasing total expenditure.

5. National Chambal Sanctuary:

Context: The Supreme Court on Friday decided to step in to save the fragile lotic ecosystem of the National Chambal Sanctuary, home and breeding spot for the critically endangered gharials or

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fish-eating crocodiles, situated at the trijunction of Rajasthan, Madhya Pradesh, and Uttar Pradesh, from rampant and illegal sand mining.

About National Chambal Sanctuary:

- National Chambal Sanctuary is a tri-state protected area located along the Chambal River at the junction of Rajasthan, Madhya Pradesh, and Uttar Pradesh.
- It was first declared in 1978 in Madhya Pradesh and is jointly managed by the three states.
- The sanctuary was created to protect species like the Gharial (Critically Endangered). Red-crowned Roof Turtle, and the Ganges River Dolphin (Endangered).
- The river ecosystem features ravines, hills, and sandy banks, which provide ideal breeding grounds for gharials and other aquatic wildlife.
- National Chambal Sanctuary is recognized as an Important Bird Area (IBA) and is also a proposed Ramsar Site.
- The sanctuary faces threats from illegal sand mining, which damages the fragile lotic river ecosystem essential for wildlife breeding.

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About Gharials:

- **Range:** The Gharial historically ranged across rivers in Bangladesh, Bhutan, India, Myanmar, Nepal, and Pakistan.
- **Major Population:** The largest populations occur in tributaries of the Ganga River-Chambal River and Girwa River in India, and the Rapti-Narayani River in Nepal.
- **Gharial Reserves in India:** Major conservation areas are located in Uttar Pradesh, Madhya Pradesh, and Rajasthan.
- **Size:** It is one of the largest crocodilian species, with males reaching 16-20 feet (5-6 m) and females 11.5-15 feet (3.5-4.5 m) in length.
- **Skin:** The species has thick skin covered with smooth epidermal scales that do not overlap. → Distinct Snout: The gharial has the thinnest and most elongated snout among all crocodilians. → Ghara Feature: Adult males possess a bulb-like structure called 'ghara' at the tip of the snout, used for vocalisation and display.
- **Aquatic Nature:** It is the most aquatic crocodilian species, rarely leaving water except for basking and nesting on sandbanks.
- **Breeding:** Mating occurs between November and January, and eggs are laid from March to May.
- **Conservation Status:** The Gharial is listed as Critically Endangered in the International Union for Conservation of Nature Red List.

6. E20 Cryogenic engine:

Context: ISRO conducts sea level test of cryogenic engine at 22 tonne thrust level with full area nozzle.

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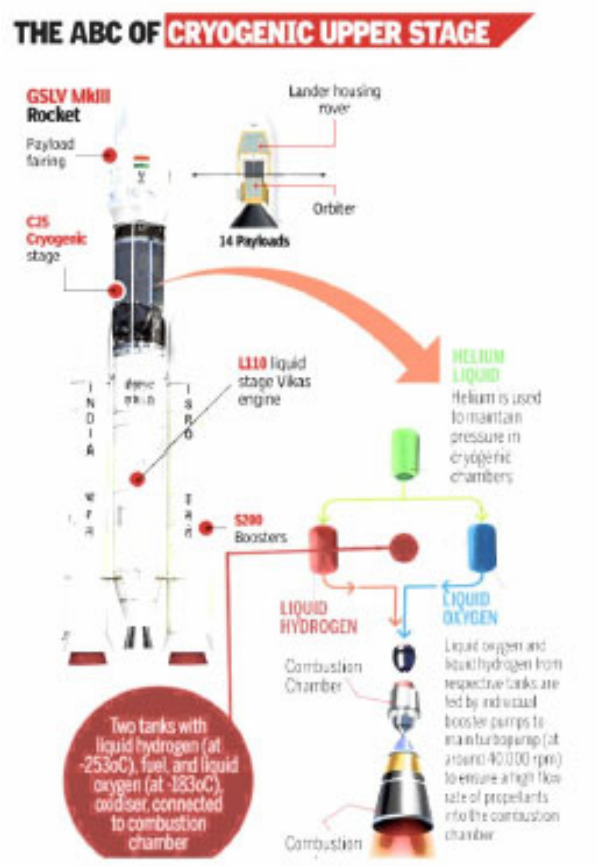
What are cryogenics?

- The study of the production and behaviour of materials at extremely low temperatures (below -150 degrees Celsius) to lift and place heavier objects in space is known as cryogenics.
- Cryogenic gases are used as fuel, and liquid helium is used to cool detectors in space, allowing them to take highly accurate measurements.
- Cryogenic liquids are liquids that have a normal boiling point below -130°F.
- These include nitrogen, hydrogen, oxygen, helium, and argon.
- These are the gases that have been liquefied and stored at extremely low temperatures.

What are cryogenic engines?



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- A cryogenic engine, also known as a cryogenic stage, is the final stage of a space launch vehicle that uses cryogenics.
- Cryogenic engine makes use of Liquid Oxygen (LOX) and Liquid Hydrogen (LH2) as propellants which liquefy at -183 deg C and -253 deg C respectively.
- A cryogenic engine provides more force with each kilogram of cryogenic propellant it uses compared to other propellants.

About CE20 cryogenic engine:

- The CE20 cryogenic engine powers the upper cryogenic stage of LVM3 launch vehicle.
- In order to enhance the payload capability of the LVM3 vehicle, future missions of LVM3 are planned to be operated with an uprated C32 stage with 22 tonne thrust for the CE20 engine.
- **Developed by:** The upgraded cryogenic engine was developed by the Liquid Propulsion Systems Centre at Valiamala in Kerala under Indian Space Research Organisation.
- **Output/Thrust:** The engine has been upgraded to produce 20 tonnes of thrust, with potential enhancement to 22 tonnes for the future C32 stage.
- **C32 Stage:** C32 is a new heavier cryogenic upper stage, a variant of the C20 engine, intended to replace the lower-capacity C25 stage.
- **Successful Missions:** The engine has successfully operated in six consecutive LVM3 Rocket missions, including Chandrayaan-2, Chandrayaan-3, and two OneWeb commercial launches.
- **Launch Vehicle Capacity:** The LVM3 Rocket (Geosynchronous Satellite Launch Vehicle Mk III) is a three-stage launch vehicle capable of carrying about 4000 kg payload to geosynchronous transfer orbit.

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MAINS SPECIFIC ARTICLES:

1. Parliamentary panel seeks committee on urban infrastructure: (GS paper 3)

Context: Citing the absence of an integrated long-term urban investment and strategy framework, a Parliamentary Standing Committee has recommended that the government constitute a High-Level Expert Committee to comprehensively assess India's urban infrastructure requirements.

More about:

- **Need for Integrated Framework:** The committee highlighted the absence of a long-term urban investment and strategy framework, warning that it could lead to fragmented planning, inefficient resource allocation, and future financing stress.
- **Existing Urban Missions:** The Ministry of Housing and Urban Affairs noted that several programmes AMRUT 2.0, Swachh Bharat Mission-Urban 2.0, Pradhan Mantri Awas Yojana-Urban 2.0, Metro Rail projects, and PM e-Bus Seva are improving urban living conditions and supporting the vision of Viksit Bharat 2047.
- **Committee Observation:** The panel observed that these flagship initiatives remain largely scheme-driven and sector-specific rather than forming part of a unified long-term urban development strategy.
- **Urbanisation and Economic Growth:** The ministry cited the 2022 report "Cities as Engines of Growth" by NITI Aayog and Asian Development Bank, which emphasises the strong link between urbanisation and GDP growth.
- **Previous Urban Infrastructure Assessment:** The last comprehensive evaluation was done by the High Powered Expert Committee in 2011, which projected urban infrastructure needs only up to 2031 and estimated that 75% of Indians would live in cities by 2030.
- **Current Gap:** The committee pointed out that no updated national-level assessment currently exists to estimate India's urban infrastructure and financing requirements beyond 2030.

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2. Pandemic Agreement: (GS paper 2)

Context: Ahead of a crucial meeting of countries in Geneva this month where they must agree on a rule book, accompanying the so-called "Pandemic Agreement, India has found common cause with a coalition of developing countries-called the Group for Equity-that says developing countries that share pathogen materials and genetic sequence data must receive fair, concrete, and legally enforceable benefits in return.

Background:

- **Adoption of the Agreement:** The World Health Organization Pandemic Agreement was adopted by the World Health Assembly on May 20, 2025.
- **Background:** The agreement was developed in response to the global challenges revealed during the COVID-19 pandemic, which exposed major gaps and inequalities in global health emergency preparedness and response.
- **Objective:** The aim was to draft and negotiate a legally binding international instrument on pandemic prevention, preparedness, and response under the framework of the World Health Organization.
- **Negotiation Process:** After adoption, an Intergovernmental Working Group on the Pandemic Agreement was tasked with negotiating the operational details of the Pathogen Access and Benefit-Sharing (PABS) system.
- **Next Steps:** Once finalized and approved by the World Health Assembly, the agreement will be opened for countries to sign and ratify, making it formally applicable.

What is the demand from developing countries?

- **Pathogen and Data Sharing Debate:** A key issue in the World Health Organization Pandemic Agreement discussions is how biological samples of viruses and bacteria, along with their genetic sequence data, should be shared with international laboratory networks.

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- **Demand of Developing Countries:** Developing nations insist that pathogen materials and digital sequence information must be governed by standard legally binding contracts at every stage of sharing.
- **Pathogen Access and Benefit-Sharing System:** Under the PABS (Pathogen Access and Benefit-Sharing) system, every entity handling pathogen materials or sequence data must sign enforceable agreements that include benefit-sharing obligations.
- **Monetary Benefit Sharing:** Companies that commercialise products derived from PABS materials would be required to pay a percentage of their annual revenue back into the system. → Non-Monetary Benefits: Manufacturers must reserve a portion of real-time production of pandemic-related products for the World Health Organization, with at least 10% donated, provide non-exclusive licences to manufacturers in developing countries during emergencies, and ensure affordable or not-for-profit pricing.
- **Equity and Traceability Demand:** The "equity group" argues that both physical pathogen samples and digital sequence information should be traceable back to the originating country to ensure fair benefit sharing.

3. Indian-flagged LPG carrier crosses the Strait of Hormuz: tracking data: (GS paper 2)

Context: The Indian-flagged LPG carrier Shivalik LPG Carrier, owned by Shipping Corporation of India, crossed the Strait of Hormuz after departing from Ras Laffan in Qatar on March 7; the Indian Navy denied reports that it was escorting the ship.

More details:

- **Cargo Significance:** The ship carries about 55,000 tonnes of LPG, which is roughly one day of India's LPG imports.
- **Induction into Fleet:** Shivalik LPG Carrier and Sahyadri LPG Carrier were inducted into the fleet of the Shipping Corporation of India during August-September 2025.

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- **Ships Stranded Due to Conflict:** Around 28 Indian-flagged ships stopped movement in the Persian Gulf-Gulf of Oman region after the West Asia conflict began on February 28.
- **Movement of Oil Tanker:** The oil products tanker Jag Prakash Oil Tanker, owned by Great
- Eastern Shipping Company, resumed movement after loading at Sohar Port in Oman and heading towards Tanzania.
- **Remaining Stranded Ships:** Three Indian-flagged ships with 76 seafarers remain in the Gulf of Oman, while 23 ships west of the Strait of Hormuz in the Persian Gulf remain stranded. → Diplomatic Efforts: Narendra Modi discussed the situation with Masoud Pezeshkian, but the government stated it was premature to expect Iran to reopen the strait for Indian ships.
- **Indian Seafarers in the Region:** Around 23,000 Indian nationals work in merchant ships, ports, and offshore vessels in the Persian Gulf region, monitored by the Directorate General of Shipping.
- **Security Risks in the Strait:** Shipping companies fear attacks while crossing the Strait of Hormuz, with reports indicating about 600 ships stranded in the region when the conflict began.
- **Navigation Challenges:** The crude carrier Shenlong Crude Oil Carrier crossed the strait carrying one million barrels of oil but reportedly navigated using manual methods due to GPS spoofing and jamming.
- **AIS and 'Dark Transits':** According to Richard Meade of Lloyd's List, several ships switch off their Automatic Identification System (AIS) to avoid detection, leading to "dark transits" across the strait.

4. Paid menstrual leave may hurt women's careers: SC: (GS paper 1)

Context: The Supreme Court expressed apprehensions that a law making paid leave during menstrual pain compulsory may damage the careers of young women and deprive them of equal opportunities.

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More about:

- **Supreme Court's Concern:** The Supreme Court of India expressed concern that making menstrual leave legally mandatory could negatively affect women's career prospects and equal opportunities.
- **Observation by CJI:** Surya Kant, heading a Bench with Joymalya Bagchi, noted that compulsory menstrual leave laws might lead employers to avoid giving women major responsibilities.
- **Support for Voluntary Policies:** The Court encouraged voluntary menstrual leave initiatives by States such as Odisha, Karnataka, and Kerala, which allow leave for menstrual pain in certain educational institutions.
- **Distinction by Court:** The Bench distinguished between a legally enforceable statutory right and voluntary employer policies providing menstrual leave.
- **Petition for Uniform Law:** Advocate Shailendra Mani Tripathi sought directions for a uniform national law granting paid menstrual leave for working women and students under Article 21 of the Constitution.
- **Legal Gap Argument:** The petitioner argued that a judicial directive was needed to address the absence of menstrual leave provisions in the Maternity Benefit Act, 1961.
- **Existing Institutional Policies:** Some institutions such as National Law Institute University Bhopal, Maharashtra National Law University Aurangabad, and Panjab University have already adopted menstrual leave policies.
- **Practical Concerns Raised:** Justice Bagchi noted that while the cause for affirmative action is valid, the Court must consider practical realities of the job market and employer perspectives. → International Context: The petition highlighted that India is a signatory to Convention on the Elimination of All Forms of Discrimination against Women and cited examples of menstrual leave policies in countries like the United Kingdom, China, Japan, South Korea, and Zambia.

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Quick Bites:

- The Agricultural and Processed Food Products Export Development Authority (APEDA), under the Ministry of Commerce & Industry, Goverment of India, facilitated the first export consignment of 25 metric tonnes of Geographical Indication (GI)-tagged Joha Rice from Assam to the United Kingdom and Italy.
- Data centre capacity in the country has increased from about 375 MW in 2020 to around 1500 MW by 2025.
- Department of Fisheries, Government of India will organize the first-of-its-kind National Conference on Cold water Fisheries in Srinagar.
- The Ministry of Housing & Urban Affairs (MoHUA) hosted the AMRUT Mitra Mahotsav, a national gathering that celebrated the leadership of women Self-Help Groups (SHGs)- AMRUT Mitra's in strengthening urban water services under AMRUT 2.0.
- Union Minister of Jal Shakti Launches Sujal Gaon ID, Unique IDs for mapping Rural Piped Water Supply Schemes.
- India is establishing the world's first Autonomous Maritime Shipbuilding and Systems Centre at Juvvaladinne fishing harbour in Nellore district, Andhra Pradesh, developed by Mumbai-based Sagar Defence Engineering to strengthen indigenous maritime and defence manufacturing capabilities.

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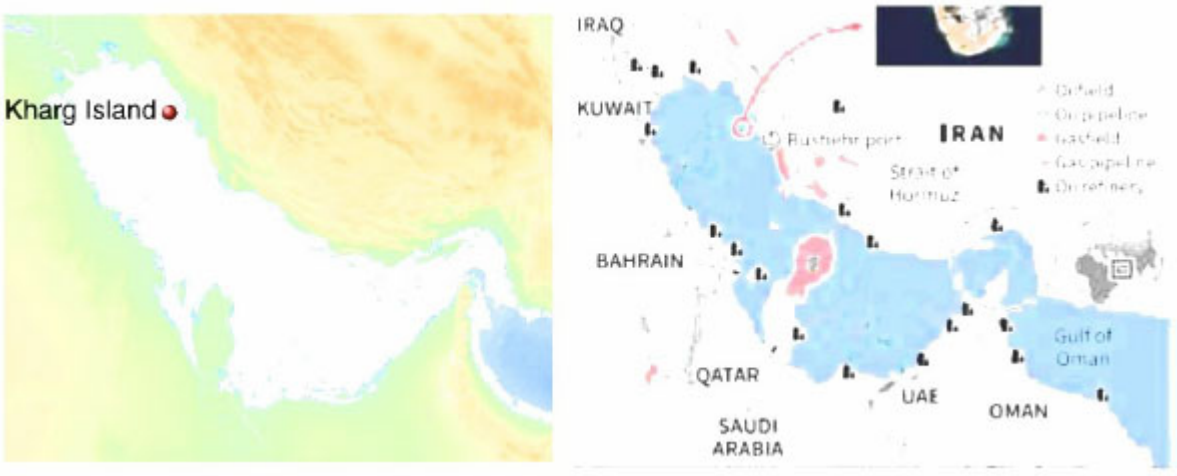
15-03-2026

PRELIMS ARTICLES:

1. Kharg Island:

Context: Mr. Trump said U.S. forces on Friday "obliterated" targets on Iran's Kharg Island, which is home to the primary terminal that handles the country's oil exports.

About Kharg Island:



- Kharg Island is a continental coral outcrop island of Iran located in the Persian Gulf.
- It lies about 25 km off the Iranian coast and around 483 km northwest of the Strait of Hormuz.
- The island is administered by Bushehr Province of Iran.
- Kharg Island handles nearly 90% of Iran's oil exports and has storage capacity of about 30 million barrels, making it strategically vital.
- It has been an important trading post for centuries.
- The island was controlled by the Portuguese Empire during the 16th-17th centuries.
- Later it became part of the Dutch colonial empire in the 18th century.

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- Modern oil terminal development began in the 1960s under Mohammad Reza Shah Pahlavi in partnership with Amoco.
- The surrounding waters are deep enough for large oil tankers, enhancing its export capacity.
- It is one of the few islands in the Persian Gulf with its own natural freshwater supply.

2. Jnanpith Award:

Context: Lyricist and author Vairamuthu has been selected for the Jnanpith Award, the nation's highest literary honour. He is the third Tamil literary figure to receive the award, after a gap of 24 years. He won the Sahitya Akademi Award in 2003 for Kallikattu Ithikasam.

About Jnanpith award:

- It is India's highest literary honour.
- Its name has been taken from Sanskrit words Jnana and Pitha which means knowledge-seat.
- It was instituted in 1961 by Bharatiya Jnanpith trust founded by the Sahu Shanti Prasad Jain family.
- The Award is open for only Indian citizens and is given annually.
- It is given to those who write in any 22 official languages of India mentioned in VIII Schedule of the Constitution of India and English.
- Prior to 1982, the award was only given for a single work by a writer. But after 1982, the award is given for lifetime contribution to Indian literature.
- The award carries a cash prize of 11 lakh rupees, a citation plaque and a bronze replica of Saraswati.

3. Essential Commodities Act:

Context: As the blockade of the Strait of Hormuz exposed the vulnerability of India's supply chain for cooking gas, the majority of which is imported, the Union government invoked the Essential Commodities Act, 1955.

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About Essential Commodities Act:

- **Context:** Disruptions in the Strait of Hormuz exposed India's vulnerability in cooking gas supply, prompting the Union government to invoke the Essential Commodities Act to ensure availability and regulate distribution of LPG and natural gas.
- **About the Essential Commodities Act:** Enacted in 1955, the Act empowers the government to control production, supply, and distribution of essential goods such as drugs, fertilizers, foodstuffs, edible oils, fuels, and seeds to ensure availability at fair prices.
- **Powers under Section 3:** Under Section 3, the government can regulate production, fix prices, impose stock limits, control storage and transport, restrict sales, and prevent hoarding and black marketing to ensure equitable distribution.
- **Past Use of the Act:** The Act has previously been invoked to address shortages of wheat, sugar, and pulses and was used during the COVID-19 lockdown to prevent hoarding and profiteering of essential goods.
- **Reason for Invocation Now:** Escalating tensions involving Iran and attacks on shipping in the Strait of Hormuz disrupted LPG supply routes, causing panic among Indian consumers due to heavy reliance on imports through this route.
- **India's LPG Dependence:** India produced about 12.8 million tonnes of LPG in 2024-25, meeting only 41% of its total consumption of 31.3 million tonnes, with about 90% of imports passing through the Strait of Hormuz.
- **Impact of Pradhan Mantri Ujjwala Yojana:** The scheme expanded LPG access in India from 62% of households in 2016 to nearly 100%, significantly increasing demand for cooking gas.
- **Natural Gas Consumption:** India consumes about 189 million metric standard cubic meters of natural gas per day, with 52% produced domestically and around 25% imported from the Persian Gulf.

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- **Order to Increase LPG Production:** On March 5, the government directed oil refineries to divert propane and butane streams toward LPG production instead of petrochemical manufacturing to boost domestic output.

4. NavIC satellite:

Context: The last atomic clock aboard the Indian Regional Navigation Satellite System (IRNSS)-IF has failed, the Indian Space Research Organisation has said in a statement. This further weakens the country's indigenous "GPS" system, called NavIC.

More about:

- **Role of Atomic Clocks in Satellites:** Atomic clocks are crucial in navigation satellites because they provide highly accurate timing required for positioning, navigation, and timing (PNT) services used by satellite navigation systems.
- **NavIC and IRNSS System:** India's regional navigation system Navigation with Indian Constellation is based on the Indian Regional Navigation Satellite System, whose satellites were launched between 2013 and 2018.
- **Adoption for Indian Standard Time:** The Union government has encouraged Indian industries, especially electronics and computing sectors, to rely on NavIC signals for determining Indian Standard Time.
- **Global Navigation Benchmark:** The global reference system for satellite navigation remains the Global Positioning System operated by the United States, which uses about 30 satellites.
- **Failure of IRNSS-IF Atomic Clock:** The onboard atomic clock of IRNSS-IF stopped functioning on 13 March 2026, though the satellite will still operate for limited applications such as one-way broadcast messaging services.
- **Mission Life Completion:** IRNSS-1F, launched in March 2016 by Indian Space Research Organisation, completed its 10-year design mission life on 10 March 2026.

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- **NavIC Satellite Launch History:** Since 2013, nine IRNSS satellites have been launched, of which eight successfully reached their intended orbit, with the last satellite IRNSS-11 launched in 2018.
- **Coverage of NavIC:** NavIC provides navigation services within India and up to about 1,500 km beyond its borders, unlike global systems that offer worldwide coverage.
- **Strategic Importance:** NavIC is considered a strategic fallback system to ensure navigation capability in case India loses access to foreign satellite systems during geopolitical conflicts.
- **RTI Revelation on Satellite Failures:** In July 2025, ISRO disclosed through an RTI response that five NavIC satellites had become completely defunct because all three atomic clocks in each had failed.
- **Partial Failures in Other Satellites:** Among the remaining satellites with functioning clocks, two of the three clocks had failed in one satellite, reducing system reliability.
- **Supplier of Atomic Clocks:** The original atomic clocks used in the NavIC satellites were imported from SpectraTime.
- **Operational Satellites Remaining:** According to Jitendra Singh, only four satellites were earlier capable of providing navigation services, which has now dropped to three after the IRNSS-IF clock failure.
- **Indigenisation of Atomic Clocks:** For future satellites replacing ageing ones, ISRO has decided to use indigenously developed rubidium atomic clocks.
- **New NavIC Satellite Series:** A replacement satellite, NVS-01, launched in May 2023, carries India's first indigenous rubidium atomic clock.
- **Launch Failure in Replacement Fleet:** Another satellite, NVS-02, launched in January 2025, failed to reach its intended orbit.
- **Future Satellite Launch Plans:** ISRO has announced plans to launch at least three additional satellites by the end of 2026 to replace the ageing and non-functional IRNSS satellites.

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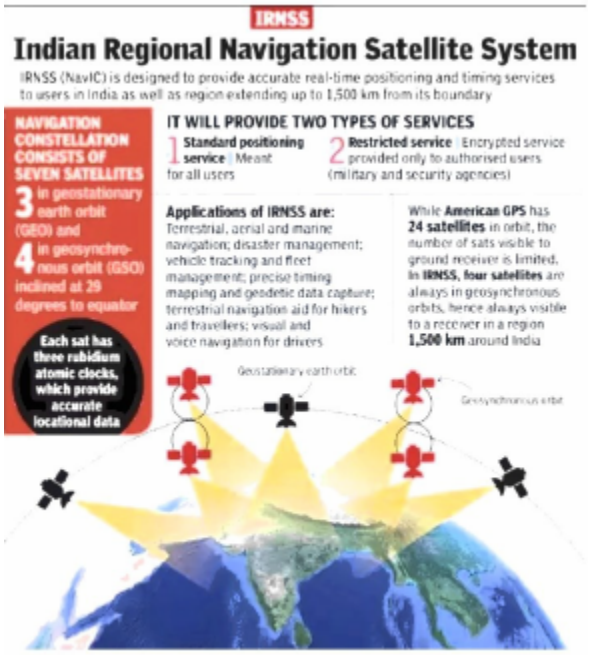
About NavIC satellite:



- Navigation with Indian Constellation is India's regional satellite navigation system developed under the Indian Regional Navigation Satellite System.
- NavIC is designed with a constellation of 7 satellites and a network of ground stations operating 24×7.
- A total of eight IRNSS satellites have been launched, though only seven remain operational.
- The constellation includes three satellites in geostationary orbit and four in geosynchronous orbit.
- The first satellite, IRNSS-1A, was launched on 1 July 2013.
- The eighth satellite, IRNSS-II, was launched in April 2018.
- After the launch of IRNSS-IG, the system was renamed NavIC in 2016 by Narendra Modi.
- NavIC was recognised by the International Maritime Organization as part of the World-Wide Radio Navigation System for operation in the Indian Ocean Region in 2020.
- NavIC is used for terrestrial, aerial, and marine navigation services.

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- It supports disaster management and emergency response operations.
- It enables vehicle tracking and fleet management, especially in the mining and transportation sectors.
- NavIC signals can be integrated with mobile phones and navigation devices.
- It provides precise timing services for infrastructure such as ATMs and power grids.
- It is also used for mapping, surveying, and geodetic data collection.

5. Designing Innovative Solutions for Holistic Access to Justice (DISHA) Scheme:

Context: A Regional Workshop on Tele-Law Programme Activities under the Designing Innovative Solutions for Holistic Access to Justice (DISHA) Scheme of the Department of Justice, Ministry of Law and Justice, Government of India, was held today at Kalaivanar Arangam, Chennai.

About Tele-Law programme:

- The Tele-Law Programme was launched in 2017 by the Department of Justice under the Ministry of Law and Justice.
- It is an e-interface platform that provides legal advice and consultation at the pre-litigation stage to improve access to justice.
- The programme aims to "Reaching the Unreached" by connecting marginalised people with legal experts.
- It links beneficiaries with panel lawyers through video conferencing or telephonic facilities at Common Service Centres located at the panchayat level.
- Legal consultation can also be accessed through the Tele-Law Mobile App.
- A Panel Lawyer is a practising advocate selected by the Department of Justice and CSC-eGovernance Services or registered with the State/District Legal Services Authority.
- Legal advice under Tele-Law is available to all citizens.

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- Free legal advice is provided to eligible persons under Section 12 of the Legal Services Authorities Act.
- Beneficiaries eligible for free legal aid include women, children, Scheduled Castes, Scheduled Tribes, victims of trafficking, mentally ill and differently-abled persons.
- Other eligible groups include victims of natural disasters or ethnic violence, workers in the unorganised sector, industrial workers, undertrials, and low-income individuals.
- For others not eligible for free legal aid, a nominal consultation fee of 230 per session is charged.
- Legal advice can be sought on family disputes such as dowry, divorce, and domestic violence cases.
- It also covers sexual harassment, sexual abuse, and workplace harassment issues.
- The service provides guidance on maintenance rights of women, children, and senior citizens.
- Citizens can seek advice regarding property and land rights disputes.
- It also covers issues related to equal wages for men and women, maternity benefits, and prevention of female foeticide.

About Designing Innovative Solutions for Holistic Access to Justice (DISHA) Scheme:

- It was launched in 2021 by the Department of Justice, Ministry of Law and Justice for a period of 5 years (2021-2026).
- It aims to secure "Justice" to the people of India as enunciated in the Preamble & under Articles 39A, 14 and 21 of the India Constitution.
- It widens the outreach of Tele-Law, Pro Bono Legal Services (Nyaya Bandhu) & Legal Literacy and Legal Awareness programmes both qualitatively and quantitatively.

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MAINS SPECIFIC ARTICLES:

1. How did the SC read the OBC creamy layer test?: (GS paper 2)

Context: On March 11, the Supreme Court ruled that parental income alone cannot be the sole determinant of whether an Other Backward Classes (OBC) candidate falls under the 'creamy layer* category especially in cases where parents work in PSUs or private employment and post equivalence with government services has not been established.

More about:

- **Origin of the Creamy Layer Concept:** The concept of the creamy layer emerged from the 1992 judgment in the Indra Sawhney v. Union of India, which upheld OBC reservations but mandated exclusion of socially and economically advanced sections within OBCs.
- **DoPT Guidelines on Creamy Layer:** In September 1993, the Department of Personnel and Training issued an Office Memorandum outlining categories of OBC candidates who would be excluded from reservation benefits.
- **Categories Automatically Excluded:** Children of persons holding high constitutional positions such as the President of India and Vice-President of India, judges of the Supreme Court of India and High Courts, directly recruited Group A and Group B officers, and senior armed forces or paramilitary officers are treated as creamy layer.
- **Application to PSU and Private Sector Employees:** The 1993 OM also introduced an income/wealth test for OBC candidates whose parents were professionals, traders, landowners, or employees in PSUs where post equivalence with government services had not yet been established.
- **Income/Wealth Test Explained:** According to the 1993 OM, an OBC candidate is considered a creamy layer if parental income exceeds 1 lakh annually for three consecutive years or if family wealth exceeds the limit under the Wealth Tax Act.
- **Revision of Income Limit:** The income threshold has been revised several times and currently stands at 28 lakh per year, last updated in 2017.

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- **Income Sources Considered:** The 1993 OM clarified that income from salaries and agricultural land should be excluded, and only income from sources such as property, business, or capital gains should be counted for the creamy layer test.
- **2004 DoPT Clarificatory Letter:** In October 2004, the DoPT issued a clarification suggesting that salary income should also be considered for OBC candidates whose parents work in PSUS without established post equivalence, creating confusion in the application of the income test.
- **Government's Position in Court:** In a 2020 affidavit before the Supreme Court, the DoPT referred to both the 1993 OM and the 2004 letter but did not clearly explain when salary income should be included in the creamy layer calculation.
- **Supreme Court Interpretation:** The Court ruled that the income/wealth test functions as a residual filter and reaffirmed that salary and agricultural income were intentionally excluded in the original 1993 OM.
- **Issue of Discrimination:** The Court observed that including salary income for PSU or private employees but excluding it for government employees created "hostile discrimination" between similarly placed OBC candidates.
- **Equality Principle Highlighted:** The judgment emphasised that denying reservation benefits based solely on salary income without considering the nature of the post violates the constitutional principle of equality.
- **Beneficiaries of the Judgment:** The ruling benefits children of PSU employees and private sector workers who were earlier excluded from OBC reservation benefits due to incorrect application of the income test.
- **Immediate Relief to Candidates:** Around 100 candidates who appeared for civil service examinations since 2015 and were denied OBC quota benefits will receive relief under the judgment.

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- **Implementation Direction:** The Court directed the government to create supernumerary posts where necessary so that eligible non-creamy layer OBC candidates can receive the reservation benefits previously denied to them.

Quick Bites:

- Mayank Chakraborty has become India's 94th Grandmaster and the first from Assam. UAE suspends limited operations at Fujairah. Fujairah City is the capital of the emirate of Fujairah in the United Arab Emirates. It is the seventh-largest city in the UAE, located on the Gulf of Oman. It is the only Emirati capital city on the UAE's east coast.
- Researchers have rediscovered "Myiophanes kempi", a rare cave-dwelling assassin bug, in limestone caves of the Andaman Islands after nearly a century. The insect had not been recorded since its first scientific description in 1924.
- Researchers from Gauhati University have discovered a new plant species named "Osbeckia zubeengargiana" in Assam. The discovery was made in the grasslands of Manas National Park. Pi Day is celebrated every year on 14 March to honour the mathematical constant a (pi), one of the most important numbers in mathematics. The date 3/14 in the American format corresponds to the first three digits of pi, 3.14.
- The International Day of Mathematics (IDM) is observed annually on 14 March to celebrate the importance of mathematics in everyday life, science, and technology. The theme for the International Day of Mathematics (IDM) 2026 is "Mathematics and Hope".

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16-03-2026

PRELIMS ARTICLES:

1. Minimum support price (MSP):

Context: The Supreme Court has asked the Union government to revisit its existing policy framework and explore a better substitute under which farmers are incentivised to diversify from conventional crops such as wheat and paddy to pulses.

More about:

- **Supreme Court Directions**
  - The Supreme Court of India asked the Centre to review agricultural policies and diversify crops.
  - It directed the government to convene a meeting of stakeholders to address issues related to pulse cultivation.
- **Issues Highlighted by the Court**
  - Lack of incentivised Minimum Support Price (MSP) that covers the production cost of pulses for small and medium farmers.
  - Absence of a guaranteed and timely sale mechanism for pulse crops.
  - Need to fix the cost price of imported yellow peas so that domestic pulse producers are not affected.
- **Bench Observations**
  - The Bench was headed by Surya Kant, the Chief Justice of India.
  - It asked the Centre to create a framework to make pulse cultivation profitable for farmers.
  - Ministries of Agriculture, Commerce, and Consumer Affairs should work together with subject experts and ground-level practitioners.

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- **Call for Agricultural Diversification**
  - The court stressed the need for diversification away from excessive paddy cultivation.
  - It noted that North India produces very large quantities of paddy, which may not always be necessary except for export.
  - The court suggested diverting some land to pulse cultivation.
- **Suggestion to Form Committees**
  - The court advised the government to constitute expert committees including people with practical experience in farming communities.
  - Experts should understand the psychology and challenges faced by farmers.
- **Petition Before the Court**
  - The case was based on a petition filed by Kisan Mahapanchayat.
  - The NGO sought restrictions on the import of yellow peas to protect domestic farmers.
- **Government's Response**
  - The Centre was represented by N. Venkataraman, Additional Solicitor-General.
  - He said pulse production declined from 273 lakh tonnes (2021-22) to 242 lakh tonnes (2023-24) due to crop disease.
  - This decline forced the government to import yellow peas to meet demand.
- **Court's Key Concern**
- The court stated the core issue is the lack of guaranteed MSP for pulses.
- It pointed out that MSP exists for wheat, rice, paddy, and millets, and similar price assurance should be ensured for pulse farmers.

About Minimum support price (MSP):

- It is the price at which the government purchases crops from the farmers, to insure farmers against any sharp fall in farm price

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- It is announced by the Government on the basis of the recommendation of the Commission for Agricultural Costs and Prices (CACP), at the beginning of the sowing season.
- Government of India fixes Minimum Support Price (MSP) for 22 mandated agricultural crops and sugar cane.
- **Kharif Crops:** Paddy, Jowar, Bajra, Ragi, Maize, Tur (Arhar), Moong, Urad, Groundnut, Sunflower Seed, Soyabean (Yellow), Sesamum, Nigerseed, Cotton.
- **Rabi Crops:** Wheat, Barley, Gram, Masur (Lentil), Rapeseed & Mustard, Safflower.
- **Commercial Crops:** Copra, Jute.

2. Removal of Chief Election Commissioner (CEC):

Context: Two days after 193 Opposition MPs submitted notice in both Houses of Parliament seeking the removal of Chief Election Commissioner (CEC) Gyanesh Kumar, the Trinamool Congress's Rajya Sabha member Derek O'Brien said that if the notice was not taken up, it would raise doubts about a "tacit understanding" between the CEC and the Executive.

About Chief Election Commissioner (CEC):

Appointment of the CEC

- The CEC and Election Commissioners are appointed by the President of India.
- After the 2023 law, the appointment is made based on the recommendation of a selection committee consisting of:
- Prime Minister
- Leader of Opposition in Lok Sabha (or leader of the largest opposition party)
- A Union Cabinet Minister nominated by the Prime Minister.

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Removal of the Chief Election Commissioner

- The Chief Election Commissioner enjoys security of tenure similar to that of a judge of the Supreme Court of India.
- The CEC can only be removed by the President through a process similar to the impeachment of a Supreme Court judge.

Grounds for Removal

- The CEC can be removed only on the following grounds:
  - Proved misbehaviour
  - Incapacity

Procedure for Removal

- A motion for removal must be introduced in either House of Parliament.
- The motion must be supported by:
  - A special majority in Lok Sabha and Rajya Sabha.
- Special majority means:
  - Majority of the total membership of the House, and
  - Two-thirds of members present and voting.
- After Parliament passes the motion, the President orders the removal of the CEC.

Removal of Other Election Commissioners

- Election Commissioners do not enjoy the same protection as the CEC.
- They can be removed by the President only on the recommendation of the Chief Election Commissioner.

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Key Features (Important for Prelims)

- CEC removal process - Same as removal of a Supreme Court judge.
- EC removal = President + recommendation of CEC.
- Ensures independence and impartiality of the Election Commission.

3. Sangita Kalanidhi award:

Context: The 100th Conference and Concerts of the The Music Academy, Chennai, beginning in December this year, will be marked by the conferment of the Sangita Kalanidhi award on renowned veena player Jayanthi Kumaresh. Bharatanatyam dancer Narendra G. will receive the Nritya Kalanidhi award.

About Sangita Kalanidhi award:

- It is considered the highest award in the field of Carnatic music.
- The award is conferred by the Madras Music Academy.
- The award comprises a gold medal and a birudu patra (citation).
- It emerged as an offshoot of the All India Congress Session held in Madras in December 1927.

4. Model code of conduct:

Context: Model Code of Conduct kicks in as five states go for polls.

About Model code of conduct:

- Model Code of Conduct (MCC) is a consensus-based set of guidelines agreed upon by political parties to regulate their behaviour during elections.
- It assists the Election Commission of India in fulfilling its mandate under Article 324 of the Constitution of India to conduct free and fair elections.

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- The MCC comes into force from the announcement of the election schedule and remains effective until the declaration of results.
- During the MCC period, governments cannot announce financial grants, launch new projects, promise infrastructure works, or make ad hoc government appointments.
- The MCC does not have statutory backing, but it is effectively enforced by the Election Commission.
- Certain violations of MCC can be addressed through laws such as the Indian Penal Code 1860, Code of Criminal Procedure 1973, and Representation of the People Act 1951.
- **Evolution:** The first election code was introduced in Kerala in 1960 before Assembly elections to regulate campaign activities like rallies and speeches.
- In 1974, the Election Commission of India formally released the Model Code of Conduct and created district-level bodies for monitoring.
- Before 1977, the MCC applied mainly to political parties and candidates.
- In 1979, the MCC was revised to include guidelines for ruling parties, after concerns about misuse of government machinery and public funds during elections.
- The revised MCC contained seven parts, including rules for general conduct, public meetings, processions, polling day behaviour, polling booths, and conduct of the ruling party.
- The MCC has been revised several times, with the last major revision in 2014.
- Under general conduct, political parties cannot use religion, caste, community, or language to create enmity or tension.
- Section 123(3) of the Representation of the People Act, 1951 also prohibits appeals to religion, caste, race, or community for electoral gains.
- Political criticism must be limited to policies, programmes, and performance, avoiding personal attacks.

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- For meetings and processions, parties must inform local authorities and coordinate routes to avoid clashes.
- Burning effigies or carrying offensive representations of opponents is prohibited.
- On polling day, only voters and authorised persons with valid passes can enter polling booths.
- Party workers must carry identity badges, and voter slips must be plain white paper without party symbols or candidate names.
- The Election Commission appoints observers to monitor elections and address complaints.
- Ministers and ruling parties cannot combine official visits with campaign activities or use government resources for election purposes.

MAINS SPECIFIC ARTICLES:

1. Why is the U.S. investigating India?: (GS Paper 2)

Context: Over the last week, the U.S. government has launched two investigations against India and several other countries in a bid to find some form of actions or policies that "are unreasonable or discriminatory and burden or restrict U.S. commerce".

More about:

- **Background of U.S. Tariff Decision**
  - The Supreme Court of the United States ruled on February 20 against the use of the International Emergency Economic Powers Act (IEEPA) by Donald Trump to impose reciprocal tariffs.
  - India had faced 50% tariffs (Aug 2025-Feb 6, 2026) which were later reduced to 25%.
- **Temporary Global Tariff**
  - After the ruling, the U.S. imposed a 10% tariff on imports from all countries for 150 days.
  - This was implemented under Trade Act of 1974 (Section 122).
  - The U.S. threatened to increase the tariff to 15%, but this has not yet happened.

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- **First USTR Investigation**
  - On March 11, the Office of the United States Trade Representative (USTR) launched an investigation against 16 economies including India.
  - The probe was under Section 301(b) of the Trade Act of 1974.
  - It examines whether countries are exporting goods to the U.S. using excess manufacturing capacity that harms American businesses.
- **Countries Under Investigation**
  - Countries include China, the European Union, Singapore, Switzerland, Norway, Indonesia, Malaysia, Cambodia, Thailand, Korea, Vietnam, Taiwan, Bangladesh, Mexico, Japan, and India.
- **Allegations Against India**
  - The U.S. stated India had a $58 billion bilateral trade surplus in 2025 (India estimates it at $42.2 billion).
  - Sectors with global surplus include textiles, health goods, construction materials, and automotive products.
  - The U.S. also alleged excess capacity in solar modules, petrochemicals, and steel in India.
- **Second USTR Investigation**
  - Another investigation was launched a day later against 60 countries including India.
  - It examines whether these countries have taken adequate steps to prevent imports produced using forced labour.
  - This probe is also under Section 301(b) of the Trade Act of 1974.
- **Importance of Section 301**
  - Section 301 allows the U.S. to respond to unfair trade practices that harm U.S. commerce.
  - Experts say the provision could allow the U.S. to impose new tariffs after the current 150-day 10% tariff period ends.

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- **India's Official Response**
  - The Indian government has not yet made a public response.
  - However, the European Commission has demanded clarity from the U.S. regarding the investigation and warned of a firm response if commitments are violated.
- **Impact on Indian Industries**
  - Existing 50% U.S. tariffs on steel, aluminium, auto and auto components continue.
  - The Engineering Exports Promotion Council of India said the investigations may lead to new tariffs in the future.
  - The Confederation of Indian Textile Industry warned that the textile sector faces uncertainty due to tariff developments and West Asia tensions.
- **Industry and Expert Views**
  - Ravi Sam of Texprocil said there is no immediate need for panic as investigations take time.
  - Trade expert and former DGFT Ajay Srivastava echoed that the impact will only be clear after the investigations conclude.

Quick Bites:

➢ Botanists from Gauhati University have discovered a new plant species in the grasslands of Manas National Park in Assam and named it after renowned Assamese singer Zubeen Garg. The newly identified plant has been named "Osbeckia zubeengargiana" and belongs to the Melastomataceae family.

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17-03-2026

PRELIMS ARTICLES:

1. Indian Forest and Wood Certification Scheme (IFWCS):

Context: Andhra Pradesh Forest Development Corporation (APFDC) is set to become the first agency in the country to receive the Government of India's Pramaan certification under the Indian Forest and Wood Certification Scheme (IFWCS), a voluntary market-based initiative aimed at promoting sustainable management of forest and agroforestry resources.

More about:

- Officials at the Indian Institute of Forest Management (IIFM), Bhopal, Madhya Pradesh, the scheme's operating agency, told that the certificate will soon be issued to APFDC for products such as eucalyptus cultivated outside forest areas in Andhra Pradesh.
- The scheme encourages sustainable forest management and promotes market incentives for certified products while facilitating linkages with domestic and international markets.

About Indian Forest & Wood Certification Scheme (IFWCS):

- IFWCS aims to offer an alternative to private foreign certification agencies that have been operating in India.
- It seeks to ensure greater integrity, transparency, and credibility in certifying sustainable forest management and wood-based products.
- The scheme will be overseen by the Indian Forest and Wood Certification Council, which will act as a multistakeholder advisory body.

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- Indian Institute of Forest Management, Bhopal will act as the scheme operating agency and will be responsible for overall management of the Scheme.
- The National Accreditation Board for Certification Bodies under the Quality Council of India will accredit the certification bodies which will carry out independent audits and assess adherence of various entities on the standards prescribed under the scheme.

About Pramaan certification:

- The Pramaan (Programme for Recognition and Accreditation of Sustainable Management Practices for Agroforestry and Natural Forestry Resources), was launched in 2023 by the Ministry of Environment, Forest and Climate Change.
- IFWCS "PRAMAAN" certifications are based on a comprehensive framework of criteria and indicators to assesses forest divisions, plantations, and agroforestry systems against globally recognised sustainability standards while being tailored to the Indian context. There are three types of certifications under IFWCS "PRAMAAN":
  1. Forest Management (FM) Certification: For recorded forest areas and forest plantations, in accordance with the Indian Forest Management Standard
  2. Trees Outside Forests (TOF) Management Certification: For agroforestry systems and private plantations in accordance with the Trees Outside Forests (Management) Standard
  3. Chain of Custody (CoC) Management Certification: Ensures traceability of timber and non-timber forest products at each step of production, from its source to the customer.

2. Vela carli:

Context: Crab in Silent Valley found displaying both male and female biological traits.

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More about:

- A tiny freshwater crab showing both male and female traits has been discovered in the Silent Valley National Park in the Western Ghats.
- The crab belongs to the species Vela carli and was found in tree holes inside the forest.
- Researchers observed the dual-sex condition in three crabs discovered in the park.
- Vela carli is an endemic freshwater crab found only in the forests and streams of the Central Western Ghats.
- The crabs exhibited Gynandromorphy, a rare condition where an organism shows both male and female characteristics.
- This is the first recorded instance of gynandromorphy in the species Vela carli.
- It is also the first such case reported in the freshwater crab family Gecarcinucidae.

3. Sahitya Akademi Awards:

Context: Sahitya Akademi has announced today its annual Sahitya Akademi Awards in 24 Indian languages recognised by it.

About Sahitya Academy awards:

- **About the Award**
  - Sahitya Akademi Award is a literary honour conferred annually by the Sahitya Akademi.
  - It is awarded for the most outstanding books of literary merit published in 24 major Indian languages.
  - These include the 22 languages in the Eighth Schedule of the Constitution, along with English and Rajasthani.
  - The award is given to books first published during the five years preceding the year of the award.

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- **Purpose**
  - To recognise and promote excellence in Indian literature and writing.
  - To acknowledge new literary trends and creative contributions in different languages.
- **Year of Institution:** The award was instituted in 1954 by the Sahitya Akademi.
- **Prize:** The award consists of an engraved copper plaque, a shawl and ₹1 lakh prize money.
- **Criteria for Awardee**
  - The author must be an Indian national.
  - The award is given only to living writers and not awarded posthumously.
  - Eligible works must be outstanding literary contributions in their respective language.
  - If two books have equal merit, factors like the author's overall literary contribution and reputation are considered.
- **Key Features:** It is the second-highest literary honour in India, after the Jnanpith Award.
- Other Awards by Sahitya Akademi
  - Sahitya Akademi Bal Sahitya Puraskar - Awarded for significant contribution to children's literature.
  - Sahitya Akademi Yuva Puraskar - Awarded to authors aged 35 years or below for outstanding literary works.

Winners of 2025 award:

Language	Tile and Gre	Name of the Author
Assamese	Acne Kadi Kholar (Novel)	Devabra Das
Bengali	Shrestha Key	Prasun Bandyopadhyay
Bodo	Dwngnwi Lama Mwnse Gathwn (Novel)	Sahaisuli Brahma
Dogri	Thakur Satsayie (Poetry, Couplets)	Khajur Singh Thakur
English	Crimson Spring (Novel)	Navtej Sarna
Gujarati	Bhattkhadaki (Poetry)	Yogesh Vaidya
Hindi	Jeete Jee Allahabad (Memoir)	Mamta Kalia
Kannada	Dada Seerisu Tande (Short Stories)	Amaresh Nugadoni
Kashmiri	Najdavanek'y Pot Aalav (Poetry)	Ali Shaida
Konkani	Konkani Kavyem: Rupani Ani Rupakam (Essays)	HenryMendonca (H.M. Pernal)

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Maithili	Dhatri Paat San Gamm (Memoir)	Mahendra
Malayalam	Maayamaya (Novel)	N. Prabhakaran
Manipuri	Kanglamdriba Eephut (Short Stories)	Haobam Nalini
Marathi	Kalyanilya Resha (Autobiography)	Raju Baviskar
Nepali	Napal Paramparik Sanskriti Ra Sabhyata Ko Dukuti (Essays)	Prakash Bhaattarai
Odia	Padapurana (Poetry)	Girijakumar Baliyar Singh
Punjabi	Safety Kit (Stories)	Jinder
Rajasthani	Bharkhama (Stories)	Jitender Kumar Soni
Sanskrit	Prasthanacatustaye Brahmaghosah (Poetry)	Mahamahopadhyaya Sadhu Bhadreshdas
Santali	Mid Birna Chenne Saon Inag Sagai (Short Stories)	Sumitra Soren
Sindhi	Waghoo (Stories)	Bhagwan Atlani
Tamil	Thamiz Sirukathaiyin Thadangal (Literary Criticism)	Sa. Tamilselvan
Telegu	Animesha(Poetry)	Nandini Sidha Reddy
Urdu	Safar Jaari Hai (Poetry)	Pritpal Singh Betab

4. Oscar awards:

Context: The 98th Academy Awards, more popularly known as the Oscars, were held on 16th March.

About Oscar awards:

- The Oscar Awards, also known as the Academy Awards, are an annual awards ceremony honouring excellence in the film industry.
- The awards are presented by the Academy of Motion Picture Arts and Sciences (AMPAS), a professional honorary organization of over 9,000 members.
- The first Oscars ceremony was held in 1929.
- The awards are now widely considered to be the most prestigious awards in the film industry. It is a peer-voted award.
- Nominees and winners are chosen by AMPAS members who work in various branches of the film industry, including actors, directors, writers, and producers.

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- Awards are given out in various categories, including Best Picture, Best Director, Best Actor, Best Actress, Best Supporting Actor, Best Supporting Actress, and many more.

Awards winners:

Award Category	Winner
Best Picture	One Battle After Another
Best Director	Paul Thomas Anderson - for One Battle After Another
Best Adapted Screenplay	Paul Thomas Anderson - for One Battle After Another
Best Actor	Michael B. Jordan
Best Actress	Jessie Buckley for Hamnet
Best Supporting Actor	Sean Penn
Best Supporting Actress	Amy Madigan - for Weapons
Best Cinematography	Autumn Durald Arkapaw - for Sinners
Best Casting	One Battle After Another

5. Gulf of Oman and Persian Gulf:

Context: The Indian Navy has deployed warships to escort Indian-flagged merchant vessels transiting through the Persian Gulf region, according to official sources.

More about:

- Three Indian Navy ships have escorted the Indian-flagged merchant ships Shivalik, Nanda Devi, and Jag Laadki from the Gulf of Oman after they crossed the Strait of Hormuz.
- The warships ensured the safe transit of vessels through vulnerable waters.
- Warships were operating in the region under Operation Sankalp, a mission aimed at safeguarding merchant shipping and protecting India's maritime interests in the region.
- Launched in June 2019, Operation Sankalp ensures the safe passage of Indian-flagged vessels through critical sea lanes, and saw action, including during the Houthi attacks.

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About Persian Gulf:

- Persian Gulf is an arm of the Arabian Sea located between southwestern Iran and the Arabian Peninsula.
- Countries bordering the Persian Gulf include Iraq, Kuwait, Saudi Arabia, Bahrain, Qatar, United Arab Emirates, Oman (Musandam exclave) and Iran.
- The Persian Gulf is connected to the Gulf of Oman in the east through the Strait of Hormuz.
- Countries around the Persian Gulf are among the world's major producers of crude oil and natural gas.
- Iran, Iraq, Kuwait, United Arab Emirates and Saudi Arabia are members of the Organization of the Petroleum Exporting Countries.
- United Arab Emirates, Bahrain, Saudi Arabia, Oman, Qatar and Kuwait are members of the Gulf Cooperation Council.

About Gulf of Oman:

- The Gulf of Oman, also known as the Gulf of Makran, is the western extension of the Arabian Sea in the Middle East.
- It forms the only maritime entrance to the Persian Gulf from the Indian Ocean.

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- The Gulf of Oman connects the Arabian Sea to the Strait of Hormuz, which leads into the Persian Gulf.
- It is bordered by Iran and Pakistan in the north, Oman in the south, and United Arab Emirates in the west.
- Important ports along the gulf include Sohar, Al Khaburah, Muscat and Sur in Oman, and Jask and Chabahar in Iran.
- Some fishing occurs in the Gulf of Oman, but its main importance lies in being a major international shipping route for oil trade.
- The gulf is strategically important because it provides the only sea route linking the Persian Gulf to global markets.
- Around one-third of the world's oil exports pass through the Strait of Hormuz and the Gulf of Oman, making it a critical global energy corridor.

6. 24 Speed Post:

Context: Department of Posts to Launch 24 Speed Post' for Next-Day Guaranteed Delivery in Six Major Cities.

More about:

- India Post has launched 24 Speed Post, offering next-day guaranteed delivery for urgent and time-sensitive consignments.
- In the first phase, the service will be available in Delhi, Mumbai, Chennai, Kolkata, Bengaluru and Hyderabad.
- The 24 and 48 Speed Post services will ensure D+1 and D+2 delivery timelines respectively.
- The service uses dedicated processing windows and priority air transmission for faster delivery.
- It includes OTP-based secure delivery to ensure safe receipt of consignments.
- Customers will get end-to-end tracking with SMS alerts for shipment updates.

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- Business customers will have access to a Buy Now Pay Later (BNPL) facility.
- The service also offers free pickup for bulk bookings.
- Businesses can use API integration and centralized billing systems for logistics management.
- A money-back guarantee will be provided in case of delivery delays, strengthening premium express delivery services of India Post.

7. Nagoya protocol:

Context: The Ministry of Environment, Forest and Climate Change (MoEFCC), in collaboration with the National Biodiversity Authority (NBA), has submitted India's First National Report (NRI) on the implementation of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) to the Secretariat of the Convention on Biological Diversity (CBD).

About Nagoya Protocol:

- Nagoya Protocol on Access and Benefit Sharing is a supplementary agreement to the Convention on Biological Diversity.
- It was adopted on 29 October 2010 in Nagoya, Japan.
- The protocol entered into force on 12 October 2014, after the 50th instrument of ratification was deposited.
- It establishes a transparent legal framework for fair and equitable sharing of benefits arising from the use of genetic resources.
- India ratified the Nagoya Protocol on Access and Benefit Sharing in 2012.
- The protocol applies to genetic resources covered under the Convention on Biological Diversity,
- It also covers benefits arising from the utilization of these genetic resources.
- The protocol includes traditional knowledge associated with genetic resources and ensures benefit sharing from their use.

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About Convention on Biological Diversity:

- The Convention on Biological Diversity (CBD) is a legally binding international agreement that came into force in 1993.
- It was the first global treaty to recognize biodiversity conservation as essential for human welfare.
- The CBD covers ecosystems, species, and genetic resources comprehensively.
- It was opened for signature at the Earth Summit 1992.
- The CBD Secretariat is located in Montreal.
- It operates under the United Nations Environment Programme.
- Almost all UN member states have ratified it, except the United States.
- The Conference of the Parties (COP) is the governing body and meets biennially to guide implementation.
- The CBD has three core objectives: conservation, sustainable use, and equitable benefit-sharing of biodiversity.

8. Matua Dharma Mela 2026:

Context: Union Home Minister and Minister of Cooperation, Shri Amit Shah, extends greetings to the Matua community on the occasion of Matua Dharma Mela marking 215th birth anniversary of Purna Brahma Shree Shree Harichand Thakur.

About Matua sect:

- Matuaism is a Hindu reform movement that originated around 1860 in present-day Bangladesh.
- It has a significant number of followers in Bangladesh and West Bengal, India.
- The movement emerged among the Namasudras, an avarna (outcaste) Bengali Hindu community.

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- It was founded by the followers of Harichand Thakur, whose teachings emphasised education and social equality.
- The Matua Mahasangha was formed before 1915 to organise followers of Harichand Thakur's philosophy.
- In the 1930s, the organisation was revived by Pramatha Ranjan Thakur, the great-grandson of Harichand Thakur.
- Pramatha Ranjan Thakur established an ashram at Labanchora.
- After the Partition of India in 1947, many Matua followers migrated to West Bengal,
- Pramatha Ranjan Thakur later founded Thakurnagar, which became the headquarters of the Matua Mahasangha.

MAINS SPECIFIC ARTICLES:

1. Belém as a test of a new model of forest finance: (GS paper 3)

- **Context - COP30 Climate Summit:** Chief climate discussions took place at COP30 in Belém, Brazil, focusing on protection of tropical forests and the role of indigenous communities in conservation.
- **Tropical Forest Forever Facility (TFFF)**
  - Tropical Forest Forever Facility is a global finance mechanism proposed by Brazil to reward countries for maintaining standing forests rather than only reducing deforestation.
  - The fund has secured over $5.5 billion in initial commitments, including $3 billion from Norway.
  - Unlike traditional grants, the facility is designed to generate financial returns and provide performance-based payments for long-term forest conservation.
  - At least 20% of payments are reserved for indigenous peoples and local communities involved in forest protection.

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- **Participation of Indigenous Communities**
  - More than 400 community leaders participated in consultations during the design of the TFFF. The mechanism aims to give indigenous and local communities both financial support and decision-making roles.
  - However, indigenous representatives currently lack voting rights in the fund's main governing bodies, raising concerns about limited decision-making power.
- **Criticism by Civil Society**
  - The Global Forest Coalition criticised the fund as "colonialistic," arguing it may benefit financial intermediaries rather than forest communities.
  - Critics warn that market-based conservation mechanisms may not address structural drivers of deforestation such as agribusiness expansion, mining, oil extraction and infrastructure projects.
- **Concerns on Funding and Distribution**
  - Earlier proposals suggested a payment of around $4 per hectare, which critics say undervalues the ecosystem services provided by forests.
  - There are concerns that national governments could retain most funds, leaving limited benefits for local communities.
  - Effective implementation requires strong local institutions, transparency and accountability mechanisms.
- **Support Mechanisms for Forest Countries**
  - Brazil announced a digital platform to help forest countries access the TFFF and understand eligibility requirements.
  - The platform is being developed with partners such as United Nations Development Programme, Food and Agriculture Organization, World Wide Fund for Nature and Global Alliance of Territorial Communities.

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- **Importance of Land Rights**
  - Indigenous groups emphasised that forest protection is linked to territorial rights and community survival.
  - At COP30, protests by indigenous representatives demanded recognition of their land rights and inclusion in decision-making.
- **Forest and Land Tenure Pledge:** Under the Forest and Climate Leaders' Partnership, countries renewed the Forest and Land Tenure Pledge, committing $1.8 billion for 2026-2030 to support indigenous and local communities.
- **Broader Challenges in Forest Conservation**
  - Financial support alone cannot stop deforestation driven by infrastructure projects, agribusiness expansion and extractive industries.
  - Experts stress that conservation efforts must address power imbalances and ensure indigenous leadership.
- **Conclusion:** The success of the Tropical Forest Forever Facility will depend on whether it genuinely transfers power and financial control to forest communities rather than reinforcing existing inequalities in global conservation systems.

2. Environment: yet another casualty of the West Asia war: (GS paper 2 and 3)

- **Context - Conflict and Environment:** The ongoing conflict in West Asia is causing significant environmental damage and contributing to climate change through military operations and destruction of energy infrastructure.
- **Military Operations and Emissions**
  - Aircraft from the United States and Israel consume large quantities of jet fuel during bombing missions and surveillance flights over Iran.
  - Continuous deployment of stealth bombers, fighter jets and naval fleets increases greenhouse gas emissions.

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- **Energy Use by Military Forces**
  - Naval fleets, including aircraft carriers and support vessels, require large amounts of energy to sustain operations.
  - Although many aircraft carriers are nuclear-powered, military bases and ships also rely on diesel generators for electricity.
- **Total Carbon Emissions from War**
  - A study in the journal One Earth estimated that the Gaza War generated about 33 million tonnes of carbon dioxide equivalent emissions.
  - This is comparable to the annual emissions of 7.6 million petrol cars or those of the country Jordan.
- **Comparison with Other Conflicts**
  - The Russia-Ukraine War is estimated to have caused more than 300 million tonnes of additional emissions, roughly equivalent to the annual emissions of France.
  - These estimates are provided by the Initiative on GHG Accounting of War.
- **Strategic Energy Infrastructure Risks**
  - The conflict affects the Strait of Hormuz, a crucial route for global oil and gas transport.
  - Oil tankers, refineries and storage facilities in the Gulf region are vulnerable to attacks, leading to toxic fires and pollution.
- **Economic and Energy Implications**
  - The conflict has caused global oil prices to rise, increasing pressure on governments to manage energy costs.
  - At the same time, higher fossil fuel prices may accelerate the transition toward clean energy and electrification.
- **Environmental Pollution:** Attacks on oil infrastructure and military targets release toxic smoke and chemicals, contaminating air, water and surrounding ecosystems.

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- **Conclusion:** Wars cause not only human and economic losses but also major climate impacts, environmental pollution and disruptions to global energy systems.

3. Why must India electrify its kitchens? (GS paper 3)

- **Context - India's Cooking Energy Challenge**
  - India spends about $26.4 billion annually importing LPG, much of it transported through the Strait of Hormuz.
  - The country has 332 million LPG connections, yet around 37% of households still rely on firewood and dung for cooking.
  - Electric cooking is now cheaper than unsubsidised LPG, prompting discussions about shifting from gas to electricity.
- **Limitations of Gas-Based Clean Cooking**
  - India imports about 60% of LPG and 50% of natural gas, increasing dependence on global markets.
  - Rising geopolitical tensions in West Asia often cause price shocks that directly affect Indian households.
  - Gas-based clean cooking is reaching an affordability limit despite expanded LPG access.
- **Cost and Efficiency Advantage of Electric Cooking**
  - Studies by the Institute for Energy Economics and Financial Analysis show that electric cooking is 37% cheaper than unsubsidised LPG and 14% cheaper than piped natural gas.
  - Induction cooktops are about 85% energy efficient, compared to roughly 40% efficiency of LPG burners.
  - Electric pressure cookers also consume less energy than other cooking devices.
- **Challenges for Large-Scale Adoption**
  - Indian cooking often requires multiple pots and simultaneous cooking, making single induction stoves insufficient.

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- Research institutions like The Energy and Resources Institute stress the need for multi-pot induction technology suited for Indian cooking styles.
- Electric cooking accounted for only around 5% of cooking energy use in 2021.

- **Impact on Electricity Demand and Peak Load**
  - Electricity demand peaks typically occur between 9-11 p.m., when households use appliances simultaneously.
  - India's peak electricity demand increased from 148 GW in 2014 to 242.5 GW in 2025.
  - Mass adoption of electric cooking could increase evening peak demand and strain the power grid.
- **Role of Smart Demand Management**
  - Technologies such as OpenADR allow smart appliances to automatically adjust electricity consumption during peak hours.
  - Pilot projects by Tata Power Delhi Distribution achieved about 14% reduction in peak demand using automated demand response systems.
- **Rooftop Solar and Household Energy Systems**
  - Households with rooftop solar panels and batteries can generate electricity during the day and use stored energy for evening cooking.
  - The PM-Surya Ghar Yojana aims to provide rooftop solar with 300 free electricity units for 10 million households.
  - India's rooftop solar capacity is expected to grow from 24 GW in 2026 to over 41 GW by 2030.
- **Peer-to-Peer Energy Trading**
  - Digital platforms allow households to sell excess solar power directly to neighbours, known as peer-to-peer energy trading.
  - A pilot project in Lucknow by the India Smart Grid Forum and Powerledger reduced electricity purchase costs by 43%.

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- **Policy Measures Needed**
  - Redirect part of the ₹40,000 crore LPG subsidy toward subsidies for induction cooktops. Expand bulk procurement of electric cooking devices through Energy Efficiency Services Limited.
  - Promote time-of-use electricity tariffs, smart appliances, and all-electric building codes in urban areas.
- **Conclusion - Energy Security and Sustainability**
  - Shifting from LPG to electric cooking can reduce dependence on imported fuels and improve energy security.
  - Electric cooking powered by domestic renewable energy sources can strengthen India's long-term energy sovereignty and climate goals.

Quick Bites:

- Sri Lanka on Monday announced a four-day working week - declaring Wednesdays off - for government institutions, schools, and universities, to conserve fuel as the escalating tensions in West Asia threaten a severe energy crisis.
- India concluded its campaign at the World Boxing Futures Cup 2026 in Bangkok with a strong medal haul of five medals, including one gold, three silver and one bronze. Chandrika Pujari delivered the standout performance for India by winning the gold medal in the women's 51 kg category.
- India finished at the top of the medal standings at the World Para Athletics Grand Prix 2026 New Delhi leg, winning a total of 208 medals as the three-day competition concluded at the Jawaharlal Nehru Stadium. Russia secured the second position with 35 medals, while Bosnia and Herzegovina finished third with three medals.

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- A medieval Telugu inscription linked to the Gajapathi rulers of Odisha has been discovered on a stone pillar at the historic Lakshmi Narasimha Swamy Temple in Ramachandrapura Agraharam of Guntur city, Andhra Pradesh.
- Researchers have recently discovered a new species of earthworm named Drawida vazhania in Kerala's Peechi-Vazhani Wildlife Sanctuary.
- A faunal survey by the Zoological Survey of India at Megamalai Wildlife Sanutuary in Tamil Nadu discovered nine new species, highlighting the region's rich biodiversity in the Western Ghats.

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18-03-2026

PRELIMS ARTICLES:

1. Final estimates of agriculture for 2024-25:

Context: Union Minister Shri Shivraj Singh Chouhan releases Final Estimates of 2024-25 of area and production of horticulture crops.

Details of final estimates of 2024-25:

Overall Horticulture:

- As per the Final Estimates for 2024-25, the total horticulture crop area in India increased to 301.36 lakh hectares, compared to 290.86 lakh hectares in 2023-24, showing a risc of 10.50 lakh hectares (3.61%). The total horticulture production also increased to 3707.38 lakh tonnes, which is 159.94 lakh tonnes (4.51%) higher than 3547.44 lakh tonnes recorded in 2023-24.

Fruits:

- Fruit production in 2024-25 reached 1176.49 lakh tonnes, registering an increase of 46.71 lakh tonnes (4.13%) compared to 1129.78 lakh tonnes in 2023-24. The growth was mainly driven by higher production of banana, mango, mandarin, papaya, guava, watermelon, and jackfruit.

Vegetables:

- Vegetable production in 2024-25 was estimated at 2177.97 lakh tonnes, which is an increase of 105.89 lakh tonnes (5.11%) from 2072.08 lakh tonnes in 2023-24. The rise was supported by higher output of crops such as onion, potato, green chilli, cauliflower, cabbage, brinjal, okra, peas, pumpkin, bottle gourd, bitter gourd, cucumber, tapioca, sweet potato, radish, and capsicum.

Onion:

- In 2024-25, the area under onion cultivation increased significantly to 19.68 lakh hectares, up from 15.41 lakh hectares in 2023-24, showing an increase of 4.27 lakh hectares (27.74%). Onion

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production also rose sharply to 307.67 lakh tonnes, which is 65 lakh tonnes (26.79%) higher than 242.67 lakh tonnes in 2023-24.

Potato:

- Potato production in 2024-25 was estimated at 585.71 lakh tonnes, marking an increase of 15.18 lakh tonnes (2.66%) compared to 570.53 lakh tonnes in 2023-24, indicating steady growth in this important staple crop.

Tomato:

- Tomato production in 2024-25 was estimated at 205.99 lakh tonnes, which represents a decline compared to 213.23 lakh tonnes in 2023-24, indicating a slight reduction in production during the year.

Aromatic and Medicinal Plants:

- The area under aromatic and medicinal plants increased to 9.83 lakh hectares in 2024-25, up from 9.26 lakh hectares in 2023-24, reflecting a rise of 0.57 lakh hectares (6.13%). Production also increased significantly to 9.01 lakh tonnes, compared to 7.26 lakh tonnes in the previous year.

Flowers:

- The area under flower cultivation rose sharply to 3.97 lakh hectares in 2024-25, compared to 3.17 lakh hectares in 2023-24, showing a rise of 0.80 lakh hectares (25.24%). Flower production also increased to 42.65 lakh tonnes, up from 35.35 lakh tonnes, marking a 20.65% growth.

Spices:

- In 2024-25, the area under spices cultivation reached 50.93 lakh hectares, showing a marginal increase of 0.69 lakh hectares (1.38%). The production of spices increased to 129.93 lakh tonnes, which is 4.08% higher than 124.84 lakh tonnes in 2023-24, with notable crops including cumin, ginger, garlic, and turmeric.

Plantation Crops:

- Production of plantation crops in 2024-25 was estimated at 169.81 lakh tonnes, which is lower compared to 176.66 lakh tonnes in 2023-24, indicating a decline in production during the period. 2.

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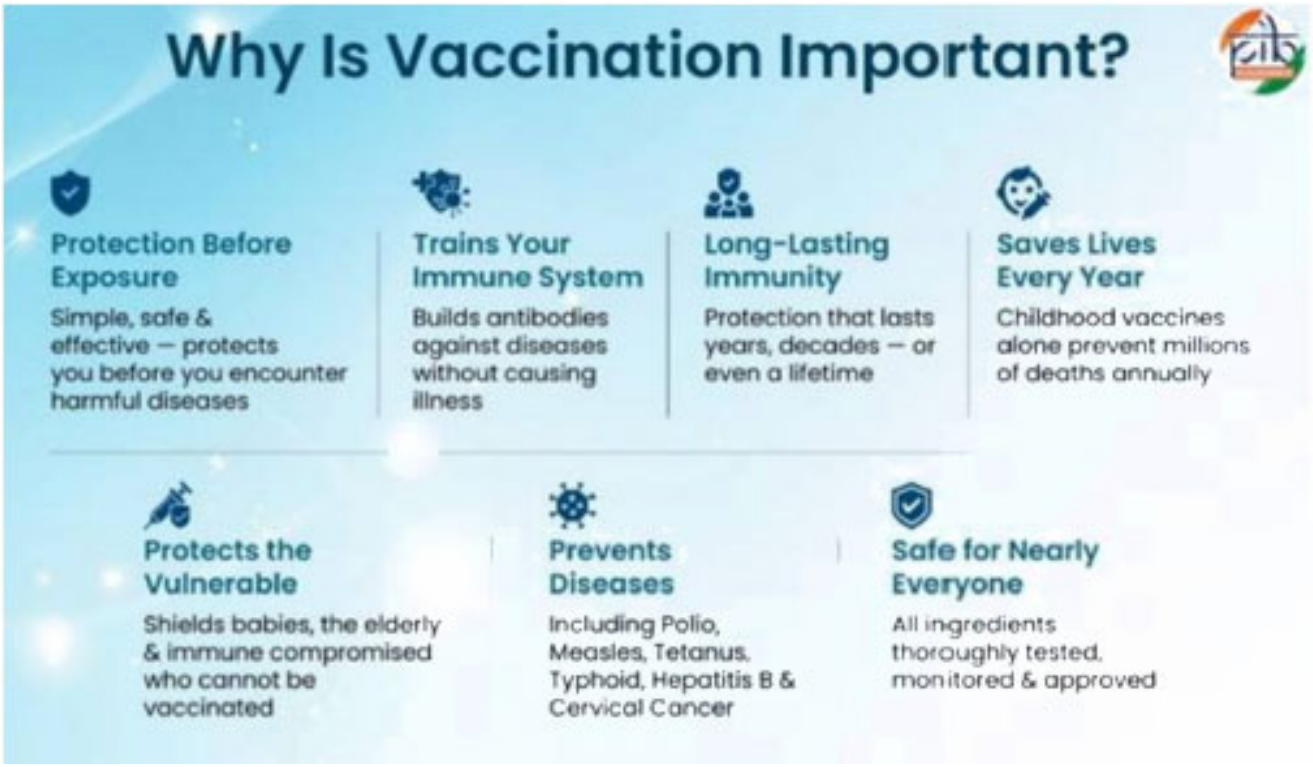
2. National Vaccination Day:

Context: India celebrates National Vaccination Day on March 16 every year to commemorate the first dose of the Oral Polio Vaccine given to citizens in 1995, under the Pulse Polio Programme launched in the same year. The programme, launched in 1995, successfully eliminated polio in India, with the last case in India reported on January 13, 2011, in Howrah, West Bengal.

More details about vaccination:



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HOW THE IMMUNE SYSTEM AND VACCINES WORK

NATURAL INFECTION & IMMUNE RESPONSE

A Person Falls Ill	Immune System Action	Defeating Germs & Memory
		
PATHOGENS: bacteria, virus, parasites, fungi	**ANTIBODIES**	**MEMORY CELLS**
A person encounters pathogens and falls ill	Immune system identifies pathogens and creates antibodies (like specialised soldiers)	The antibodies help the person fight the illness; the immune system retains a 'memory' of the germ for future defenses

HOW VACCINES ASSIST THE PROCESS

Vaccination	Vaccine Components	Provoking Defences
		
Vaccines help produce antibodies without the person falling ill first.	**WEAKENED/INACTIVE GERM ORGANISM (ANTIGENS), GENETIC BLUEPRINT** Components cannot cause disease.	**ANTIBODIES, MEMORY CELLS** Effectively provoke the immune system to create necessary defences.

FUTURE ENCOUNTER WITH REAL PATHOGEN



The body is protected.

If the real pathogen is encountered, memory cells allow the body to defend itself much more efficiently.

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3. Dimethyl Ether (DME):

Context: The Council of Scientific and Industrial Research-National Chemical Laboratory (CSIR-NCL) has announced plans to scale up Dimethyl Ether (DME) technology to an industrial-scale demonstration. The initiative aims to promote cleaner alternative fuels in India and reduce dependence on conventional diesel.

About Dimethyl Ether (DME):

- **Dimethyl Ether (DME):** A synthetic fuel that can be used as an alternative to diesel in specially designed compression ignition engines.
- **Production Sources:** Can be produced from natural gas, coal, biomass, and waste materials.
- **Global Significance:** Considered a promising clean fuel for heavy-duty vehicles and industrial applications.
- **Physical Property:** Exists as a colourless gas under normal atmospheric conditions.
- **Ignition Quality:** Has a very high cetane number, indicating excellent ignition in diesel engines.
- **Clean Combustion:** Produces very low levels of soot, nitrogen oxides (NOx), sulphur oxides (SOX), and particulate matter.
- **Efficiency:** Offers thermal efficiency comparable to conventional diesel fuel.
- **Role in India:** Can serve as an alternative fuel for agriculture and transport sectors, which heavily depend on diesel.
- **Engine Compatibility:** Conventional diesel engines can be modified to operate on DME.
- **Industrial Uses:** Used as an aerosol propellant and as an intermediate chemical in the production of dyes, plastics, and other chemical products.

4. Regional Rural Banks (RRBs):

Context: Standing Committee on Finance recommends ways to improve functioning of RRBs.

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More about:

- Regional Rural Banks consolidated from 43 to 28 to create stronger and viable entities.
- Consolidation implemented in phases based on Dr. Vyas Committee recommendations.
- Reform aligned with "One State-One RRB" vision.
- RRBs now operate as stronger institutions across II States.
- Committee suggested improving performance and financial sustainability of RRBs.
- RRBs advised to mitigate risks in education loans using Credit Guarantee Fund Scheme for Education Loans.
- CGFSEL provides government guarantee up to 7.5 lakh without collateral.
- Recommendation to address high GNPA (~13.8%) in education loans.
- Suggested use of Al-based Early Warning Signals (EWS) for better credit risk management.
- Proposal to encourage Initial Public offeringIPOs of profitable RRBs to raise capital.
- IPOs expected to improve corporate governance and market discipline.

About Regional Rural Banks (RRBs):

- Regional Rural Banks established to promote financial inclusion in rural areas.
- Formed jointly by Central Government, State Government, and sponsoring commercial banks.
- Aim to provide credit to small farmers, agricultural labourers, artisans, and weaker sections.
- Established under Regional Rural Banks Act 1976 on recommendation of Narasimham Committee on Rural Credit.
- First RRB was Prathama Grameen Bank, set up on 2 October 1975.
- Designed as hybrid institutions combining cooperative and commercial banking features. → Mobilise deposits from rural/semi-urban areas and provide loans mainly to priority groups.
- Provide banking services in rural and semi-urban regions.
- Perform government functions like MGNREGA wage disbursement and pension payments.

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- Offer para-banking services like ATM cards, mobile banking, UPI, lockers, etc.
- Reserve Bank of India mandates 75% PSL target for RRBs (higher than 40% for commercial banks).
- Ownership pattern: Centre (50%), State (15%), Sponsor Bank (35%).
- Operate in limited notified districts within a State.
- Regulated by RBI and supervised by NABARD.
- Sources of funds include own capital, deposits, borrowings from NABARD, sponsor banks, SIDBI, and National Housing Bank.

MAINS SPECIFIC ARTICLES:

1. Ladakh Magmatic Arc: (GS paper 1)

Context: Scientists have decoded the evolution of the Ladakh Magmatic Arc in the NW Himalaya, that acts as a around 130-million-year, record of plate tectonics that document the subduction, maturation, and collision between the Indian and Eurasian plates.

More about:

- **Ancient Geological Setting:** Millions of years ago, present-day Ladakh was located above the Neo Tethys Ocean, where oceanic crust subducted beneath the Eurasian margin, initiating the formation of the Ladakh Magmatic Are during the Jurassic-Eocene period (201.3-33.9 million years ago).
- **Scientific Study:** Researchers from the Wadia Institute of Himalayan Geology under the Department of Science and Technology traced the origin of this are through geochemical analysis of rocks, confirming that it formed due to northward subduction of the Neo-Tethyan oceanic plate beneath the Eurasian margin.

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- **Rock Complexes Analysed:** Scientists compared geochemical and isotopic data from the Dras-Nidar Island Arc Complex, the Ladakh Batholith, and post-collisional mafic dykes to understand the tectonic evolution.
- **Magmatic Evolution:** The evolution of the Ladakh magmatic are was controlled by Neo-Tethyan oceanic geodynamics, showing three major magmatic phases (160-110 Ma, 103-45 Ma, and <45 Ma) linked to subducting slab dynamics and interactions between the mantle wedge and crustal materials.
- **Extinct Volcanic System:** The Ladakh Magmatic Arc represents a long-extinct volcanic system that once generated large volumes of magma and evolved through several geological phases over tens of millions of years.
- **Early Volcanic Island Stage:** In the earliest phase, the region resembled a volcanic island chain in the Neo-Tethys Ocean, and rocks from the Dras-Nidar Island Arc Complex indicate magma mainly derived from the mantle with minor sediment contribution.
- **Formation of Ladakh Batholith:** As tectonic convergence intensified, large granite bodies (Ladakh Batholith) formed deep underground, showing stronger continental chemical signatures due to recycling of sediments and crustal fragments into magma.
- **Approaching Plate Collision:** Increasing convergence between the Indian Plate and the Eurasian Plate carried more sediments into the mantle, enriching magma and altering its geochemical composition.

2. Ministry of Planning, Niti Aayog get House panel rap for 'poor planning' of finances: (GS paper 2)

Context: The Parliamentary Standing Committee on Finance pulled up the Ministry of Planning for not "planning" its finances better. The committee found that despite spending less than half of the budget allocated to it, the Ministry was allocated ever-higher amounts over the past three financial years.

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More about:

- **Committee & Context:** Parliamentary Standing Committee report tabled in Lok Sabha flagged issues in financial planning of NITI Aayog functioning under the Ministry of Planning.
- **Key Concern:** Committee called for "more realistic" planning and better financial management by the Ministry.
- **Persistent Underutilisation:** Continuous underuse of allocated funds observed across multiple years.
- **Budget vs Actuals (2023-24):** 290.81 crore spent against ₹824.39 crore BE (-35% utilisation).
- **Budget vs Actuals (2024-25):** *282.61 crore spent against ₹837.26 crore BE (-34% utilisation). Trend in 2025-26: Slight improvement but utilisation only around half of budgeted amount; committee remains pessimistic.
- **Rising Budget Despite Low Use:** Budget Estimates increased by ~20-22% in recent years despite poor utilisation.
- **2026-27 Projection:** Ministry sought 1,203.38 crore, -22% higher than 2025-26 BE (₹1,006.06 crore).
- **Implementation Issues:** Committee termed implementation as "dismal" and indicative of planning flaws.
- **QEP Analysis:** Quarterly Expenditure Plan shows persistent underutilisation (35% in 2023-24; 33% in 2024-25).
- **Q4 Spending Concern:** ₹139.17 crore projected for Q4 of 2025-26 indicates last-minute spending rush.
- **Rule Violation Risk:** Such spending surge may breach 15% monthly expenditure cap norms.
- **Committee Recommendations:** Ensure effective utilisation of 2026-27 budget and avoid idle/blocking of funds.
- **Need for Fiscal Prudence:** Improve accuracy in expenditure projections and targets.

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- **Administrative Reform Suggestion:** Synchronise administrative approvals with QEP and conduct internal reviews.

3. SC allows 12 weeks' paid leave to all new adoptive mothers: (GS paper 1)

Context: Supreme Court of India declared maternity leave a basic human right for working women.

More about:

- **Judgment & Court:** Supreme Court of India declared maternity leave a basic human right for working women.
- **Paternity Leave Observation:** Court urged Union government to legally recognise paternity leave as a social security benefit, stressing parenting is a shared responsibility.
- **Legal Context:** Case challenged provisions under Code on Social Security 2020 which replaced the Maternity Benefit Act 1961.
- **Contested Provision:** Section 60(4) allowed maternity benefit (12 weeks) only if adopted child was below 3 months.
- **Petitioner's Argument:** Petitioner Hamsaanandini Nanduri argued adoption process takes over 3 months, making the provision ineffective and discriminatory.
- **Court's View on Adoption:** Adoption recognised as an expression of reproductive autonomy. ✦ Equality Principle: Court held adoptive mothers have same rights and responsibilities as biological mothers.
- **Emotional & Social Aspect:** Emphasised need for time, care, and bonding in adoptive motherhood.
- **Unconstitutionality:** Provision declared arbitrary and discriminatory, violating women's rights and workplace equality.

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- **Gender Inequality Concern:** Lack of maternity leave may force women to work early, indirectly Icading to girl child dropping out of school for caregiving.
- **Father's Role:** Court highlighted importance of father's presence in early childcare and support to mother.
- **Key Recommendation:** Called for legal framework on paternity leave to ensure holistic child development and gender equity.

Quick Bites:

- "Desh ka Prakiti Parikshan Abhiyan" campaign was launched by Ministry of Ayush on 9th Ayurveda Day (29th October, 2024) with the aim of generating awareness among people about the concept of 'Prakriti' described in Ayurveda and assessing their Prakriti for a positive approach towards their health.
- India is the world's largest producer of coconuts contributing to 30.37% of the Global coconut production. Globally, coconut cultivation covers nearly 12390 thousand hectares, of which India accounts for approximately 2165.20 thousand hectares. The country produces around 21373.62 million nuts annually.
- Indian animation received global recognition after the animated short film CHYIMI won the Best Director Award at the New York Short Animation Festival (NYSAF) 2026.
- Researchers have recently uncovered two ancient petroglyphs on a flat rock surface inside a rock shelter near the Beerappa Temple in Manchirevula, Telangana.
- Coordinated explosions staged by suspected suicide bombers tore through a busy market and other areas in the Nigerian city of Maiduguri, killing at least 23 people and wounding 108 others. The military blamed the blasts on suspected Boko Haram militants.

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19-03-2026

PRELIMS ARTICLES:

1. Small Hydro Power (SHP) Development Scheme:

Context: The Union Cabinet chaired has approved the 'Small Hydro Power (SHP) Development Scheme for the period FY 2026-27 to FY 2030-31' with an outlay of Rs.2584.60 crore for installation of Small Hydro Power (SHP) Projects of an approximate capacity of 1500 MW.

About Small Hydro Power (SHP) Development Scheme:

- Targets development of small hydro projects (1-25 MW) across India, especially in hilly and North Eastern regions.
- Higher Central Financial Assistance (CFA) for NE & border districts: 23.6 crore/MW or 30% cost (max 30 crore/project).
- **Other states:** ₹2,4 crore/MW or 20% cost (max 20 crore/project).
- **Total outlay:** 2,532 crore, expected to attract ₹15,000 crore investment.
- Promotes clean energy and rural development in remote and difficult arcas. → Ensures 100% indigenous plant & machinery, supporting Atmanirbhar Bharat. → Incentivizes preparation of DPRS for ~200 projects with 30 crore support. → Expected to generate 51 lakh person-days of employment during construction.
- Provides long-term jobs in operation and maintenance of SHPS.
- Decentralized nature reduces the need for long transmission lines and lowers losses.
- **Environment-friendly:** minimal land acquisition, deforestation, and displacement.
- Boosts socio-economic development in remote regions with a long project lifespan (40-60 years).

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2. Bharat Audyogik Vikas Yojna (BHAVYA):

Context: In a landmark step towards accelerating industrial growth, the Union Cabinet has approved the Bharat Audyogik Vikas Yojna (BHAVYA), with an allocation of Rs.33,660 crore for developing 100 plug-and-play industrial parks across the country.

More about the scheme:

- The scheme aims to develop world-class industrial infrastructure, unlocking manufacturing potential and driving India's growth story.
- Building on the success of Industrial Smart Cities developed under the National Industrial Corridor Development Programme (NICDP) framework, BHAVYA will be implemented in partnership with states and private sector players.
- Under the scheme, industrial parks ranging from 100 to 1000 acres will be taken up for development. Financial support of up to Rs. One crore per acre will be provided for:
  - Core infrastructure (internal roads, underground utilities, drainage, common treatment facilities, ICT and administrative systems)
  - Value-added infrastructure (ready-built factory sheds, built-to-suit units, testing labs, warehousing)
  - Social infrastructure (worker housing and support amenities)
- Support for external infrastructure will also be provided up to 25% of the project cost, ensuring seamless connectivity and integration with existing networks.

3. Satellite launch facilities in India:

Context: This information was given by Union Minister of State (Independent Charge) for Science & Technology and Earth Sciences, Dr. Jitendra Singh, in a written reply in the Lok Sabha.

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About satellite launch facilities in India:

- Two operational launch pads at Satish Dhawan Space Centre, Sriharikota: First Launch Pad (FLP) and Second Launch Pad (SLP).
- FLP supports launches of PSLV and SSLV.
- SLP supports PSLV, GSLV, and LVM3.
- The Government approved the Third Launch Pad (TLP) in 2025 for next-generation launch vehicles of ISRO.
- TLP is expected to be operational by 2029-30.
- Second launch site: SSLV Launch Complex (SLC) at Kulasekarapattinam.
- SLC will support SSLV launches to Sun-synchronous Polar Orbit (SSPO) for Earth observation.
- SLC expected to be commissioned by FY 2026-27.

About various launch vehicles:

Parameter	SLV-3	ASLV	PSLV	GSLV
Full Form	Satellite Launch Vehicle	Augmented Satellite Launch Vehicle	Polar Satellite Launch Vehicle	Geosynchronous Satellite Launch Vehicle
First Launch	1980	1987	1994	2001
Status	Retired	Retired	Active	Active
Stages	4-stage	5-stage	4-stage	3-stage
Propellant Type	All solid	All solid	Solid + + Liquid	Solid + Liquid + Cryogenic
Payload Capacity	-40 kg	~150 kg	~1,750 kg (LEO approx)	~2,500 kg (GTO approx)
Orbit Type	Low Earth Orbit (LEO)	Low Earth Orbit (LEO)	Polar/Sun-synchronous Orbit	Geosynchronous Transfer Orbit (GTO)
Key Feature	First Indian launch vehicle	Improved SLV with higher capacity	Most reliable workhorse of ISRO	Uses cryogenic engine for heavy payloads
Notable Achievement	Launched. Rohini satellite	Advanced staging concept	Multiple satellite launches in single mission	Heavy satellite launches to higher orbits

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4. IOS SAGAR:

Context: Reaffirming India's commitment to collaborative maritime security in the Indian Ocean Region, the second edition of Indian Ocean Ship (IOS) SAGAR commenced on 16 Mar 2026.

About IOS Sagar:

- IOS SAGAR is designed as a unique operational engagement programme that enables naval personnel from Friendly Foreign Countries to train and sail together onboard an Indian Naval Ship.
- By integrating international participants into shipboard activities and professional training modules, the initiative promotes practical cooperation, interoperability and shared understanding of maritime operations.
- As part of the current edition of IOS SAGAR, naval personnel from 16 Friendly Foreign Countries will participate in the programme.
- The Indian Navy assumed the chair of the Indian Ocean Naval Symposium (IONS) in Feb 2026.
- Therefore, this Edition includes participation from 16 IONS nations of the Indian Ocean Region (IOR).

About Indian Ocean Naval Symposium (IONS):

- Indian Ocean Naval Symposium is a voluntary initiative to enhance maritime cooperation among Indian Ocean Region (IOR) navies.
- Provides an open forum for discussing maritime issues, sharing information, and building cooperative solutions.
- Comprises 34 countries: 25 members (including India) and 9 observers.
- Inaugural conclave (2008) held in New Delhi, chaired by the Indian Navy (2008-10).
- India to chair IONS again for 2025-27 during the 9th Conclave of Chiefs (CoC).
- **HADR:** Focus on joint humanitarian assistance and disaster relief operations.

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- **Capacity Building:** Conducts training exercises and workshops for interoperability.
- **Counter-Piracy & Maritime Security:** Develops strategies against piracy, smuggling, and maritime crimes.

5. Krishi Sakhi Initiative:

Context: In alignment with the recognition of year 2026 as the 'International Year of the Woman Farmer' by the United Nations through Food and Agriculture Organization (FAO), the Agriculture Insurance Company of India Limited (AIC) has launched Krishi Sakhi Initiative

About Krishi Sakhi Initiative:

- It aims to empower women farmers and work towards achieving inclusive growth.
- It also aims to create sustained awareness, encourage participation of women in agriculture and crop insurance and celebrate their contribution towards strengthening the agricultural sector in India.
- Agriculture Insurance Company of India Limited is an Indian public sector undertaking headquartered in New Delhi. It is a government-owned agricultural insurer under ownership of the Ministry of Finance, Government of India.

6. Environmental accounting explainer series Pollination Services:

Context: On 18th March 2026, during the capacity building Workshop on Monitoring Frameworks of Sustainable Development Goals (SDGs), Compilation of Environment Accounts and Gender Statistics at Patna, Bihar, MoSPI released the publication on "Environmental accounting explainer series Pollination Services". This is the first dedicated publication on pollination services, compiled with the objective of presenting comprehensive information at the national level, in accordance with the SEEA framework.

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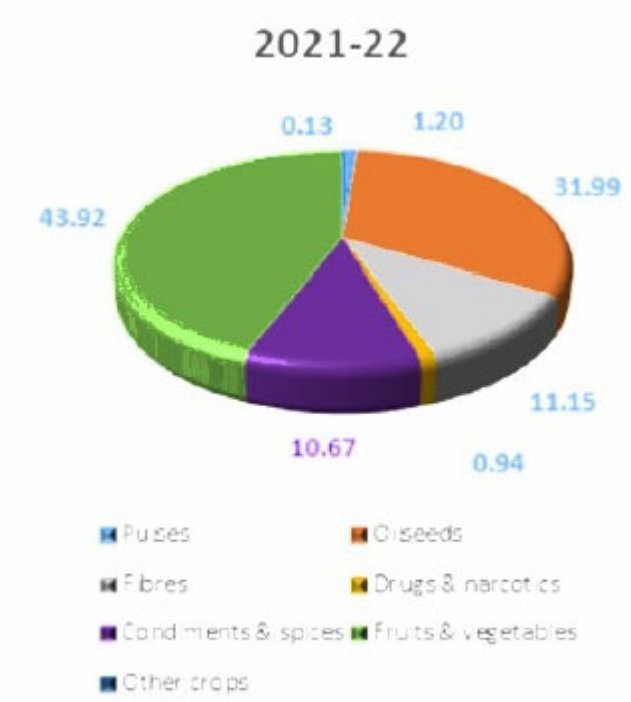
More details:

Contribution of each crop categories for pollination:



- Pollination is a fundamental ecological process that supports agricultural production, biodiversity conservation, and ecosystem stability.
- A large number of crops depend partially or fully on animal pollinators. Effective pollination improves crop yields, enhances fruit and seed formation, and improves the quality of agricultural produce.
- The monetary value of Pollination services is roughly 8-10 percent of the total crop output value between 2012-13 and 2021-22.
- The contribution of pollination to the value of crop output is ₹115.41 thousand crore in 2012-13 and ₹266.33 thousand crore in 2021-22

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- Fruits and vegetables make the largest contribution to total pollination value over the decade, reflecting their high dependence on pollination services and substantial market value.

7. RISA: Timeless Tribal:

Context: In a pathbreaking initiative to bring India's rich tribal heritage to the forefront of global fashion and lifestyle, the Minister of Tribal Affairs, Shri Jual Oram launched a dedicated premium signature brand, "RISA: Timeless Tribal," on 18th March 2026.

About RISA: Timeless Tribal:

- **"RISA:** Timeless Tribal" is a premium signature brand launched to promote India's tribal textiles, crafts, and heritage globally.
- Inspired by 'Risa', a traditional handwoven stole of Tripura symbolizing tribal identity and culture.
- Aims to bridge traditional craftsmanship with modern fashion and global markets.
- Focuses on fair profit-sharing and better market access for tribal artisans.
- Promotes premium positioning of tribal fabrics, embroidery, and handicrafts.
- Initial phase covers 10 clusters (5 weaves, 2 embroideries, 3 crafts).
- Emphasizes design intervention to create new products while preserving tradition. Includes capacity building and skill training for artisans, especially women.
- Supports infrastructure development like weaving clusters and stitching units.
- Features eco-friendly premium packaging designed by National Institute of Design Haryana.
- Implemented with support from TRIFED.
- Involves collaborations with top designers like Manish Tripathi and others.
- Aligns with "Vocal for Local" and Atmanirbhar Bharat by promoting indigenous tribal products.

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8. Xi-cc-plus:

Context: The Large Hadron Collider has discovered a new particle, the 80th identified so far by the world's most powerful particle smasher, Europe's CERN physics laboratory announced.

About Xi-ce-plus:

- **Nature of the Particle** - Xi-cc-plus is a baryon similar to a proton but about four times heavier; expected to provide insights into quantum mechanics behaviour
- **Baryons and Quarks** - Baryons (like protons and neutrons) are made of three quarks; quarks exist in six flavours: up, down, charm, strange, top, bottom
- **Composition of Xi-cc-plus**- Contains two charm quarks and one down quark; heavier due to presence of two heavy charm quarks instead of lighter up quarks
- **Experimental Method** - LHC accelerates particles at high speeds and collides them; scientists study decay patterns to identify short-lived particles
- **Significance of Discovery** - Only the second observed baryon with two heavy quarks; first new particle found after 2023 LHCb detector upgrade
- **Comparison with Earlier Discovery** - Similar to 2017 particle (two charm + one up quark) but differs by having a down quark; small change leads to major differences
- **Quantum Effects & Lifetime** - New particle has much shorter lifetime (up to six times shorter), making detection more challenging
- **Scientific Importance** - Helps test Quantum Chromodynamics and understand strong force and exotic particles like tetraquarks and pentaquarks
- **Statistical Validation** - Discovery confirmed with 7 sigma significance (above 5 sigma threshold required in physics)

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About Large Hadron Collider:

- **About LHC** - The Large Hadron Collider is the world's largest particle physics experiment operated by CERN to study high-energy collisions
- **Location & Structure** - It is a 27 km circular underground tunnel located near Geneva on the Franco-Swiss border
- **Magnetic System** - It uses about 9,600 powerful magnets to create two D-shaped magnetic fields for guiding particle beams
- **Working Principle** - Protons are accelerated and collided at extremely high speeds to study fundamental physics
- **Subatomic Components** - Protons are made of quarks and gluons, where quarks exist in six flavours and gluons bind them via strong force
- **Acceleration Process** - Rapid switching of magnetic fields accelerates particles while focusing systems prevent collision with pipe walls
- **Speed Achieved** - Protons reach speeds up to 99.999999% of the speed of light
- **Experimental Capability** - Collisions recreate conditions similar to those just after the Big Bang
- **Detection Mechanism** - Detectors record particle interactions to study matter and fundamental forces
- **Major Discovery** - Confirmed the existence of the Higgs boson which explains how particles acquire mass.

9. Guillotine:

Context: The Lok Sabha passed the Demands for Grants of various Ministries for 2026-27. The House approved an expenditure of over 53 lakh crore by applying the guillotine, passing the Demands for Grants for various Ministries without a discussion.

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About Guillotine:

- **Origin of Term** - "Guillotine" originally referred to a beheading device used during the French Revolution
- **Historical Purpose** - Introduced in France to make capital punishment quicker and less painful.
- **Parliamentary Meaning** - In legislative practice, guillotine means clubbing and fast-tracking financial business in Parliament
- **Usage in India** - Commonly applied in the Lok Sabha during the Budget Session
- **Procedure** - Remaining demands for grants are put to vote without further discussion once guillotine is applied
- **Objective** - Ensures timely passage of the budget and continuity of government functioning.
- **Speaker's Role** - The Speaker enforces guillotine after completion of scheduled debates
- **Scope** - Covers all pending demands for grants and undiscussed clauses of bills/resolutions for immediate voting

MAINS SPECIFIC ARTICLES:

1. India's future demographic challenges: (GS paper 1)

Context: The Hindu Editorial.

More about:

- **Demographic Transition in India** - Population projected to rise from 1.36 billion (2021) to 1.59 billion (2051); growth slowing to -0.5% annually; shift towards ageing, urbanised, stable population
- **Declining Child Population & Schooling Impact** - 0-4 age group declining sharply; reduced demand for new schools; rise of uneconomic schools (Kerala example); government schools decreasing while private schools increasing due to quality perception

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- **Changing Education Landscape** - Smaller classroom sizes; improved teacher-pupil ratio possible; need to improve quality of government schools
- **Demographic Dividend Window** - Working-age population peaks around 2041 (-65.5%) then declines; urgency to utilise demographic dividend
- **Ageing Population (Greying India)** - Elderly population rising from 9.6% to 20.5%; median age increasing from 28 to 40 years; higher pressure on healthcare and social security
- **Economic & Labour Implications** - Workforce remains large but proportion declines; need for skill development and productivity; increase women's workforce participation
- **Policy & Governance Priorities** - Reform education and skills; continue family planning and reproductive health investments; better resource use in healthcare
- **Healthcare & Social Security Challenges** - Growing need for geriatric care; pension and healthcare system reforms required; rising fiscal burden
- **Opportunities: Silver Economy** - Expanding elderly population creates new economic opportunities; potential second demographic dividend

2. Transgender Persons (Protection of Rights) Amendment Bill, 2026: (GS paper 2)

- **Background & Context** - Union government introduced the Transgender Persons (Protection of Rights) Amendment Bill, 2026 in Lok Sabha, seeking changes to the 2019 Act; move comes 12 years after the landmark NALSA v Union of India recognised self-determined gender identity as a fundamental right
- **Key Change:** Removal of Self-Identity Right - Bill omits Section 4(2) of the 2019 Act, thereby removing the explicit right to self-perceived gender identity
- **Redefinition of Transgender Person** - New definition restricts scope to socio-cultural identities (hijra, kinner, aravani, etc.), intersex persons, and those with biological variations; excludes self-perceived gender identities and sexual orientation.

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- **Medicalisation of Identity** - Introduction of "authority" (medical board) for certification; District Magistrate to rely on medical recommendations instead of self-declaration.
- **Certification Process Changes** - Certificate now subject to scrutiny and possible medical consultation; revised certificate mandatory after Sex Reassignment Surgery (SRS).
- **Administrative Requirements** - Medical institutions must report SRS details to authorities; name change allowed in documents only under revised definition.
- **Changes in Existing Definitions** - Current inclusive definition (covering trans men, trans women, genderqueer, etc.) diluted; separate definition of intersex persons proposed to be removed.
- **Stronger Penal Provisions** - Expanded offences and graded punishments introduced, including imprisonment up to life and fines up to 25 lakh.
- **Concerns by Transgender Community** - Removal of self-identification seen as violation of dignity and autonomy; fears of exclusion, identity-based divisions, and lack of consultation → Conflict with NALSA Judgment - Contradicts Supreme Court ruling that gender identity is intrinsic and does not require medical procedures; violates Article 21 (personal liberty and dignity).
- **NALSA Judgment Principles** - Recognised third gender; upheld self-determination; prohibited mandatory medical procedures for legal recognition; distinguished gender identity from sexual orientation
- **Government's Justification** - Argues existing definition is vague and unworkable; seeks precise identification to target "genuine" beneficiaries facing biological and social exclusion
- **Policy Debate** - Tension between rights-based (self-identification) approach and state-controlled, medicalised identification framework

3. United Nations Inter-Agency Group for Child Mortality Estimation (UNIGME) Report: (GS paper 1)

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Context: India showing steady progress in reducing child deaths amid slowing global gains: report.

- **Global Child Mortality Status (2024)** - Around 4.9 million children under five died globally, including 2.3 million newborns; most deaths preventable with low-cost healthcare interventions.
- **Long-Term Trend** - Under-five mortality has declined by more than half since 2000, but progress has slowed by over 60% since 2015.
- **India's Progress** - India has shown steady improvement in reducing child mortality through sustained public health measures.
- **Neonatal Mortality in India** - Neonatal Mortality Rate (NMR) reduced from 57 (1990) to 17 (2024) per 1,000 live births.
- **Under-5 Mortality in India** - Under-5 Mortality Rate (U5MR) declined from 127 (1990) to 27 (2024) per 1,000 live births.
- **Reasons for India's Improvement** - Expansion of immunisation, better institutional deliveries, and targeted public health interventions.
- **Deaths in 5-24 Age Group** - About 2.1 million deaths; infectious diseases and injuries major causes; self-harm leading cause among girls (15-19), road accidents among boys.
- **Severe Acute Malnutrition (SAM)** - Over 1 lakh children (1-59 months) died directly due to SAM in 2024; actual burden likely underestimated.
- **High-Burden Countries (SAM)** - Countries like Pakistan, Somalia, and Sudan report highest deaths due to severe malnutrition.
- **Newborn Mortality Causes** - Nearly half of under-five deaths occur in newborns; major causes include preterm birth complications (36%) and birth-related complications (21%).
- **Post-Newborn Mortality Causes** - Infectious diseases like malaria, diarrhoea, and pneumonia dominate; malaria alone accounts for 17% deaths.
- **Regional Burden** - Sub-Saharan Africa accounts for 58% of global under-five deaths.

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Quick Bites:

- The Cabinet Committee on Economic Affairs chaired by the Prime Minister Shri Narendra Modi has approved construction of 4-Lane Access-Controlled National Highway-927 from Barabanki to Bahraich (101.515 km) in Uttar Pradesh on Hybrid Annuity Mode (HAM) at a cost of Rs.6969.04 crore.
- The ISRO/DOS has undertaken several space-based programmes to support the agriculture sector. Major initiatives include the Forecasting Agricultural output using Space, Agrometeorology and Land-based observations (FASAL) programme, National Agricultural Drought Assessment and Monitoring System (NADAMS), Coordinated Horticulture Assessment and Management using Geoinformatics (CHAMAN) programme, Space technology Utilization for Food security Agricultural Assessment and Monitoring (SUFALAM) project, and various collaborative programmes with State and other agencies.
- With the approval of the Union Cabinet, the Ministry of Cooperation has established national-level multi-state cooperative societies i.e National Cooperative Exports Limited (NCEL) and National Cooperative Organics Limited (NCOL) for export and promotion of organic products respectively.
- The keel laying ceremony of Yard 16402 & 16403, the second and third ship of six Next Generation Offshore Patrol Vessels (OPVs), was held at M/s YMPL, Ratnagiri.
- The Bharat Electricity Summit 2026, a flagship global conference-cum-exhibition for the power and electricity sector, will be held from 19-22 March 2026 at Yashobhoomi, New Delhi. The Summit, themed "Electrifying Growth. Empowering Sustainability. Connecting Globally." Kalinga Stadium in Bhubaneswar is set to host the National Para Athletics Championship from 19 to 21 March 2026, bringing together top para-athletes from across India.
- The National Cooperative Development Corporation (NCDC), functioning under the Ministry of Cooperation, has introduced the 'Dirghavadhi Krishak Punji Sahakar Yojana to strengthen long-term credit availability for cooperatives engaged in agriculture and allied sectors. The scheme aims

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to support capital formation, improve rural infrastructure, and ensure a steady flow of institutional finance to cooperative societies.

- India and Indonesia have announced a collaborative initiative to restore the historic Prambanan Temple complex in the Special Region of Yogyakarta, marking a significant step in cultural diplomacy and heritage conservation.
- India opened an anti-dumping investigation into ethyl chloroformate imports from China after a domestic producer alleged the chemical used in pharmaceutical and agrochemical manufacturing was being sold at unfairly low prices. Ethyl chloroformate is a highly reactive chemical used primarily as an intermediate in the production of pharmaceuticals, agrochemicals (herbicides/fungicides), and polymers.

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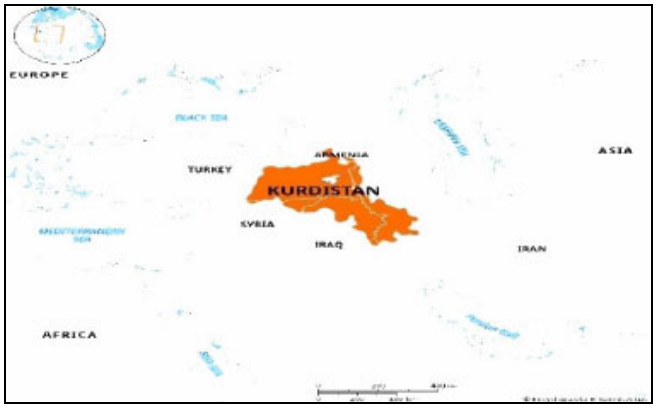
20-03-2026

PRELIMS ARTICLES:

1. Kurdistan Region:

Context: IRGC missile and drone attacks target civilian camps and Kurdish opposition bases in Iraq's Kurdistan Region.

About Kurdistan region:



- Kurdistan Region is a geographically defined region predominantly inhabited by Kurds.
- It spans eastern Turkey, northern Iraq, western Iran, and smaller parts of Syria and Armenia.
- Key governorates include Erbil, Sulaymaniyah, Dohuk, and Halabja with Erbil as capital.
- The region is characterised by the Zagros Mountains and eastern extension of the Taurus Mountains.
- Major rivers like Tigris River and Greater Zab River support agriculture and settlements.
- India opened a consulate in Erbil in August 2016 to strengthen economic ties with Iraq.
- Indian businesses actively participate in trade fairs in Erbil and Sulaymaniyah.

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2. Mahad Satyagraha:

Context: The year 2027 will mark the centenary of the Mahad Satyagraha, a landmark social justice movement led by B. R. Ambedkar in 1927, which asserted the rights of Dalits to access public water sources and challenged the practice of untouchability in India.

About Mahad satyagraha:

- On March 20, 1927, B. R. Ambedkar led the Mahad Satyagraha at Mahad to assert Dalits' right to access public water
- Protesters marched to the Chavdar Tale and drank water as a matter of right, defying caste restrictions
- Despite the 1923 Bole Resolution and 1924 municipal approval, upper castes blocked implementation
- Violent backlash followed, and the tank was "purified" by upper castes, reflecting deep social prejudice
- In December 1927, Ambedkar returned and publicly burned the Manusmriti as a rejection of caste-based inequality
- Upper castes filed a case leading to a court injunction (Dec 1927) restraining Dalits from using the tank
- Ambedkar respected the court order, emphasising constitutional methods despite continuing the
- movement
- A decade-long legal battle ensued, with courts rejecting claims of exclusive caste rights over the tank
- In 1937, the Bombay High Court ruled in favour of Ambedkar, declaring the tank as public property open to all
- The struggle highlighted that legal validation of rights often lagged behind social justice movements

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3. RELIEF (Resilience & Logistics Intervention for Export Facilitation) scheme:

Context: In view of the evolving geopolitical situation in West Asia and its impact on maritime logistics across the Gulf region, the Government has approved a time-bound and targeted intervention called RELIEF - Resilience & Logistics Intervention for Export Facilitation under the Export Promotion Mission (EPM).

About RELIEF scheme:

- RELIEF approved under Export Promotion Mission to address export disruptions.
- Aims to mitigate logistics disruptions, rising freight/insurance costs, and protect exporter confidence.
- Covers both past shipments (Feb 14-Mar 15, 2026) and future exports (Mar 16-Jun 15, 2026).
- ECGC Ltd. designated as nodal agency for implementation, claims, and monitoring.
- Provides up to 100% additional risk coverage for already insured consignments during disruption period.
- Offers up to 95% risk coverage support for upcoming exports with government backing.
- Includes up to 50% reimbursement (max 50 lakh) for non-ECGC-insured MSME exporters facing high logistics costs.
- Targets exports to West Asia/Gulf countries (UAE, Saudi Arabia, Israel, Iran, etc.).
- Backed by ₹497 crore financial outlay under Export Promotion Mission.
- Uses dashboard-based real-time monitoring and periodic review by EPM Steering Committee.
- Focuses on preventing order cancellations and safeguarding employment in export sectors.

4. PM Kisan:

Context: The Prime Minister released over 18,640 crore as the 22nd instalment of the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme from Guwahati, Assam, on March 13, 2026. Reflecting the government's continued commitment to strengthening farmers' income security, the Union Budget 2026-27 has allocated * 60,000 crore for the PM-KISAN scheme.

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About PM Kisan:

- The Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) is a centrally sector scheme launched on 24 February 2019 to provide assured income support to landholding farmer families with cultivable land nationwide.
- Under the scheme, each eligible farmer family receives annual financial assistance of 26,000, disbursed in three equal instalments of ₹2,000 through the Direct Benefit Transfer (DBT) mechanism into Aadhaar-seeded bank accounts.
- The benefits of the scheme are provided to farmers upon seeding of land records in the PM-KISAN portal, linking bank accounts with Aadhaar, and completing e-KYC verification.
- The scheme seeks to increase the income of small and marginal farmers by providing financial support for agricultural inputs, thereby improving crop health and productivity.
- State Governments play a central role in implementing the Pradhan Mantri Kisan Samman Nidhi by identifying eligible farmer households and developing a comprehensive beneficiary database. \
- In September 2023, the Government introduced Kisan-eMitra, an AI-enabled chatbot integrated with the PM-KISAN digital ecosystem.
- Developed with technical support from the EkStep Foundation and BHASHINI, the chatbot provides farmers with real-time information on payments, registrations, and eligibility under the scheme in multiple Indian languages.

5. Kalinjar Fort:

Context: The hill region surrounding Kalinjar Fort in Banda district, Uttar Pradesh, has been officially designated as a National Geo-Heritage Site by the Geological Survey of India (GSI).

About Kalinjar fort:

- Kalinjar Fort is located in Banda district atop an isolated hill.

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- It is surrounded by the Vindhya Mountains and the Ken River, giving it strong strategic importance.
- It is one of the oldest forts in India with a history of over 1500 years.
- The fort was initially developed during the Gupta period.
- It became a major centre under the Chandela dynasty and served as their capital.
- It functioned as both a military stronghold and a religious centre during Chandela rule.
- Invaders like Mahmud of Ghazni, Qutb-ud-din Aibak, and Humayun failed to conquer it.
- Akbar captured the fort in 1569 and gifted it to Birbal.
- Later it came under Maharaja Chhatrasal, then Hardev Shah, and finally the British in 1812 The fort complex includes temples, mosques, palaces, and stepwells.
- The Neelkanth Temple is a primary attraction built by Paramal Dev.
- The temple houses a unique blue stone Shiva lingam and an 18-armed deity sculpture.

MAINS SPECIFIC ARTICLES:

1. New GDP series, charting the path ahead: (GS paper 3)

Context: The Hindu Editorial Analysis.

- **New GDP Series (Base Year Update)** - Ministry of Statistics and Programme Implementation released new GDP series (base year 2022-23) on Feb 27, 2026 replacing outdated 2011-12 base year for more realistic estimates.
- **GDP Size Estimates (lakh crore)** - 261.18 (2022-23), 289.84 (2023-24), 318.07 (2024-25); about 3-4% lower than previous series.
- **Sectoral Composition (2024-25 GVA)** - Primary: 21.4%, Secondary: 25.8%, Tertiary: 52.9%.
- **Growth Trends** - Manufacturing shows strong real GVA growth: 12.7% (2023-24) and 9.3% (2024-25).

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- **Expenditure Pattern** - Private Final Consumption Expenditure (~56% of GDP) remains dominant.
- **Key Methodological Refinements** - Segregation of multi-activity companies using revenue shares (MGT-7/7A); improved scaling using paid-up capital-based blow-up factors; inclusion of LLPs using MCA data; better household sector estimation using GVAPW (ASUSE) + employment (PLFS).
- **Improved Estimation Techniques** - Wider use of double deflation and volume extrapolation; PFCE estimates improved using Household Consumption Expenditure Survey 2022-23 data.
- **Institutional Sector Data Strength** - Robust data for government and public corporations; challenges remain in private corporate sector.
- **State-wise GVA Allocation Issue** - Difficulty in distributing national GVA across states due to enterprise-level data; reliance on Annual Survey of Industries and GST data.
- **Limitations of ASI** - Inadequate coverage compared to MCA database leads to possible distortion in state GDP estimates.
- **Suggested Improvements** - Use MCA + GST databases to improve ASI sampling frame; consider dedicated surveys of companies.
- **Household Sector Challenges** - Volatility in GVAPW estimates (ASUSE) across years and states affects reliability.
- **Solution to Fluctuations** - Use 3-year moving average; explore rotating panel design like Periodic Labour Force Survey for stability.
- **Conclusion** - Further improvements needed in ASI coverage and ASUSE methodology for more accurate GDP and GSDP estimates.

2. Lack of 'sustainable water sources' will thwart Jal Jeevan Mission: (GS paper 2 and 3)

- **Scheme Overview** - Jal Jeevan Mission (28.69 lakh crore) aims to provide safe tap water to all rural households

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- **Key Concern** - Parliamentary committee warns objectives may remain unfulfilled due to lack of sustainable water sources
- **Water Availability Issue** - Despite infrastructure, many areas face source depletion within 1-2 years (rivers, lakes, ponds drying up)
- **Sustainability Challenge** - Long-term goal (25-30 years supply) at risk without ensuring source sustainability
- **Committee Recommendation** - Adoption of "source to tap" approach covering entire supply chain (source, storage, distribution)
- **Implementation Gap** - Lack of data from states on how many of the 6.83 lakh schemes follow source-to-tap model
- **Risk Highlighted** - Assets created under JJM may become ineffective if water sources get exhausted
- **Extension of Scheme** - Union Cabinet extended JJM till 2028 with additional funding support * Policy Shift - Focus moving from infrastructure creation to service delivery and governance reforms
- **Digital Initiative** - 'Sujalam Bharat' framework to digitally map water supply systems with unique village IDs
- **Coverage Status** - Scheme achieved -81% coverage; remaining 20% requires substantial additional investment.
- **Progress Since Launch** - Tap connections increased from 3.23 crore (17%) in 2019 to over 12.56 crore households now

Quick Bites:

➢ The Rajiv Gandhi International Airport (RGIA) has once again secured global recognition, winning the 'Best Airport Staff in India and South Asia 2026' award at the Skytrax World Airport Awards.

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- The Kalinga Indoor Stadium in Bhubaneswar will host the 2028 World Athletics Indoor Championships, the Athletics Federation of India (AFI) announced. India last hosted a global athletics event, the World Half-Marathon, in Delhi in 2004.
- Jalgaon, Maharashtra is known as the 'Golden City' and the 'Banana City', and it plays a significant role in the country's horticulture sector. Shri Chouhan announced that the long-pending Banana Cluster' project in Jalgaon has now received approval and will be developed at a cost of 200 crore.

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21-03-2026

PRELIMS ARTICLES:

1. Media Certification and Monitoring Committee (MCMC):

Context: ECI has issued orders requiring any registered political party or any grow organization/association or any contesting candidate/individual to apply to the Media Certificatio Monitoring Committee (MCMC) for pre-certification of all political advertisements on electronic including social media before publication.

More details:

- MCMC Certification: Candidates apply at District MCMC; State/UT parties at State MCMC.
- Timelines: Applications must be submitted within prescribed deadlines.
- Appellate Mechanism: State-level committee headed by CEO hears appeals.
- Pre-certification Mandatory: No political ads (including social media) without MCMC approval.
- Paid News Monitoring: MCMCs track and act against suspected paid news cases.
- Social Media Disclosure: Candidates must declare official accounts in nomination affidavit.
- Expenditure Reporting: Parties must report online campaign expenses within 75 days Representation of the People Act, 1951.

2. Veerangana Rani Avantibai Lodhi:

Context: Union Home Minister and Minister of Cooperation, Shri Amit Shah, pays tribute to Veera Rani Avantibai Lodhi on her martyrdom day.

About Veerangana Rani Avantibai Lodhi:

- Rani Avantibai Lodhi was a queen-ruler of Ramgarh (present-day Dindori).
- She actively opposed the British East India Company during the Indian Rebellion of 1857.

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- She played a key role in mobilization under Gond ruler Shankar Shah.
- She raised and led an army of around 4,000 soldiers during the revolt.
- She defeated British forces led by Deputy Commissioner Waddington at Khairi near Mandla.
- She adopted guerrilla warfare tactics against the British.
- She attained martyrdom (Veergati) on 20 March 1858 at Sukhi-Tallaiya near Ramgarh.

3. Water bankruptcy:

Context: Kaveh Madani, director of the United Nations University Institute for Water, Environment and Health (UNU-INWEH), has been awarded the 2026 Stockholm Water Prize, one of the most prestogopis global honours in water research. Madani is widely known for introducing the concept of "water bankruptcy."

What is Water bankruptcy?

- Water bankruptcy is a long-term condition where water use exceeds natural replenishment.
- It occurs when societies withdraw more water than ecosystems can sustainably supply.
- It leads to irreversible degradation of water resources and ecosystems.
- Water quality declines to levels that cannot be restored to previous conditions.
- It reflects overuse of "hydrological capital" stored in aquifers, glaciers, rivers, soils, and wetlands.
- It represents systemic over-exploitation beyond safe ecological limits.

About World Water day:

- World Water Day 2026, is recognised on March 22 with the theme "Water and Gender" and the campaign slogan "Where Water Flows, Equality Grows".
- It highlights the disproportionate impact of water scarcity on women and girls, advocating for their leadership in SDG 6 (clean water and sanitation).

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4. World Happiness report 2026:

Context: Recently, the Oxford Wellbeing Research Centre published the World Happiness Report 2026 in partnership with Gallup and the UN Sustainable Development Solutions Network on the UN International Day of Happiness (20th March).

What is the World Happiness report?

- The World Happiness Report has been released annually around March 20th as part of the International Day of Happiness celebration.
- The report ranks global happiness basis survey data from people in over 150 countries.
- The ranking uses six key factors to measure happiness - social support, income, health, freedom, generosity, and absence of corruption.
- It is released by the UN Sustainable Development Solutions Network.
- The report was released first in 2012.

Key findings:

- Finland tops the list for the 9th consecutive year, followed by Iceland (2nd) and Denmark (3rd).
- Costa Rica jumps to 4th place, while Israel ranks 8th.
- Afghanistan is the unhappiest (147th), followed by Sierra Leone (146th) and Malawi (145th).
- Among BRICS, China (65th) leads, followed by Russia (79th) and Iran (97th).
- No Anglosphere country in Top 10 for the 2nd year; rankings include New Zealand (11th), Ireland (13th), Australia (15th), United States (23rd), Canada (25th), United Kingdom (29th).
- India ranks 116th (improved from 11^{8th} in 2025).
- India trails neighbours: behind Nepal (99th) and Pakistan (104th), but ahead of Bangladesh (127th) and Sri Lanka (134th).

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About UN Sustainable Development Solutions Network:

- The SDSN mobilises global scientific and technological expertise to promote practical problem solving for the Sustainable Development Goals (SDGs).
- Launched in 2012.
- It was established under the auspices of the United Nations Secretary-General.
- It is headquartered in New York.

5. Variable rate repo (VRR) auction:

Context: The Reserve Bank of India (RBI) injected 225,101 crore transient liquidity in the banking system through a three-day variable rate repo (VRR) auction.

What is a Variable rate repo (VRR) auction?

- **Variable Rate Repo (VRR):** Liquidity injection tool where interest rate is decided via auction (market-driven).
- It allows central banks (e.g., RBI) to inject or absorb liquidity from the banking system while letting market forces determine the cost of funds.
- The primary purpose of a Variable Rate Repo (VRR) auction conducted by the Reserve Bank of India (RBI) is to manage liquidity in the banking system. This involves injecting short-term liquidity into the system when there is a deficit or absorbing excess liquidity when there is a surplus.
- By conducting VRR auctions, the RBI aims to maintain financial stability and ensure that money market interest rates evolve systematically. This helps in managing the overall liquidity conditions in the economy and supports the smooth functioning of the banking system.
- **Variable Rate Reverse Repo (VRRR):** Liquidity absorption tool where banks park funds with RBI through auction-based variable rates.
- **Reverse Repo Rate:** Fixed rate at which banks deposit excess funds with RBI (no auction).

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- **Repo Rate:** Fixed rate at which RBI lends money to banks for short-term needs.

MAINS SPECIFIC ARTICLES:

1. The Central Armed Police Forces (General Administration) Bill, 2026: (GS paper 3)

Context: CAPF Bill gives priority to IPS officers; govt. says new law will curb litigation.

More about:

- **Context:** The Central Armed Police Forces (General Administration) Bill, 2026 is set to be introduced in Parliament to regulate appointments and service matters in CAPFs.
- **Key Provision:** Mandates IPS deputation-50% of Inspector General posts, at least 67% of Additional Director General posts, and 100% of Special DG & DG posts to be filled by IPS officers.
- **Current Practice:** Earlier, such deputations were governed by executive orders; the Bill seeks to give them statutory backing.
- **Supreme Court Judgment (2025):** The court directed the government to progressively reduce IPS deputation in CAPFS up to IG level.
- **Objective of Bill:** To override the Supreme Court directive and formalize IPS presence in CAPFS.
- **Government Justification**: Ensures better coordination with states and strengthens Centre-State relations in national security matters.
- **Administrative Rationale**: Aims to create a unified legal framework and reduce litigation arising from fragmented service rules.
- **Opposition by CAPF Officers:** Retired officials argue the Bill discriminates against cadre officers and undermines their career growth.
- **Career Stagnation Issue:** CAPF officers face slow promotions, taking 15-18 years to reach first promotion due to limited senior posts.

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- **Operational Concern:** CAPF cadre officers highlight that despite leading operations, they are denied leadership roles at higher levels.

Quick Bites:

- "e-CHARAK" is a platform to enable information exchange between various stakeholders mainly farmers involved in the medicinal plants sector across the country. The "e-CHARAK" application supports different local languages and it also provides a fortnightly market price of 100 medical plants from 25 herbal markets across India.
- National Productivity Council (NPC), an autonomous organisation under the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry, Government of India, has signed an Agreement with the Ministry of Environment, Forest and Climate Change (MoEF&CC) to act as the Environment Audit Designated Agency (EADA) under the Environment Audit Rules, 2025.
- In a major reform aimed at improving the quality of dental education and aligning it with global standards, the Government of India has constituted the National Dental Commission (NDC) along with three autonomous boards, replacing the Dental Council of India (DCI).
- A Pilot Plant for the manufacture of Nd-Fe-B (Neodymium-Iron-Boron) rare earth permanent magnets established at the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad, an autonomous institution of the Department of Science and Technology (DST), Government of India.
- The Indian Army's Southern Command recently conducted Exercise Amogh Jwala at the Babina Field Firing Ranges, Uttar Pradesh highlighting advanced mechanised warfare capabilities.

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22-03-2026

PRELIMS ARTICLES

1. Nilgiri tahrs:

Context: Once a hub of encroachers, Chokramudi hills are now a thriving habitat for Nilgiri tahrs and Neelakurinji; govt. had reclaimed the land after residents protested against illegal construction.

More about:

- **Location & Context:** Chokramudi hills in Bison Valley panchayat near Munnar (Idukki, Kerala) transformed from encroached land to natural habitat.
- **Earlier Situation (2024):** Area was a hub of encroachments and illegal activities.
- **Encroachment Issue:** 14.69 acres purchased and illegally divided into 60+ plots; illegal road construction, tree felling, and check dam built.
- **Local Resistance:** Residents formed "Chokramudi Protection Council" to oppose encroachments.
- **Government Action (2025):** Revenue Department cancelled 13.69 acres of land titles (March 2025); additional 1.05 acres reclaimed by August 2025; illegal resort seized.
- **Environmental Recovery:** Removal of encroachments and unregulated tourism led to ecological restoration.
- **Outcome:** Area now emerging as a thriving habitat for endangered Nilgiri tahrs.

About Nilgiri Tahr:

- It is a mountain ungulate endemic to the southern part of the Western Ghats.
- It is also known as Nilgiri Ibex and locally, the animal is called as "Varayaadu".
- The Adult males of Nilgiri Tahr species develop a light grey area or "saddle" on their backs and are hence called "Saddlebacks"

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- It is the state animal of Tamil Nadu.
- Eravikulam National Park is home to the largest population of this Tahr.
- It is listed as Endangered in IUCN and protected under schedule 1 of Wildlife Protection Act.
- A little over 3,100 Nilgiri tahrs were believed to be living in highly fragmented habitats in the Western Ghats in Tamil Nadu and Kerala, ranging between the Nilgiris in the north and the Kanniyakumari hills in the south.

2. Diego Garcia:

Context: Britain has condemned "Iran's reckless attacks" after its military fired missiles at the U.K.-U.S. air base on the island of Diego Garcia in the Indian Ocean.

About Diego Garcia:

- Diego Garcia: Largest coral atoll of the Chagos Archipelago, located about 7° south of the equator.
- Leased to the US and UK in 1967; developed into a major military base by 1986.
- In 2024, the UK agreed to transfer sovereignty of the Chagos Islands to Mauritius while retaining the base on a 99-year lease.



- Follows the 2019 International Court of Justice ruling supporting Mauritius' claim.

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- Key strategic hub in the Gulf War, Iraq & Afghanistan wars, and post-9/11 operations, highlighting Indo-Pacific importance.

About Chagos Archipelago:

- **Chagos Archipelago:** Located about 500 km south of the Maldives; consists of 58 islands.
- **History:** Settled in the late 18th century by the French using enslaved African and Indian labour on coconut plantations.
- **Colonial Transfer:** Under the Treaty of Paris, France ceded Chagos and Mauritius to Britain.
- **1965 Reorganization:** Britain separated Chagos from Mauritius to form the British Indian Ocean Territory, compensating Mauritius £3 million.
- **Displacement:** Indigenous Creole-speaking Chagossians were forcibly removed in the 1960s-70s to establish a military base on Diego Garcia.
- **Post-Independence Status:** Despite Mauritius gaining independence in 1968, Chagos remained under British control.

3. Gas fields in news due to war crisis:

Middle East/West Asia Conflict (Israel-Iran-Gaza War):

- **South Pars Gas Field:** World's largest gas field; recently hit in strikes disrupting ~100 million cubic meters/day production.
- **North Field:** Extension of South Pars; key LNG hub at Ras Laffan; also impacted in recent tensions.
- **Leviathan Gas Field:** Major Eastern Mediterranean field; expansion plans but affected by regional instability.
- **Tamar Gas Field:** Key Israeli supply field; subject to shutdowns during conflict.
- **Karish Gas Field:** Operated by Energean; production disruptions due to war.

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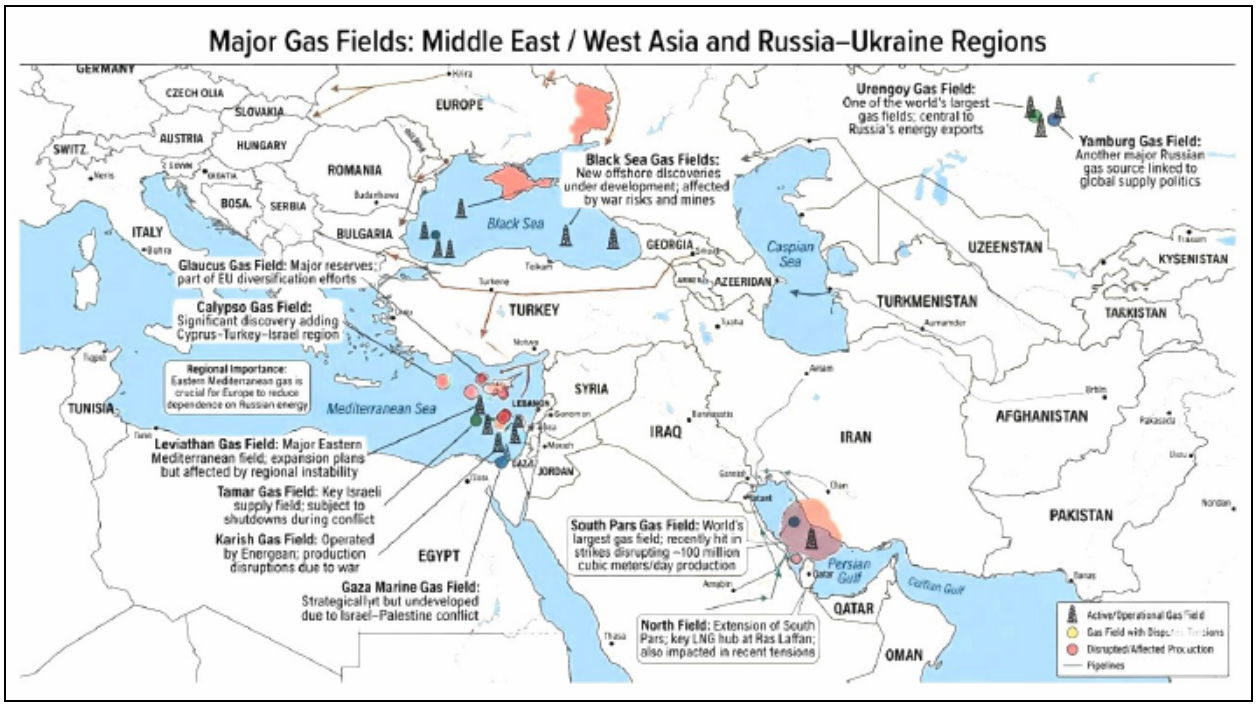
- **Gaza Marine Gas Field:** Strategically important but undeveloped due to Israel-Palestine conflict.



Eastern Mediterranean (Geopolitical Competition Zone):

- **Aphrodite Gas Field:** Disputed resource among Cyprus-Turkey-Israel region.
- **Calypso Gas Field:** Significant discovery adding to regional tensions.
- **Glaucus Gas Field:** Major reserves; part of EU diversification efforts.
- **Regional Importance:** Eastern Mediterranean gas is crucial for Europe to reduce dependence on Russian energy.

Russia-Ukraine War Region

- **Black Sea Gas Fields:** New offshore discoveries under development; affected by war risks and mines.
- **Urengoy Gas Field:** One of the world's largest gas fields; central to Russia's energy exports.
- **Yamburg Gas Field:** Another major Russian gas source linked to global supply politics

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4. INS Taragiri (F41):

Context: Indian Navy is preparing to commission its latest stealth Frigate, Taragiri (F41), on 03 Apr 2026.

About INS Taragiri:

- **INS Taragiri:** Fourth frigate of the Project 17A class of the Indian Navy.
- Built by Mazagon Dock Shipbuilders Limited with over 75% indigenous content.
- Displacement of 6,670 tonnes showcasing advanced indigenous shipbuilding capability.
- Designed with reduced Radar Cross-Section for enhanced stealth operations.
- Powered by Combined Diesel or Gas (CODOG) propulsion for high-speed and endurance.
- Equipped with supersonic surface-to-surface missiles and medium-range surface-to-air missiles.
- Features advanced anti-submarine warfare (ASW) capabilities.
- Integrated with a modern Combat Management System for real-time threat response.
- Supported by a domestic ecosystem of 200+ MSMEs under Aatmanirbhar Bharat.
- Capable of multi-role operations including combat and humanitarian assistance (HADR).

MAINS SPECIFIC ARTICLES:

1. Asphyxiating an island nation: (GS paper 2)

Context: The Hindu Explainer.

- **Geopolitical Context:** Energy shipments to Cuba by Russia amid tensions with the United States.
- **Oil Shipments:** Russian tanker Anatoly Kolodkin carrying ~7,30,000 barrels of crude heading to Cuba; another ship Sea Horse earlier halted mid-Atlantic fearing U.S. repercussions.
- **Energy Crisis in Cuba:** Nationwide grid collapse left ~10 million people without power; severe disruptions in transport, flights, industries, schools and daily life.

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- **Structural Dependence on Oil:** Oil accounts for 83% of electricity generation and 56% of total energy consumption.
- **Decline in Oil Supplies:** Dependence on Venezuela reduced (75% in 2022 to 58% in 2023); Mexico emerged as key supplier but halted shipments after U.S. pressure.
- **U.S. Measures:** Donald Trump imposed punitive tariffs (Jan 29 order) and threatened further action against Cuba.
- **Historical Embargo:** U.S. embargo began in 1962 post Cuban Revolution; strengthened by Torricelli Act and terrorism designation in 2021.
- **Economic Impact:** Long-term sanctions led to repeated crises, including the 'Special Period' after Soviet collapse with 35% GDP fall (1989-93).
- **Current Negotiations:** Talks reported between U.S. and Cuba; U.S. demanding resignation of President Miguel Díaz-Canel.
- **Government Response:** Cuba remains defiant, asserting sovereignty and resistance despite economic hardship.

2. Israel attack on lebanon: (GS paper 2)

Context: On March 16, Israel announced the launch of a ground offensive in Lebanon against Hezbollah. It has also carried out massive air strikes in southern Lebanon and the southern outskirts of Beirut.

- **Trigger Factors:** Collapse of 2024 ceasefire; escalation after killing of Ali Khamenei (Feb 2026) led to Hezbollah rocket attacks and Israeli retaliation.
- **Background Tensions:** Conflict roots in Gaza war (post-Oct 7, 2023 attack) and earlier Israeli strikes, including killing of Hassan Nasrallah in 2024.
- **Origin of Hezbollah:** Emerged after Israeli invasions (1978, 1982) and linked to Palestine Liberation Organisation presence; backed by Iran.

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- **Historical Conflicts:** Israel withdrew from Lebanon in 2000 after guerrilla resistance; 2006 war ended in stalemate, strengthening Hezbollah politically and militarily.
- **Hezbollah's Strength:** Possesses large missile arsenal; experienced from Syrian civil war support to Bashar al-Assad; operates as a "state within a state".
- **Recent Weakening:** Leadership losses, Israeli strikes, and fall of Assad regime disrupted Iran-Hezbollah supply chain.
- **Israel's Objectives:** Destroy Hezbollah capabilities, push fighters north of Litani River, create buffer zone, and pressure Lebanese government to disarm Hezbollah.
- **Hezbollah's Response:** Continued rocket/drone attacks (~1,000+) and strong resistance in southern Lebanon (e.g., Khiam region).
- **Human Impact:** Civilians in Lebanon heavily affected; large-scale displacement and humanitarian crisis.

Quick Bites:

- India Achieves 1 Billion Tonne Coal Production Milestone second year in a row, Strengthening Energy Security of the Country.
- The National Zoological Park celebrated the International Day of Forests with enthusiastic public participation, drawing around 18,000 visitors and engaging nearly 1,500 people in conservation-themed activities. The International Day of Forests 2026 is celebrated on March 21, 2026. The theme for 2026 is "Forests and economics", highlighting the critical role forests play in driving economic prosperity, sustainable livelihoods, and providing nature-based solutions for green growth.
- The Ministry of Environment, Forest and Climate Change (MoEFCC) convened a high-level meeting on the Bhagirathi Eco-Sensitive Zone (BESZ), in Dehradun, Uttarakhand.
- In pursuance of the directions of the National Green Tribunal, the National Biodiversity Authority (NBA) has constituted an Expert Committee on Invasive Alien Species to address the growing

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ecological and socio-economic risks posed by such species across the country. The Committee is chaired by Shri Dhananjai Mohan, IFS (Retd.), former PCCF and Head of Forest Force, Uttarakhand.

- The International Conference on Carbon Markets- Prakriti 2026, the flagship event of the Government of India, organized by the Bureau of Energy Efficiency under the patronage of the Ministry of Power and Ministry of Environment, Forest and Climate Change, commenced in New Delhi. The conference, organised as part of Bharat Electricity Summit 2026, provides a high-level platform to deliberate on the evolving dynamics of carbon markets, their role in climate action, and opportunities for India's green growth.
- A recent scientific study has highlighted a growing environmental concern in coastal ecosystems, revealing that a majority of mangrove sites worldwide are already experiencing mild to severe hypercapnic hypoxia. Hypercapnic hypoxia refers to a condition characterised by elevated carbon dioxide (CO:) levels and reduced dissolved oxygen in water.
- The Irul tribe, one of India's oldest indigenous communities, recently marked the auspicious occasion of Masi Magam, a significant day in the Tamil calendar.
- Nobel Peace Prize laureate Kailash Satyarthi has recently released his new book titled "Karuna: The Power of Compassion," highlighting the transformative role of compassion in addressing global challenges.
- Indian mountaineer Bhupathiraju Anmish Varma has achieved a remarkable feat by setting a world record for climbing the Seven Volcanic Summits in the shortest time.
- Renowned Indian actress Rituparna Sengupta has been honoured with the Women Empowerment Award for Art and Culture at the House of Commons, UK.
- Tamil Nadu has emerged as India's leading state in textile exports, recording shipments worth USD 7,997.17 million in the financial year 2024-25.

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23-03-2026

PRELIMS ARTICLES:

1. Minor Planet Centre (MPC):

Context: Last week, the Minor Planet Centre (MPC) announced 15 new moons had been found, four around Jupiter and II around Saturn.

About Minor Planet Centre (MPC):

- The Minor Planet Center is the world's main repository for observations of small solar system bodies.
- It is located in Cambridge, Massachusetts, at the Smithsonian Astrophysical Observatory under the International Astronomical Union.
- The MPC tracks asteroids, comets, and moons of outer planets.
- Astronomers submit new object data to MPC for verification and orbit calculation.
- MPC assigns official designations to newly discovered minor planets.
- It ensures each object has a unique identity and predictable orbit.
- MPC plays a key role in monitoring Near-Earth Objects (NEOS).
- NEOS are space objects that may pose a threat to Earth.
- MPC works with NASA Planetary Defense Coordination Office to predict potential impacts.
- It maintains a large database to track close approaches to Earth.
- MPC publishes electronic circulars to share new discoveries.
- These updates help global observatories coordinate observations and research.

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2. Guru Angad:

Context: Union Home Minister and Minister of Cooperation Shri Amit Shah pays tributes to the second Sikh Guru, Shri Angad Dev Ji, on the occasion of his Jyoti-Jyot Diwas.

About Guru Angad:

- Guru Angad, originally Lehna, was chosen by Guru Nanak as his successor after years of devoted service, and was given the name "Angad" meaning "my own limb."
- He is remembered in Sikhism for adopting and formalising the Gurmukhi alphabet.
- Instead of his own son, he chose his disciple Amar Das as his successor and the third Guru of Sikhism.
- Humayun visited Guru Angad after losing to Sher Shah Suri; angered by delayed greeting, he was admonished by the Guru for misdirected aggression.
- Guru Angad later blessed Humayun and assured him that he would regain his throne in the future.
- Guru Angad is notable for systematising the institution of langar in all Sikh gurdwara premises, where visitors from near and far could get a free simple meal in a communal seating.
- Guru Angad promoted fitness by establishing Mall Akharas for wrestling, martial arts, and healthy living practices.

3. District Mineral Foundation (DMF):

Context: The Ministry of Mines, Government of India, will organise the National District Mineral Foundation (DMF) Summit 2026 on 23-24 March 2026 at the SCOPE Convention Centre, New Delhi.

- The Summit, titled "Effective Utilization of District Mineral Funds for ADP/ABP Areas", will be inaugurated by Union Minister of Coal & Mines, Shri G. Kishan Reddy.

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About District Mineral Foundation (DMF):

- Mine and Minerals Development Regulation (Amendment) Act, 2015 mandates creation of District Mineral Foundation (DMF) in mining-affected districts as a non-profit trust.
- DMF is funded by contributions from mining lease holders, up to one-third of royalty as prescribed by the Central Government.
- Funds are used for welfare and development of mining-affected communities.
- Keonjhar has the highest DMF collection in India at ₹8,840 crore.
- The objective is to ensure local, often tribal and poor communities benefit from resource extraction.
- Functioning is governed by state DMF Rules aligned with Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY) guidelines.

About Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY):

- Pradhan Mantri Khanij Kshetra Kalyan Yojana is a Ministry of Mines scheme for welfare of mining-affected people using DMF funds.
- It aims to implement development and welfare projects in mining areas alongside existing government schemes.
- It focuses on mitigating environmental, health, and socio-economic impacts of mining.
- It promotes long-term sustainable livelihoods for affected communities.
- At least 60% of funds are allocated to high-priority areas like drinking water, health, education, and environment.
- Remaining funds are used for other areas like infrastructure, irrigation, energy, and watershed development.

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4. Shaheen Falcon:

Context: Shaheen Falcon spotted nesting in an under-construction building in Kochi, highlighting its adaptability to urban habitats.

About Shaheen Falcon:



Habitat distribution

- Shaheen Falcon is a non-migratory subspecies of the Peregrine falcon.
- It has a dark vertical stripe on the face, giving a fierce appearance.
- Females are larger than males with a strong, muscular body.
- It inhabits rocky cliffs, hills, and rock pinnacles.
- Mainly found across the Indian subcontinent and also in the Andaman & Nicobar Islands.
- It primarily feeds on birds, but also eats small mammals, insects, reptiles, and rarely fish.
- Known for high-speed hunting dives (stoop) exceeding 300 km/h.
- Its streamlined body helps achieve extreme speed during hunting.
- It is listed as Vulnerable in IUCN list.

5. Global Terrorism Index 2026:

Context: Recently, the Global Terrorism Index, 2026 was published by the Institute for Economics and Peace (IEP).

About Global Terrorism Index:

- Global Terrorism Index is published by the Institute for Economics and Peace.

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- It analyses the impact of terrorism across 163 countries covering about 99.7% of the global population.
- It ranks countries based on terrorism impact using a composite index.
- Countries are scored on a scale of 0 (no impact) to 10 (highest impact).
- The index provides an ordinal ranking comparing terrorism levels worldwide.

Major highlights of 2026 report:

- Deaths from terrorism fell by 28 per cent and incidents decreased by 22 per cent.
- Six of the ten countries most impacted by terrorism are in sub-Saharan Africa, maintaining its position as the epicenter.
- Pakistan leads the Index as the country most impacted by terrorism followed by Burkina Faso and Niger.
- India is placed 13th on the list.
- **Deadliest terror outfits (2025):** IS, Jamaat Nusrat Al-Islam wal Muslimeen (JNIM), Tehrik-e-Taliban Pakistan (TTP), and alshabaab.

6. Lipulekh Pass:

Context: Cross-border trade between India and China through the Lipulekh Pass in Uttarakhand's Pithoragarh district is set to resume in June, marking a revival of historic economic and cultural exchanges.

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About Lipulekh Pass:

- It is located close to the tri-junction of India, China (Tibet) and Nepal and is situated in Uttarakhand (Pithorgarh district).
- It is a major pass of Kumanun region situated in Kali Valley.
- It became the first Indian border post opened for trade with China in 1992, facilitating regulated exchange of goods.
- Subsequently, other passes such as Shipki La in Himachal Pradesh and Nathu La in Sikkim were also opened to promote cross-border trade.
- It is an important route for the Kailash Mansarovar Yatra.

MAINS SPECIFIC ARTICLES:

1. Agri-photovoltaics (AgriPV): (GS paper 3)

Context & Budget Push - 2026-27 Budget increased PM-KUSUM outlay to ₹5,000 crore (nearly doubled); focus on solar expansion via farmers; aims at energy security, water security, higher incomes, and decarbonisation.

- **Core Issue** - Balancing solar expansion with protection of agricultural land and food security. What is Agri-Photovoltaics (AgriPV)? - Integration of solar panels with farming on the same land;

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panels installed at height or between rows allowing simultaneous crop cultivation and power generation.

- **Types of AgriPV Systems** - Elevated systems (above crops); row-based systems (between rows); vertical systems (upright panels); greenhouse-integrated systems (on roofs/walls).
- **Crop Selection Importance** - Shade-tolerant crops grow under panels; sunlight-demanding crops grow between rows; requires region-specific planning.
- **Examples of Suitable Crops** - Madhya Pradesh: tomato, onion, garlic, turmeric, ginger, leafy vegetables, tulsi; Karnataka & Maharashtra: ragi, jowar, grapes, tomato, potato, chillies, banana, brinjal.
- **Business Models** - Farmers own systems and sell surplus power; FPO-based collective models; private developers lease land/share revenue; government-led projects for local energy needs.
- **Significance for India** - Helps achieve 300 GW solar target by 2030 and net-zero by 2070; reduces land-use conflict; diversifies farmer income; supports rural clean energy.
- **Environmental & Economic Benefits** - Reduces evapotranspiration and improves soil moisture; protects crops from extreme weather, lowers diesel use; supports rural enterprises like cold storage and processing.
- **Current Status in India** - Around 50 pilot projects; still experimental; large-scale rollout yet to begin.
- **Key Challenges** - High capital cost; possible yield reduction; land ownership and revenue-sharing issues; regulatory uncertainty; lack of standard design benchmarks.
- **Policy Pathways** - Proposed National Agri-Photovoltaics Mission (10 GW); viability gap funding; inclusion in PM-KUSUM 2.0; state support through clusters, approvals, and farmer training.
- **Conclusion** - AgriPV enables dual use of land for energy and agriculture; boosts farmer incomes and supports clean energy transition; needs policy clarity and financial support for scaling.

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2. Compulsory voting: (GS paper 2)

Context - Election Commission of India announced Assembly poll schedule (April-May 2026); Supreme Court of India raised issue of mandatory voting.

- **Right to Vote in India** - Article 326 grants voting rights to citizens aged 18+ without discrimination; subject to disqualifications.
- **Legal Provisions** - Section 19 of Representation of the People Act 1950: 18+ and ordinary residence required; Section 62 of Representation of the People Act 1951: only registered voters can vote.
- **Nature of Right** - Supreme Court of India has held that right to vote is a statutory right, not a fundamental right.
- **Compulsory Voting Debate** - Voting is essential for democracy but not a fundamental or legal duty in India; long-standing debate on making it compulsory.
- **Committee View** - Dinesh Goswami Committee opposed compulsory voting due to practical issues; suggested awareness campaigns.
- **Law Commission Findings** - Law Commission of India (255th Report, 2015): compulsory voting can raise turnout by ~7% but depends on strict penalties.
- **Global Practices** - Countries like Australia, Argentina, Brazil impose fines; Peru restricts access to certain services for non-voters.
- **Challenges in India** - Penalising non-voters is harsh and impractical; may violate Article 19(1)(a) (right to expression includes right not to vote).
- **Issues with Low Turnout** - Leads to candidates winning with minority vote share in constituencies.
- **Way Forward** - Encourage voluntary participation through awareness and social media campaigns; ensure statutory holiday for migrant workers; improve transport facilities; explore secure remote voting technologies.

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3. A gas grid India never built: (GS paper 3)

Context: Energy Crisis & Historical Parallel - Ongoing West Asia war triggered global energy crisis; India faces LPG supply disruption from Persian Gulf; situation compared to 1973 Oil Shock caused by OPEC during the Yom Kippur War.

- **Early Vision of Coal Gasification** - Idea proposed in 1955 by Syed Husain Zaheer to Jawaharlal Nehru for a national gas grid using gasified coal.
- **Technology Explained** - Coal gasification converts coal into fuel gas through high-pressure processes; impurities like sulphur are removed; gas is purified for domestic and industrial use.
- **Town Gas Supply Scheme** - Proposed gasification plant at Kothagudem using Singareni coal; pipeline to Hyderabad and nearby towns; aimed to supply clean fuel via a 290-km network.
- **Initial Resistance & Challenges** - Lack of support from government bodies like CSIR and Planning Commission; focus remained on petroleum, nuclear, and hydropower; concerns over long-distance gas transport feasibility.
- **Project Delays** - Wars of 1962 and 1965, import issues, and rupee devaluation delayed pilot plant; project halted after Zaheer's tenure; review committees opposed continuation.
- **Revival After Oil Shock** - 1973 oil crisis revived interest in coal-based energy; Indira Gandhi later acknowledged missing early opportunity to adopt coal gasification.
- **Shift to Advanced Technology (IGCC)** - Pilot plant used for Integrated Gasification Combined Cycle (IGCC); combines coal gasification with electricity generation using syngas and turbines; first IGCC plant commissioned in 1985 by BHEL.
- **Structural Issues in R&D** - Early fuel research lacked funding, policy support, and industry linkages; long-term energy planning was neglected.
- **Renewed Focus on Clean Coal** - Climate concerns revived interest in coal gasification; India launched National Coal Gasification Mission targeting 100 million tonnes gasification by 2030.
- **Recent Developments** - 285,000 crore investment committed; Coal India Limited and BHEL formed Bharat Coal Gasification & Chemicals Ltd. (2024).

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- **Conclusion -** Coal gasification offers energy security and import reduction; delayed adoption shows importance of long-term policy vision and investment in indigenous technologies.

Quick Bites:

- **Places in news due to war:** Arad, Dimona, Natanz in Israel and Potapivka in Ukraine captured by Russia. South Sudan has once again moved towards instability as fresh clashes between government forces and opposition groups intensify in Akobo. At least 64 people were killed, including at least 13 children, in a strike on a hospital in Sudan's western Darfur region last week, the World Health Organization said.
- Scientists from the Botanical Survey of India (BSI) have identified a new species of wild kiwi named "Actinidia indica" in Arunachal Pradesh near Ziro valley.
- The Union Finance Minister has launched 'PRARAMBH 2026" (PRARAMBH stands for Policy Reform and Responsible Action for Mission Viksit Bharat), a nationwide awareness campaign aimed at educating citizens about the provisions of the Income Tax Act, 2025. The initiative comes ahead of the Act's implementation from April 1, 2026, and seeks to ensure smooth adoption through widespread public engagement and simplified communication. A notable feature, an AI-enabled chatbot 'Kar Saathi', which provides real-time assistance on tax-related queries was also launched.
- The President of India recently extended greetings on the occasion of Sarhul, a significant Adivasi festival celebrated with great devotion in Jharkhand and neighbouring regions. The Madras High Court has issued 34 directives for the eradication of Prosopis juliflora, an invasive alien species, from Tamil Nadu. Prosopis juliflora is a shrub or small tree belonging to the Fabaceae family, commonly known as mesquite. It is native to Mexico, South America, and the Caribbean.

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- Chapchar Kut is a spring festival of Mizoram celebrated after jhum cultivation clearing. It reflects the agrarian lifestyle and cultural traditions of the Mizo community. Cheraw or bamboo dance is a major feature of the festival.
- Pondicherry University has launched a mobile application named 'Blue Voice' to improve safety and disaster preparedness among coastal fishing communities.

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24-03-2026

PRELIMS ARTICLES:

1. Women's Reservation Act, 2023:

Context: The Union government has indicated that it will bring an amendment Bill proposing a delimitation exercise based on the 2011 Census to ensure the implementation of the Women's Reservation Act, 2023, ahead of the 2029 Lok Sabha election. Under the proposed amendments, the number of Lok Sabha seats will increase from 543 to 816, with 273 seats, 33%, reserved for women.

About Women's Reservation Act, 2023:

- Nari Shakti Vandan Adhiniyam (128th Amendment) Bill, 2023 was introduced in Lok Sabha on 19 September 2023 during the special session of Parliament.
- Reservation for women: The Bill reserves, as nearly as may be, one-third of all seats for women in Lok Sabha, state legislative assemblies, and the Legislative Assembly of the National Capital Territory of Delhi. This will also apply to the seats reserved for SCs and STS in Lok Sabha and state legislatures.
- Commencement of reservation: The reservation will be effective after the census conducted after the commencement of this Bill has been published. Based on the census, delimitation will be undertaken to reserve seats for women. The reservation will be provided for a period of 15 years. However, it shall continue till such date as determined by a law made by Parliament. Rotation of seats: Seats reserved for women will be rotated after each delimitation, as determined by a law made by Parliament.
- Article 239AA to be amended for implementing women's reservation in Delhi.
- New Article 330A provides reservation of seats for women in the Lok Sabha.

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- New Article 332A provides reservation of seats for women in State Legislative Assemblies.
- New Article 334A provides that women's reservation will cease after 15 years (sunset provision).

2. Tuberculosis:

Context: World Tuberculosis Day 2026 is celebrated on March 24, 2026. The theme for World TB Day 2026 is "Yes! We can end TB!," continuing the theme from previous years to emphasize that ending the epidemic is possible through leadership, investment, and new WHO recommendations.

About Tuberculosis:

- Tuberculosis is an infection caused by Mycobacterium tuberculosis.
- It can practically affect any organ of the body.
- The most common ones are lungs, pleura (lining around the lungs), lymph nodes, intestines, spine, and brain.
- It is an airborne infection that spreads through close contact with the infected.
- TB is a treatable and curable disease.
- It is treated with a standard 6-month course of 4 antimicrobial drugs.
- BCG was developed by two Frenchmen, Albert Calmette and Camille Guerin, by modifying a strain of Mycobacterium.
- It was first used in humans in 1921.
- In India, BCG was first introduced in a limited scale in 1948 and became a part of the National TB Control Programme in 1962.
- In addition to its primary use as a vaccine against TB, it protects against respiratory and bacterial infections of the newborns, and other mycobacterial diseases like Leprosy.

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3. Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention):

Context: The 15th Meeting of the Conference of the Parties (COP15) to the UN Convention on the Conservation of Migratory Species (CMS) begins in Campo Grande, Brazil, on March 23-29, 2026, under the theme "Connecting Nature to Sustain Life".

About Conservation of Migratory Species (CMS):

- It is the only global and UN-based intergovernmental organization established under the aegis of UNEP exclusively for conservation and management of terrestrial, aquatic and avian migratory species throughout their range.
- Enforcement Year: Signed in 1979 and came to force on November 1, 1983
- Appendix I list migratory species that are endangered or threatened with extinction.
- Appendix II list migratory species which have unfavourable conservation status and which require international agreements for their conservation and management.
- It includes legally binding agreements as well as non-binding Memorandum of Understandings (MoUs) based on specific conservation needs.
- India has been a party to the Convention since 1983.
- "India has signed a non-legally binding Memorandum of Understanding (MoU) with CMS on conservation and management of Siberian Cranes (1998), Marine Turtles (2007), Dugongs (2008), and Raptors (2016).
- CoP 13 happened in Gandhinagar, Gujarat in 2020.

4. Centre launches AI skilling drive with Google, YouTube:

Context: Union Minister Ashwini Vaishnaw unveiled three new initiatives aimed at strengthening India's media, broadcasting, and digital sector and promoting the "orange economy", or the creative economy.

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More about:

- **Launch of Creative Economy Initiatives:** Ashwini Vaishnaw unveiled three initiatives to boost media, broadcasting, and digital sectors and promote the "orange economy" (creative economy).
- **Creative Economy Concept:** Refers to industries generating economic value through creativity, culture, technology, and intellectual property.
- **National Al Skilling Initiative:** Launched in partnership with Google and YouTube via Indian Institute of Creative Technologies to train ~15,000 youth free of cost in Al skills.
- **AI Training Phases:** Phase I (Mar-Jun 2026) focuses on foundational AI courses like AI Essentials and Generative AI; Phase II (Jul-Dec 2026) offers advanced project-based training including storytelling and AI tools like Gemini 3 and Vertex AI.
- **MyWAVES Platform:** Citizen creator platform on WAVES OTT enabling users to create, upload, and share content, supporting digital creators.
- **DD Free Dish Enhancement:** Introduction of advanced Electronic Programme Guide and in-built satellite tuners in TV sets to improve accessibility without extra equipment.
- **Promotion of Digital Inclusion:** Initiative aligns with the vision of Narendra Modi to democratise technology and make it affordable and accessible.
- **Creators' Corner Scheme:** Encourages creators to use Doordarshan and MyWAVES to showcase India's culture and diversity.
- **Industry Collaboration:** Initiative supported by media industry stakeholders and YouTube India leadership to enhance opportunities in the creative sector.

5. Shaheed Diwas 2026:

Context: Prime Minister Shri Narendra Modi paid rich tributes to the great freedom fighters, Bhagat Singh, Rajguru, and Sukhdev, on the occasion of Shaheed Diwas.

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About Shaheed Diwas:

- Shaheed Diwas 2026 commemorates the sacrifice of Bhagat Singh, Sukhdev Thapar, and Shivaram Rajguru executed on 23 March 1931.
- The day is observed nationwide to honour their courage and contribution to India's freedom struggle.
- It highlights that independence was achieved through immense sacrifice and struggle.
- It reminds citizens, especially youth, of their responsibility in nation-building.
- The theme for 2026 is "Mera Bharat Meri Zimmedari".
- The theme emphasises youth responsibility and active civic participation.
- It connects past sacrifices with present duties and encourages conscious action.
- It promotes constructive contributions by citizens towards India's development.

6. Ram Manohar Lohia:

Context: Lok Sabha Speaker Shri Om Birla paid floral tributes to Dr. Ram Manohar Lohia in the Central Hall of Samvidhan Sadan on the occasion of his birth anniversary.

About Ram Manohar Lohia:

- Ram Manohar Lohia, born in 1910, was a prominent leader of India's socialist movement and freedom struggle.
- He joined the Congress Socialist Party in 1934, served on its executive committee, and edited its journal.
- He opposed British participation in World War II and was jailed multiple times, especially during the Quit India Movement.
- He left the Indian National Congress in 1948 and joined the Praja. Socialist Party in 1952, serving briefly as general secretary before resigning in 1955.

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- In 1955, he led the formation of the Socialist Party of India at Hyderabad, which later became the Samyukta Socialist Party in 1964.
- In 1963, he entered the Lok Sabha and advocated the concept of Sapta Kranti focusing on equality and freedom.
- He proposed the idea of Chaukhambha Raj for decentralised governance.

MAINS SPECIFIC ARTICLES:

1. Foreign Contribution (Regulation) Act:

Context: The Union government is likely to amend the Foreign Contribution (Regulation) Act in the ongoing Parliament session.

Amendments proposed:

- Appointment of a "designated authority" to take over, manage or dispose of assets created out of foreign funds by an NGO or association, which has had its FCRA registration suspended, cancelled, or not renewed.
- Expanding the definition of "key functionary" of an NGO beyond an "office bearer/director" to include directors; partners; trustees; the karta (head) of a Hindu Undivided Family; office-bearers or members of the governing body or managing committee of a society, trust, trade union or association; and any other person who has control over or responsibility for the management or affairs of such an organisation.

About Foreign Contribution (Regulation) Act:

- This act was enacted during the Emergency in 1976 amid apprehensions that foreign powers were interfering in India's affairs by pumping money into the country through independent organisations.
- The FCRA requires every person or NGO seeking to receive foreign donations to be:

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- Registered under the Act
- To open a bank account for the receipt of foreign funds in the State Bank of India, Delhi.
- To utilise those funds only for the purpose for which they have been received and as stipulated in the Act.

- The applicant should not be fictitious or benami.
- Should not have been prosecuted or convicted for indulging in activities aimed at conversion through inducement or force.
- Once granted, FCRA registration is valid for five years. NGOs are expected to apply for renewal within six months of the date of expiry of registration.
- Registration can be cancelled if an inquiry finds a false statement in the application.
- Once the registration of an NGO is cancelled, it is not eligible for re-registration for three years.
- The ministry also has the power to suspend an NGO's registration for 180 days pending inquiry and can freeze its funds.
- All orders of the government can be challenged in the High Court.

Quick Bites:

- World Meteorological Day 2026 is celebrated on March 23, 2026, with the theme "Observing Today, Protecting Tomorrow". This theme highlights the critical role of advanced Earth monitoring systems such as satellites and radars and climate data in building resilience, strengthening early warnings.
- More than 1,300 people have died from hunger in displacement camps in Ethiopia's volatile Tigray region over the past three years.
- The Indira Gandhi National Centre for Arts (IGNCA) has published a book titled "Janjati Gaurav" as part of its efforts to document and disseminate knowledge on the history, culture, and contributions of India's tribal communities.

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- The traditional "Peth" festival of goddess Kelbai is being observed at Mulgao in Bicholim, Goa. The festival reflects deep-rooted cultural and religious beliefs of the region, drawing devotees who participate in a unique ceremonial journey symbolising the annual reunion of the goddess with her sister.
- India has achieved a significant milestone in livestock biotechnology with the successful production of Sahiwal cattle calves using advanced reproductive techniques. Scientists at the Indian Council of Agricultural Research-Indian Veterinary Research Institute (ICAR-IVRI), Izatnagar, Bareilly. Sahiwal cattle are regarded as one of India's best indigenous milch breeds. The breed originates from the Sahiwal region of Punjab in present-day Pakistan.
- Researchers from the Zoological Survey of India have identified a new species of marine crab from the mangrove ecosystems of Goa named Chhapgarus ngankecac.
- The Assam government has proposed the creation of a new Reserved Forest adjacent to Bura Chapori Wildlife Sanctuary in Sonitpur district. This move aims to enhance habitat connectivity and strengthen conservation within a crucial ecological landscape along the Brahmaputra river. Recent Israeli airstrikes have destroyed the Qasmiyeh Bridge, a crucial crossing over Lebanon's Litani River along the southern coastal highway.

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25-03-2026

PRELIMS ARTICLES:

1. Annual Survey of Unincorporated Sector Enterprises (ASUSE) Results for 2025:

Context: The Ministry of Statistics and Programme Implementation (MOSPI) has released the results of Annual Survey of Unincorporated Sector Enterprises (ASUSE) for 2025 for the reference period January, 2025 - December, 2025 referred to as ASUSE 2025.

About Annual Survey of Unincorporated Sector Enterprises (ASUSE)

- ASUSE measures economic and operational features of unincorporated non-agricultural enterprises.
- It covers sectors like manufacturing, trade, and services (excluding construction).
- Conducted to capture data on the informal/unorganized sector.
- Collects key indicators such as workers, GVA, wages, assets, and loans.
- Gathers operational details like ownership type, registration, and ICT usage.
- Supports compilation of National Accounts Statistics (GDP estimation).
- Provides inputs for policymaking and sectoral planning.
- Helps ministries like MSME and Textiles in decision-making.
- Assists stakeholders in understanding informal sector dynamics.

Key highlights of the report:

- The total number of establishments in the sector increased substantially from 7.34 crore in ASUSE 2023-24 (Oct 23-Sept 24) to 7.92 crore in ASUSE 2025 (Jan 25 -Dec 25), representing a healthy 7.97% growth.

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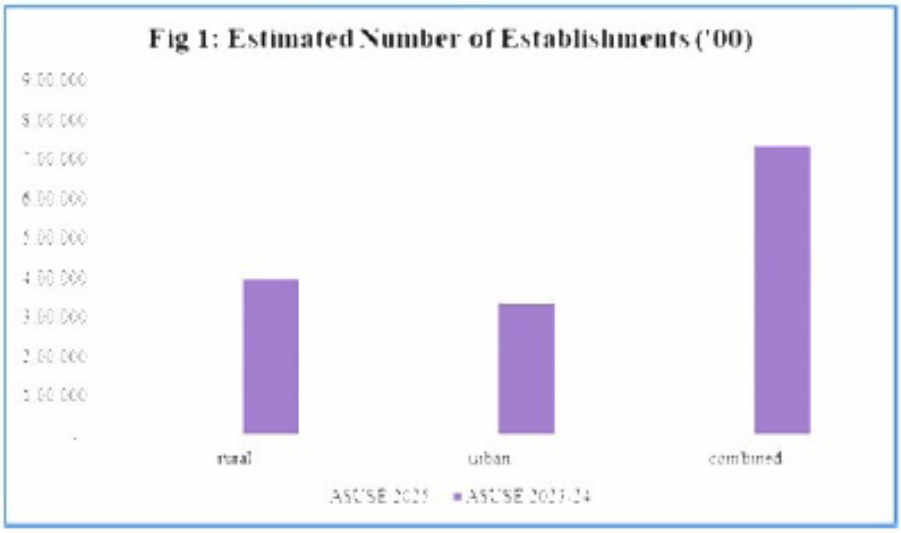
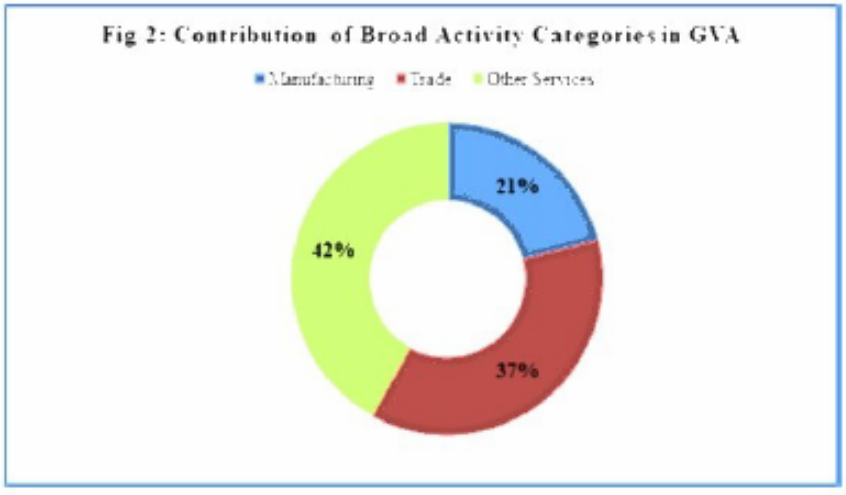


- During the same period, the Gross Value Added (GVA) which is a key indicator of economic performance rose by 10.87% driven by 16.77% growth in trade sector followed by 8.52% growth in manufacturing and 7.36% growth in other services sectors.
- Among the broad sectors, however, other services sector had the highest share in GVA (42%) followed by trade (37%) and manufacturing (21%).



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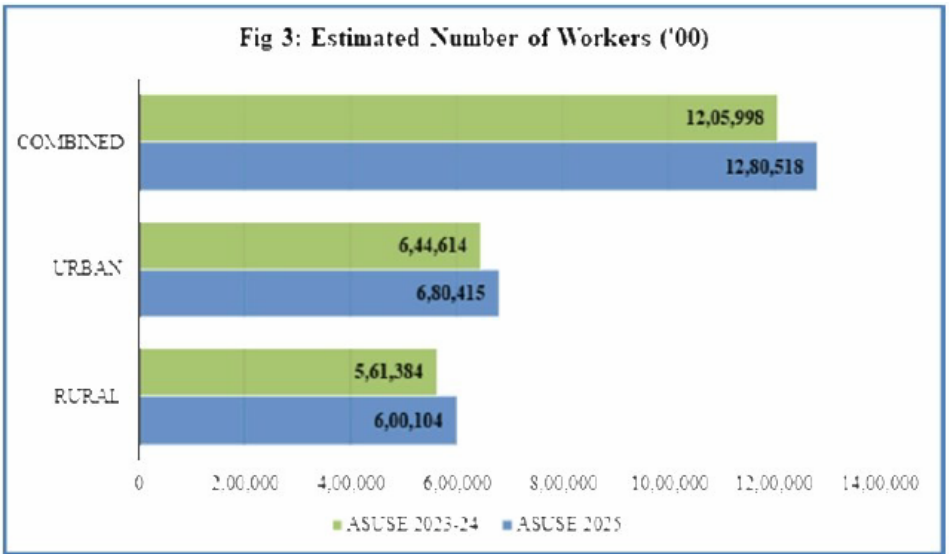
- Gross Value Added (GVA) per worker which is a measure of labour productivity of the sector, rose to Rs. 1,56,539 in 2025 from. Rs. 1,49,742 in 2023-24 in current prices showing a 4.54% increase.
- During the same period, the Gross Value Added (GVA) per establishment also increased from Rs. 2,45,687 to Rs. 2,52,699.



- The percentage of female-owned proprietary establishments increased marginally from 26.2 per cent in 2023-24 to 27.0 per cent in ASUSE 2025 pointing to an encouraging trend in women-led enterprises.
- Percentage of establishments using internet has also grown significantly from 26.7% in 2023-24 to 39.4% in ASUSE 2025.

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Comparison:

Indicator	ASUSE 2022-23 (October, 2022 September, 2023)	ASUSE 2023-24 (October, 2023-September, 2024)	ASUSE 2025 (January, 2025-December, 2025)
(1)	(2)	(3)	(4)
Number of Establishments (in '00)	6,50,484	7,33,995	7,92,465
Number of Workers (in '00)	10,96,260	12,05,998	12,80,518
Gross Value Added (Rs. Crore)	15,42,409	17,97,278	19,92,577
GVA per establishment (Rs.)	2,38,168	2,45,687	2,52,699
GVA per worker* (Rs.)	1,41,769	1,49,742	1,56,539
Emolument per Hired Worker (Rs.)	1,24,842	1,41,071	1,46,550

2. BioPharma SHAKTI:

Context: The Northwick Park Tragedy and later failures like semorinemab in Alzheimer's trials highlight the limitations of animal models in predicting human responses to biologics such as monoclonal antibodies, vaccines and insulin; as these complex, cell-derived drugs gain global importance in treating chronic diseases, India's Union Budget 2026 has introduced the Biopharma SHAKTI strategy to strengthen domestic production of biologics and biosimilars.

More about:

- **Concept of NAMS (Human-Relevant Models)** - Non-animal methodologies (NAMs) are advanced lab-based systems used globally to reduce animal testing; countries like the U.K. are promoting their adoption, and India enabled them through the New Drugs and Clinical Trials (Amendment) Rules 2023
- **Limitations of Animal Models** - Biologics are highly specific and interact with human receptors that may be absent or function differently in animals, making animal testing less predictive

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- **Scientific Advances (Organ-on-Chip)** - A 2024 study showed a breast cancer-on-chip model successfully simulating tumour environment to test CAR T-cell therapy, enabling assessment of effectiveness and safety without animal use
- **Advantages of NAMS** - Reduce drug development cost by 10-26% and shorten lead optimisation time by ~19%; improve efficiency and attractiveness for pharma industry
- **Challenges in India (Adoption Gap)** - Despite 90+ academic labs working on NAMs, limited translation into industry due to lack of standardisation, documentation, and policy support
- **Need for Funding & Infrastructure** - Development of NAMS requires sustained funding, infrastructure, and system-building rather than isolated product development; Biopharma SHAKTI can provide support
- **Entrepreneurial & Investment Issues** - Weak startup ecosystem in biologics, limited investor awareness, and insufficient supply chain support hinder growth despite DBT and ICMR backing.
- **Biosimilars & Policy Support** - Biosimilars (generic biologics) face financial and regulatory challenges; patent evergreening delays cheaper alternatives and extends monopoly
- **Regulatory Bottlenecks** - Approval by Central Drugs Standard Control Organisation required; updated biosimilar guidelines still in draft, slowing adoption of NAMS
- **Way Forward** - Strengthen policy support, regulatory clarity, funding, and industry alignment to scale NAMs; this will make biologics and biosimilars development faster, cost-effective, and help achieve Biopharma SHAKTI goals

About BioPharma SHAKTI initiative:

- **Objective** - Biopharma SHAKTI aims to build a globally competitive biologics and biosimilars ecosystem with ₹10,000 crore outlay
- **Healthcare Need** - Rising burden of non-communicable diseases like diabetes, cancer and autoimmune disorders increases demand for affordable biologics

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- **Domestic Manufacturing Boost** -Promotes indigenous development of high-value biopharma products and reduces import dependence
- **Human Resource Development** - Expansion of NIPER network with 3 new institutes and upgrade of 7 existing ones for skilled workforce
- **Clinical Research Strengthening** - Focus on building large-scale ecosystem for advanced clinical trials
- **Regulatory Reforms** - Central Drugs Standard Control Organisation to be strengthened with Scientific Review Cadre for faster approvals
- **Startup & Innovation Support** - Provides early-stage funding and equity support to help innovations move from concept to commercialization

3. World Air Quality Report 2025:

Context: The report, released by Swiss air quality technology firm IQAir, highlights worsening global air quality and underscores the growing public health challenge posed by pollution.

More details about the report:

- The latest World Air Quality Report 2025 has identified Pakistan as the most polluted country globally, followed by Bangladesh and Tajikistan, while India ranks sixth.
- According to the report, the five most polluted countries are Pakistan, Bangladesh, Tajikistan, Chad and the Democratic Republic of the Congo.
- At the city level, Uttar Pradesh's Loni has emerged as the most polluted city globally, followed by Hotan in China and Bymihat in Meghalaya.
- Delhi ranks fourth, continuing to face severe air quality challenges.
- Notably, the world's 25 most polluted cities are concentrated in India, Pakistan and China, with India hosting three of the top four.

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- On the other hand, Nieuwoudtville in South Africa recorded the cleanest air with minimal PM2.5 levels.

4. Earth's energy imbalance (EEI):

Context: The World Meteorological Organization released the "State of the Global Climate 202.5' report on World Meteorological Day (theme: Observing Today, Protecting Tomorrow), which for the first time includes Earth's Energy Imbalance (EEI) as a key climate indicator.

What is Earth's Energy Imbalance (EEI)?

- **Definition** - Earth's Energy Imbalance is the difference between incoming solar energy (after reflection) and outgoing long-wave radiation
- **Positive EEI** - Earth gains more energy than it loses, leading to warming
- **Negative EEI** - Earth loses more energy than it gains, leading to cooling
- **Significance** - Indicates rate of heat accumulation due to anthropogenic greenhouse gas emissions
- **GHG Increase** - Rising greenhouse gases trap heat and reduce outgoing radiation
- **Aerosol Reduction** - Fewer aerosols decrease reflection of sunlight, increasing heat absorption
- **Trace Gases & Water Vapour** - Enhance greenhouse effect, reducing heat loss to space
- **Cloud & Ice Changes** - Reduced reflection by clouds and melting sea ice increases energy absorption.

5. Global Operational Network of Anti-Corruption Law Enforcement Authorities (GlobE Network):

- **Context:** India hosted the 12th Steering Committee Meeting of Global Operational Network of Anti-Corruption Law Enforcement Authorities (GlobE Network).

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About GlobE Network:

- **Genesis** - GlobE Network was established in 2021 based on the Riyadh Initiative during Saudi Arabia's G20 Presidency (2020)
- **Nature** - A global platform of specialised anti-corruption law enforcement authorities
- **Aim** - To promote transnational cooperation for detection, investigation and prosecution of corruption cases
- **Membership** - Open to all UN Member States and parties to UNCAC; India represented by Central Bureau of Investigation and Directorate of Enforcement
- **Support** - Backed by United Nations Office on Drugs and Crime which provides secretariat support
- **GlobE SCP** - Secure Communications Platform enables fast and secure information exchange among investigators and prosecutors

6. GARBH-INI initiative:

Context: India's largest pregnancy cohort study of 12,000 women under the GARBH-INi initiative is aimed at developing indigenous, Al-driven solutions to address preterm births informed the Union Minister of Science & Technology.

About GARBH-INi initiative:

- **Programme** - GARBH-INI is a flagship initiative supported by the Department of Biotechnology
- **Aim** - To reduce adverse pregnancy outcomes through research and data-driven interventions
- **Biorepository** - Established a national biorepository for maternal and fetal health research
- **Data Platform** - GARBH-INI-DRISHTI enables data sharing and wider access for the research community
- **Cohort Study** - One of the largest pregnancy cohorts in South Asia, started in 2015 at Gurugram Civil Hospital

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7. Nalgonda technique:

Context: Centre commissioned a research project to evaluate technologies to remove fluoride from water amid concerns that existing standards, based on Nalgonda technique, have not kept up with technological advancements or field realities.

About Nalgonda technique:

- **Technique** - Nalgonda Technique uses aluminium salts, lime and bleaching powder for defluoridation of water
- **Process Steps** - Involves rapid mixing, flocculation, sedimentation, filtration and disinfection
- **Developed By** - Developed by National Environmental Engineering Research Institute (NEERI)
- **Cost Efficiency** - Simple, low-cost and suitable for rural water treatment
- **Government Recommendation** - Recommended by Government of India for removing excess fluoride from drinking water.

8. A14AI Initiative:

Context: The World Economic Forum (WEF) has released a landmark insights report titled "Shaping the Deep-Tech Revolution in Agriculture,"

About AI4AI Initiative:

- **Launch** - Agriculture Innovation Mission for Climate (AIM for Climate) launched by WEF in 2021
- **Aim** - Brings together public and private partners to scale agri-tech solutions and transform global food systems
- **Inclusivity Focus** - Supports smallholder farmers and equitable access to technology
- **Sustainability Focus** - Promotes reduced environmental footprint and climate-resilient practices
- **Efficiency Focus** - Aims to minimise agricultural losses and wastage

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- **India Usage** - Implemented in Uttar Pradesh, Maharashtra, Telangana and Madhya Pradesh (2021-2024)

MAINS SPECIFIC ARTICLES:

1. SC status only for Hindus, Buddhists, Sikhs: top court: (GS paper 2)

Context: The Supreme Court held in a judgment that a person professing any religion other than Hinduism, Buddhism, or Sikhism should not be considered a member of a Schedule Caste community.

More about:

- **Background of the Case** - Appeal filed by Chinthada Anand, bom a Hindu-Madiga (SC) who converted to Christianity and became a pastor; he sought protection under the SC/ST (Prevention of Atrocities) Act, 1989 for alleged caste-based attacks; Andhra Pradesh High Court quashed the case stating he lost SC status after conversion; appeal reached the Supreme Court
- **Key Constitutional Provision (Clause 3, 1950 Order)** - Based on Constitution (Scheduled Castes) Order, 1950; SC status restricted to persons professing Hinduism; later extended to Sikhism (1956) and Buddhism (1990)
- **Court's Interpretation of 'Profess"** - "Profess" means publicly declaring and practicing a religion; requires outward manifestation, not just private belief; Christianity does not recognise caste system
- **Core Judgment of the Court** - Conversion to a religion outside Clause 3 leads to immediate and complete loss of SC status; the bar is absolute with no exceptions; a person cannot claim SC benefits while practicing another religion
- **Impact on Legal Protection** - Converted individuals cannot claim statutory benefits, reservation, or protection under SC laws including the SC/ST Act, 1989
- **Reconversion Conditions (Strict Criteria)** - Must prove original caste conclusively; must show bona fide reconversion; must provide evidence of acceptance by original caste community; must

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demonstrate adoption of customs, rituals, and practices; failure of any condition makes claim invalid

- **Observation on Mutually Exclusive Status** - Practicing another religion and claiming SC status are legally incompatible and against constitutional scheme
- **Position on Scheduled Tribes (STS)** - Under Constitution (Scheduled Tribes) Order, 1950, no religion-based restriction exists; ST status depends on continued tribal identity "in substance"

2. Deepening global corruption as a pointer for India: (GS paper 2)

Context: The Hindu Editorial Analysis.

- **Global CPI 2025 Trends** - Transparency International reports worsening corruption; global average score fell to 42/100; 122 of 182 countries scored below 50; only 5 countries scored above 80, down from 12 a decade ago; weakening oversight and civic freedoms linked to rising corruption
- **India's Performance** - India scored 39 and ranked 91/182 in 2025; remains in lower halff; score stagnated between 38-41 over the past decade despite rapid economic growth
- **Comparative Position** - India performs better than some neighbours but trails many East Asian, European and upper-middle-income democracies that improved institutional quality over time → Significance of CPI - Measures perceived public sector integrity using multiple indicators like procurement, judiciary and regulation; low score reflects weak transparency, oversight and accountability; impacts investment, risk perception and capital flows
- **Economic Costs of Corruption** - Globally costs -5% of GDP (~$2.6 trillion annually); in India estimated -0.5% of GDP directly and 1-1.5% including indirect effects; leads to inefficiency, higher costs and reduced productivity
- **Compliance Burden Issues** - Complex regulatory framework with over 26,000 imprisonment provisions; businesses face heavy compliance (e.g., pharma startup needs-998 compliances, -49% with criminal liability); increases discretion and rent-seeking opportunities

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- **Positive Developments** - Digital public infrastructure, DBT and GST improved transparency and reduced leakages; digital payments expanding rapidly with RBI-DPI reaching 516.76 (Sept 2025); e-procurement and digitisation reducing corruption scope
- **Structural Insight** - Corruption is an economic and governance challenge, affecting fiscal efficiency, regulatory credibility and social trust; imbalance exists between economic growth and institutional strength
- **Way Forward Message** - CPI 2025 is a benchmark, not a verdict; improvements needed in transparency, judicial efficiency, regulatory simplification and institutional independence; sustained reforms can improve governance perception
- **Conclusion** - India's economic rise is strong, but governance reforms must match this pace to achieve long-term development goals like becoming a $10 trillion economy

Quick Bites:

➢ During Apr-Jan of FY 2025-26, total exports of merchandise and services rose by USD 36 billion, registering a growth of 5.26% from USD 679.02 billion in FY 2024-25 (Apr-Jan) to USD 714.73 billion.

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26-03-2026

PRELIMS ARTICLES:

1. Ude Desh ka Aam Naagrik (UDAN) scheme:

Context: The Union Cabinet chaired by the Prime Minister Shri Narendra Modi has approved the launch and implementation of the Regional Connectivity Scheme - Modified UDAN for a period of ten years from FY 2026-27 to FY 2035-36 with a total outlay of Rs.28,840 crore with the budgetary support of the Government of India.

More about:

- Under the Modified UDAN Scheme, it is proposed to develop 100 airports from existing unserved airstrips to enhance regional connectivity, with a total outlay of Rs.12,159 crore over the next eight years.
- Operation & Maintenance (O&M) Support for Aerodromes - Provides 3-year financial assistance for RCS-only airports due to high costs and low revenue, capped at 23.06 crore/year per airport and 20.90 crore for heliports/water aerodromes, with a total outlay of 22,577 crore for-441 aerodromes
- To address connectivity challenges in hilly, remote, island and aspirational regions, the Scheme proposes developing 200 modern helipads at Rs.15 crore each, amounting to a total requirement of Rs.3,661 crore over the next eight years.
- Under the Regional Connectivity Scheme, airline operators receive financial support in the form of VGF for operating awarded routes. Recognising the need for longer market development, VGF support to airline operators is proposed amounting to Rs.10,043 crore over 10 years.
- To address the shortage of small fixed-wing aircraft and helicopters required for operations in remote and difficult terrains and to advance the Atmanirbhar Bharat vision, the scheme also

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proposes to procure two HAL Dhruv helicopters for Pawan Hans and two HAL Dornier aircraft for Alliance Air.

About Ude Desh ka Aam Naagrik (UDAN) scheme:

- The original UDAN Scheme was launched in October 2016 with the objective of making air travel affordable and strengthening connectivity to Tier-2 and Tier-3 cities.
- UDAN aims to expand aviation and enhance regional connectivity by linking remote areas.
- Launched under National Civil Aviation Policy (NCAP) 2016 to connect tier-2 and tier-3 cities.
- Implemented by Airports Authority of India (AAI) as the nodal agency.
- Provides Viability Gap Funding (VGF) to airlines for affordable operations.
- Regional Connectivity Fund (RCF) created to support VGF requirements.
- Airfares are capped to ensure affordability for passengers.
- Concessions like reduced taxes on ATF provided to airlines.
- Promotes cooperative federalism involving Centre, States, AAI and private players.

2. SwaYaan project:

Context: More than 32,000 beneficiaries trained under SwaYaan project for capacity building in Unmanned Aircraft Systems (UAS)

About SwaYaan project:

- **SwaYaan Project** - Government initiative for capacity building in Unmanned Aircraft Systems (UAS) focusing on education, training, and research.
- Implemented through a hub-and-spoke model involving 30 premier institutions (IITS, NITS, IIITS, etc.) with dedicated drone labs.
- **Covers five core areas:** Drone Electronics, GNC (Guidance, Navigation & Control), Acromechanics, Drone Applications, and Allied UAS Technologies.

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- Offers programs like M.Tech in UAS (at IIT Kanpur), minor degrees, certification courses, bootcamps, and workshops.
- Targets students, faculty, researchers, and professionals for skill development.
- Promotes R&D, innovation, and challenges like NIDAR (National Innovation Challenge for Drone Application and Research)
- Over 32,000 beneficiaries trained through 900+ activities across India
- 1,457 beneficiaries trained in Uttar Pradesh, including 75 from Mathura district

3. PM Surya Ghar Muft Bijli Yojana:

Context: PM Surya Ghar Yojana Drives Energy Transition: 9.56 GW Rooftop Solar Capacity Adcled till March 2026.

More about:

- Under PM Surya Ghar Muft Bijli Yojana, installation in I crore households is expected to generate 1,000 billion units of renewable electricity
- Estimated reduction of 720 million tonnes of CO: emissions over 25 years
- 9,566.89 MW rooftop solar capacity added since launch in February 2024 (as of March 2026)
- Expected to create around 17 lakh jobs across manufacturing, logistics, installation, O&M, and finance sectors

About PM Surya Ghar Muft Bijli Yojana:

- Under the scheme, one crore households will get rooftop solar power systems.
- It is a scheme that will involve installing solar power systems at rooftops for residential consumers.
- The scheme was launched with a total outlay of Rs.75,021 crore.
- It aims at installing rooftop solar and providing free electricity up to 300 units every month for One Crore households.

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- A Model Solar Village will be developed in each district of the country to act as a role model for adoption of rooftop solar in rural areas.
- The scheme provides a CFA of 60% of system cost for 2 kW systems and 40% of additional system cost for systems between 2 to 3 kW capacity. The CFA will be capped at 3 kW.
- The households will apply for subsidy through the National Portal and will be able to select a suitable vendor for installing rooftop solar.
- Households will be able to access collateral-free low-interest loan products of around 7% at present for installation of residential RTS systems up to 3 kW.

4. Time Use Survey (TUS) 2024:

Context: The report of Time Use Survey (TUS) 2024 conducted by the Ministry of Statistics and Programme Implementation (MOSPI) during the period January-December 2024 was released through the Press Information Bureau Press Release.

About Time Use Survey (TUS) 2024:

- The primary objective of the Survey is to measure the participation of men and women in paid and unpaid activities.
- As per TUS 2024, 21.4% of men and 41% of women in the age group 15-59 years participated in unpaid caregiving activities for household members.
- Further, as per TUS 2024, the average time spent on unpaid caregiving activities for household members is about 74 minutes per day for men and 140 minutes per day for women.

5. Strategic Petroleum Reserves (SPRS):

Context: India's strategic petroleum reserves (SPRs), which have a capacity to store 5.33 million tonnes of crude oil, are currently holding 3.37 million tonnes of oil, or just about two-thirds of

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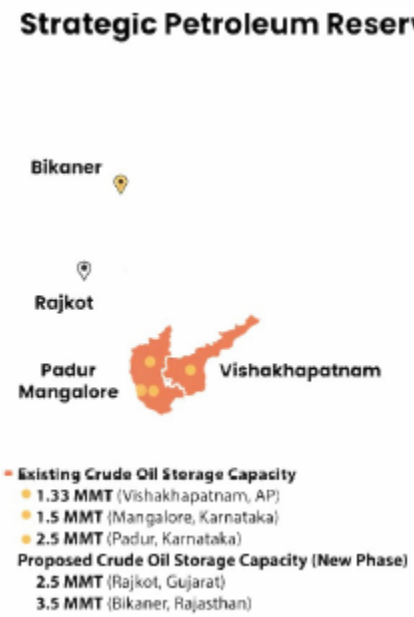
their total storage capacity, the Ministry of Petroleum and Natural Gas (MoPNG) said in the Rajya Sabha.

What are Strategic Petroleum Reserves (SPRs)?



- Strategic Petroleum Reserves (SPR) are government-held crude oil stockpiles for energy security during supply disruptions.
- Maintained in addition to commercial reserves held by oil companies.
- Implemented by Indian Strategic Petroleum Reserves Limited (ISPRL), a Special Purpose Vehicle set up in 2004.
- Comes under the Ministry of Petroleum and Natural Gas.
- Stored in underground rock caverns, typically located near coastal areas.

6. NIMBY (Not In My Backyard) syndrome:

Context: Thailand seizes 284 tonnes of illegal e-waste from the US.

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About NIMBY (Not In My Backyard) syndrome:

- NIMBY ("Not In My Backyard") refers to people supporting development but opposing waste disposal or projects in their own area
- Leads to export of hazardous waste from developed to developing countries due to weaker regulations
- Waste is often sent under the guise of recycling to countries like India
- Also reflects local opposition to projects like housing or renewable energy due to social and economic concerns

7. Aghanashini-Vedavathi river-linking project:

Context: The United Nations Educational, Scientific and Cultural Organisation (UNESCO) has raised concerns over the proposed Aghanashini-Vedavathi river-linking project, urging India to adhere strictly to World Heritage conservation norms.

What is the issue?

- The Aghanashini river-linking proposal has been opposed by environmental groups citing risks to biodiversity and local ecosystems.
- Activists argue that diverting large volumes of water could disrupt the natural hydrology of the Western Ghats, a globally recognised biodiversity hotspot.
- The project is also expected to impact thousands of families dependent on the river system for livelihood and water security.

About the proposed project:

- The proposed project aims to divert around 35 thousand million cubic feet (tme ft) of water from the Aghanashini river to the Vedavathi river.

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- Critics have termed the plan unscientific, pointing out that the diversion could significantly affect natural water flow and rainfall-based water availability in the region.
- The Aghanashini River is a 121 km long, free-flowing river originating in the Western Ghats (Shankarunda, Sirsi) of Karnataka, India, flowing west to join the Arabian Sea near Kumta
- The Vedavathi River, a major tributary of the Tungabhadra River within the Krishna River basin, originates in the Bababudanagiri Mountains of the Western Ghats in Karnataka. It is formed by the union of the Veda and Avathi rivers. It flows through Karnataka and Andhra Pradesh-where it is known as the Hagari before joining the Tungabhadra.

8. Cess and Surcharge:

Context: Finance Minister Nirmala Sitharaman on Wednesday emphatically reiterated the Centre's right to collect cesses and surcharges, saying the Constitution allowed it and the Centre would continue to use the provision.

Cess	**Surcharge**
Levied under Article 271 of Indian Constitution by Central Government	Levied under Article 271 of Indian Constitution by Central Government
A tax on tax (charged on existing tax liability)	Additional charge on income tax
Imposed for **a specific purpose** (earmarked)	Imposed for **general revenue purposes**
Purpose must be clearly defined (e.g., education, health, infrastructure)	No specific purpose; can be used at government's discretion
Named after its objective (e.g., Swachh Bharat cess, education cess)	Not linked to any specific scheme or objective
Levied across taxpayers depending on applicability of the base tax	Levied on higher income groups, companies, or specific tax brackets

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Forms part of Consolidated Fund of India	Forms part of Consolidated Fund of India
Not shareable with States	Not shareable with States
Used to fund specific schemes (often centrally sponsored schemes)	Used for general government expenditure

9. Mineral water:

Context: Mineral water widely consumed globally as a safe and mineral rich alternative to tap water.

More about:

- **What is Mineral Water:** Naturally occurring water from underground sources (springs/aquifers) containing dissolved minerals acquired through geological processes.
- **Formation Process:** Rainwater percolates through rocks like limestone, granite, and basalt, dissolving minerals before emerging via springs or reservoirs.
- **Key Difference:** Unlike tap water, mineral water retains natural mineral composition without artificial alteration
- **Regulation (Global):** Standards set by U.S. Food and Drug Administration and European Parliament require stable composition and prohibit chemical treatment
- **Regulation (India):** Governed by Food Safety and Standards Authority of India and Bureau of Indian Standards (IS 13428)
- **Certification Requirement:** Mandatory FSSAI license + BIS certification with ISI mark; strict labelling norms and no medicinal claims allowed
- **Permitted Treatment:** Only filtration, aeration, and sterilisation allowed; chemical disinfection (e.g., chlorine) prohibited
- **Packaging Process:** Bottled near source; stored in glass, PET, or aluminium containers (each with pros and cons)

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- **Types of Bottled Water:** Includes mineral, spring, purified, sparkling, and artesian water; not all bottled water is mineral water.
- **Mineral Composition:** Contains calcium, magnesium, sodium, potassium, bicarbonates, sulphates, etc.
- **Health & Taste Impact:** Minerals affect taste (smooth, bitter, salty notes) and contribute slightly to bone health, muscle function, and digestion
- **Hard Water Concept:** High calcium and magnesium increase Total Dissolved Solids (TDS), causing scaling and reduced soap lathering
- **Other Water Types:** Distilled water (pure HO, no minerals), industrial water (chemically treated, unsafe), and purified water (RO-treated with added minerals)
- **Tap Water (India):** Sourced from rivers and groundwater; treated with filtration, alum, and chlorine
- **Quality Issues in India:** High contamination risk due to leakages; potable tap water not guaranteed in most cities.
- **Standards:** BIS standard IS 10500:2012 sets TDS limit (500-2000 mg/l) with flexibility
- **Regional Variation:** Hard water in Rajasthan, Gujarat, Delhi/NCR; softer water in high rainfall regions like Kerala and cities like Mumbai
- **Conclusion:** Mineral water is a regulated, natural source of hydration with stable composition, but differs significantly from tap and purified water in origin, treatment, and mineral content

10. Inflation targeting in India:

Context: The Union government on Wednesday asked the Reserve Bank of India (RBI) to target retail inflation at 4% with a margin of 2% on either side for another five years ending March 2031.

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More about:

- Reserve Bank of India mandated to maintain inflation targeting framework since 2016.
- Inflation target fixed at 4% ± 2% (2%-6% band).
- First target period: 2016-2021; extended in 2021 without change.
- New target period notified: April 1, 2026 - March 31, 2031.
- Notification issued by Department of Economic Affairs.
- Decision taken by Union Government in consultation with RBI.
- Objective: Price stability while supporting growth.
- India follows a flexible inflation targeting (FIT) framework.
- CPI (Consumer Price Index) used as the inflation benchmark.
- Third consecutive term with unchanged inflation target.

About Monetary Policy Committee:

- The RBI Monetary Policy Committee (MPC) is a statutory body constituted under the RBI Act of 1934 by the Central Government.
- The RBI Monetary Policy Committee (MPC) was established based on the recommendation of the Urjit Patel Committee.
- It was formed with the objective of fixing the benchmark policy interest rate in order to keep inflation within a particular target level.
- The RBI Monetary Policy Committee (MPC) is a 6 member committee.
- There are in total three internal members and three external experts.
- The Monetary Policy Committee (MPC) is required to meet at least four times a year.
- The quorum required for the meeting of the MPC is four members.
- Each member of the MPC has one vote, and in the event of an equality of votes, the Governor has a second or casting vote.

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- Once every six months, the Reserve Bank is required to publish a document called the Monetary Policy Report.

MAINS SPECIFIC ARTICLES:

1. Nationally Determined Contribution (NDC) for the period 2031 to 2035: (GS paper 3)

Context: Cabinet approves India's Nationally Determined Contribution (2031-2035) to be communicated to the United Nations Framework Convention on Climate Change.

Early Achievement of NDC Targets (2015 Commitments)

- India's original Nationally Determined Contributions (NDCs) under the Paris Agreement set targets for 2030.
- Achieved 33-35% emissions intensity reduction target 11 years early Achieved 40% non-fossil fuel installed capacity target 9 years early.
- Demonstrates strong implementation capacity and credibility.

Enhanced Climate Targets for 2035 (Updated NDCs 2022)

- Emissions intensity reduction increased to 47% by 2035 (from 2005 levels).
- Non-fossil fuel energy capacity target raised to 60% by 2035.
- Carbon sink target enhanced to 3.5-4 billion tonnes CO: equivalent.

Progress in Emission Reduction and Energy Transition

- Emissions intensity reduced by 36% between 2005-2020
- Achieved 52.57% non-fossil installed capacity by Feb 2026
- Indicates rapid clean energy transition

Carbon Sink and Afforestation Achievements

- Created 2.29 billion tonnes CO: equivalent carbon sink by 2021
- Ranked 3rd in net forest area gain and 9th in total forest area globally
- Afforestation supports ecology and rural livelihoods.

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Balance Between Growth and Sustainability

- India maintains high GDP growth alongside climate commitments.
- Reflects balance between development and environment.

Clean Energy and Green Growth Strategy

- Focus on renewable energy expansion, storage systems, and green corridors.
- Promotion of cleaner manufacturing and sustainable infrastructure.
- Key initiatives: Green Hydrogen Mission, PM Surya Ghar, PM-KUSUM, PLI schemes, CCUS, nuclear energy.

Global Climate Leadership and Partnerships

- Active in international initiatives like ISA, CDRI, Global Biofuel Alliance, LeadIT.

Focus on Climate Adaptation and Resilience

- Coastal protection through mangroves and regulation.
- Early warning systems for disasters.
- Glacier monitoring and Himalayan protection.
- Heat Action Plans and community-based resilience.

Institutional Framework for Climate Action

- Guided by National Action Plan on Climate Change (NAPCC)
- Supported by State Action Plans (SAPCC)
- Ensures whole-of-government approach

Local-Level Implementation

- Schemes like Jal Jeevan Mission, Sustainable Agriculture Mission, MISHTI, PMKSY
- Ensures grassroots climate action

People-Centric Climate Approach

- Focus on Lifestyle for Environment (LIFE)
- Promotes sustainable living as mass movement

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- Campaigns like 'Ek Ped Maa Ke Naam

Guiding Principles for NDC 2031-35

- Based on CBDR-RC and equity
- Aligns development priorities with climate goals
- Considers Global Stocktake outcomes

Inclusive and Consultative Policy Making

- Developed through NITI Aayog consultations
- Involves ministries, experts, industry, and civil society
- Sector-wise inputs ensure realistic and achievable targets

2. Cauvery basin to face dry spell until 2050, says study: (GS paper 3)

- **Context:** Study by Indian Institute of Technology Gandhinagar published in Earth's Future highlights contrasting river flow trends under climate change.
- **Key Finding:** Cauvery River likely to witness -3.5% decline in water flow (2026-2050) despite overall increase in flows of major Indian rivers.
- **Historical Trend:** Cauvery recorded -28% decline in streamflow (1951-2012) based on Kollegal data.
- **Reason for Concern:** Unlike northern rivers, Cauvery may not benefit from increased rainfall due to climate change.
- **Methodology:** Use of "constrained modelling" based on observed river flow data (1951-2012) to reduce climate model biases.
- **Rivers Studied:** Analysis covered major rivers including Ganga River, Brahmaputra River, Indus River, Godavari River, Krishna River, Mahanadi River, Narmada River and Tapi River.
- **Climate Model Insight:** Based on CMIP6, only 8 out of 22 models accurately captured Indian monsoon seasonality.

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- **Comparative Projection:** Most rivers show increased flow (Indus +25%, Ganga +8%, Krishna +16%), but Cauvery shows decline under reliable models.
- **Water Dispute Context:** Long-standing conflict between Karnataka and Tamil Nadu over Cauvery water sharing.
- **Tribunal & Verdict:** Cauvery Water Disputes Tribunal (1990-2007) allocated 740 tmcft; Supreme Court of India (2018) revised shares (TN: 404.25 tmcft, KA: 284.75 tmcft) and declared it a national asset.
- **Recent Issue:** In 2023, Tamil Nadu demanded 24,000 cusecs/day; Karnataka refused citing shortage, leading to protests.
- **Policy Implication:** Possible need for river interlinking projects like Godavari-Cauvery Link Project.
- **Conclusion:** Climate change may intensify water scarcity and interstate conflicts in Cauvery basin despite overall wetter outlook for India.

3. The Transgender Persons Amendment Bill, a flawed fix: (GS paper 2)

Context: - Transgender Persons (Protection of Rights) Amendment Bill, 2026 introduced in Lok Sabha proposes major changes to the 2019 Act

- **Change in Definition:** Narrows "transgender person" to specific socio-cultural identities (hijra, kinner, etc.) and intersex variations; excludes sexual orientation and gender-fluid identities
- **Removal of Self-Identity:** Deletes right to "self-perceived gender identity" (Section 4(2)), replacing it with medical certification
- **New Certification Mechanism:** Introduces medical board authority led by Chief Medical Officer instead of District Magistrate process; mandates reporting of surgeries
- **Core Criticism:** Confuses sex identity (biological) with gender identity (social/psychological), leading to conceptual and legal errors

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- **Intersex Concerns:** Continues to club intersex persons under transgender category, ignoring their distinct biological identity and needs
- **Human Rights Issues:** May violate Article 21 of Indian Constitution due to lack of bodily autonomy and privacy protections
- **Data & Policy Gap:** Lack of reliable data on transgender and intersex populations; no separation of sex and gender in official records
- **Global Standards Conflict:** Contradicts definitions by United Nations and World Health Organization on intersex identity and protections
- **Institutional Issues:** Retains outdated bodies like National Council for Transgender Persons; ignores proposal for inclusive GIESC framework
- **Criminal Provisions:** Adds strict punishment (5-14 years) for forcing transgender identity and exploitation, but ignores internal exploitative systems like hijra gharanas
- **Exploitation & Protection Gaps:** No reforms for trafficking, child protection, rehabilitation, or regulation of traditional hierarchies
- **Medical & Ethical Issues:** No safeguards like genetic counselling or regulation of surgeries; raises privacy concerns
- **Lack of Intersectionality:** No provisions addressing caste, disability, poverty, or religion-based discrimination
- **Civil Rights Gap:** Silent on marriage, adoption, inheritance, and family rights of transgender persons
- **Overall Assessment:** Strengthens penalties but fails to address structural flaws; criticised for reinforcing heteronormative framework and neglecting dignity, rights, and inclusivity

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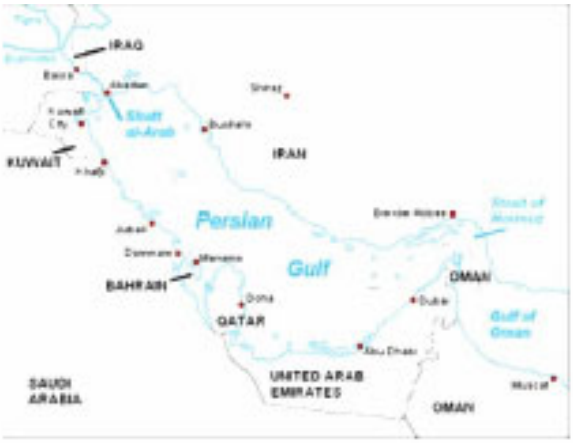
4. West Asia conflict: how finding oil changed the Persian Gulf's ecology: (GS paper 2)



- **Context:** Persian Gulf is not just a hub of oil and geopolitics but also a fragile and diverse ecological region
- **Geographical Features:** A young, shallow sea (3,000-6,000 years old) connected via Strait of Hormuz with high salinity and extreme temperatures
- **Extreme Conditions:** High evaporation, low water exchange with Arabian Sea, and temperatures >35°C create harsh marine environment
- **Biodiversity Hotspot:** Supports mangroves, lagoons, seagrass meadows, coral reefs, and mudflats forming a delicate ecological network
- **Key Species:** Habitat for dugongs, pearl oysters, shrimp, migratory birds, and endangered species like Hawksbill sea turtle
- **Ecological Importance:** Seagrass supports spawning; mangroves act as nurseries and carbon sinks; coral reefs act as climate resilience laboratories
- **Historical Economy:** Once dominated by pearl trade (Basra pearls) before collapse due to Japanese cultured pearls in 1920s
- **Oil Economy Shift:** Region now produces -1/3rd of global oil; heavy tanker traffic and offshore platforms dominate

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- **Urbanisation Impact:** Rapid coastal development (e.g., Palm Jumeirah) has altered natural coastlines and ecosystems
- **Habitat Loss:** Decline of mangroves, salt flats, seagrass beds; replacement of natural beaches with seawalls
- **Industrial Pressures:** Desalination plants discharge hot saline brine; pollution and dredging disrupt marine ecosystems
- **Pollution & Eutrophication:** Algal blooms and sewage cause oxygen depletion and fish deaths; coral bleaching increases
- **Oil Spill Impact:** Gulf War oil spill 1991 caused long-term ecological damage
- **Conflict & Conservation:** Wars like Iran-Iraq War disrupted conservation efforts and wildlife protection
- **Biodiversity Decline:** Species like Arabian oryx, Asiatic cheetah, and Arabian leopard faced severe population decline
- **Conservation Efforts:** Countries like United Arab Emirates, Saudi Arabia, and Qatar promoting mangrove restoration, MPAs, and fishing limits
- **Key Insight:** Centralised governance offers scope for rapid environmental action if prioritized.
- **Conclusion:** Gulf ecosystems are nearing irreversible damage; urgent conservation needed to prevent ecological collapse

5. What is at stake at the WTO's MC14?: (GS paper 2)

- **Context:** WTO 14th Ministerial Conference (MC14) to be held in Yaoundé; highest decision-making body of World Trade Organization
- **Global Background:** Occurring amid U.S.-China rivalry, global conflicts, and rising securitisation of trade
- **Crisis in Multilateralism:** Shift from multilateralism to unilateralism; U.S. imposing tariffs violating Most Favoured Nation (MFN) principle and bound tariff commitments

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- **U.S. Position:** Dissatisfaction with WTO; aims to counter China's rise and remove legal constraints of WTO rules
- **Dispute Settlement Crisis:** U.S. blocked appointments to Appellate Body, paralysing WTO's dispute resolution mechanism
- **Structural Issues:** Consensus-based decision-making slows rule-making; only few agreements like Trade Facilitation Agreement and Fisheries Subsidy Agreement achieved
- **Rise of Alternatives:** Countries increasingly relying on FTAs due to WTO inefficiency
- **Plurilateral Agreements Debate:** Dispute over inclusion of agreements like Investment Facilitation and E-commerce into WTO framework; India cautious due to risk of fragmentation
- **E-commerce Moratorium:** Ongoing debate on continuing tariff-free digital trade; developed countries support extension, developing countries fear revenue loss
- **Special & Differential Treatment (SDT):** Special and Differential Treatment under challenge by U.S., which wants to limit benefits for emerging economies like India
- **Core Principles at Stake:** Foundational WTO rules like MFN and multilateralism under pressure
- **India's Role:** Should act as leader of developing countries and defend multilateral trade system
- **Policy Options for India:** Build alliances, reconsider rigid positions (e.g., plurilateral agreements), and push for dispute settlement reforms
- **Conclusion:** Outcome of MC14 crucial; failure may strengthen U.S.-led unilateral trade order, harming developing nations

Quick Bites:

➢ The Union Cabinet led by Narendra Modi has approved the continuation of the Immigration, Visa, Foreigners Registration & Tracking (IVFRT) Scheme for five years (2026-2031) with a 21,800 crore outlay. The IVFRT platform aims to integrate and modernize immigration, visa, and foreigner registration services through a secure, efficient, and unified system.

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- 14th Ministerial Conference of the World Trade Organization to be held in Yaoundé from 26-29 March 2026 under Cameroon's chairmanship.
- PRISM-SG (Portal for Rail-Road Inspection & Stages Management - Steel Girders) Portal to digitise key approval and inspection processes related to the construction of Road Over Bridges (ROBS) and also includes Quality Assurance Plan (QAP), Welding Procedure Specification Sheet (WPSS) and fabrication stage inspection of steel girders.
- The Department of Pharmaceuticals, under the Ministry of Chemicals and Fertilizers in association with the PHD Chamber of Commerce and Industry (PHDCCI), is set to host the 9th Pharma Med 2026 on 27th March 2026 in New Delhi. The one-day conference will bring together key stakeholders from across the pharmaceutical ecosystem for a high-level dialogue on the future of India's pharma sector.
- Recently, the Chief Justice of India recused from hearing petitions challenging the CEC and Other Election Commissioners Act, 2023 to avoid conflict of interest, bringing attention to the Doctrine of Necessity, which allows a case to be heard even when judges have conflicts to ensure continuity of justice and prevent institutional paralysis; this principle was applied in the Supreme Court Advocates-on-Record Association v. Union of India.
- The Supreme Court of India directed the grant of permanent commission and pensionary benefits to eligible women officers in the armed forces, building on its landmark ruling in Secretary, Ministry of Defence v. Babita Puniya, which recognized their eligibility for command roles; under the Short Service Commission (SSC) scheme, officers are initially appointed for 10 years with a possible extension up to 14 years.
- Karnataka Grameena Bank has been honoured with the National Award for Outstanding Performance in Self-Help Group (SHG) Bank Linkage for 2024-25 by the Union Ministry of Rural Development.
- Kalpana Soren, Gandey MLA and wife of Jharkhand Chief Minister Hemant Soren, has been conferred the 'Women Empowerment Trailblazers Award' at the BRICS CCI WE Annual Women

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Summit and Felicitation 2026 held in New Delhi. The award recognises her contributions towards promoting women's empowerment and inclusive development.

- Gujarat has become the second Indian state after Uttarakhand to pass a Uniform Civil Code (UCC) Bill, 2026, establishing a common legal framework for personal laws across communities.

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27-03-2026

PRELIMS ARTICLES:

1. Immigration, Visa, Foreigners Registration & Tracking (IVFRT) Scheme:

Context: The Union Cabinet chaired by the Prime Minister Shri Narendra Modi has approved the continuation of the Immigration, Visa, Foreigners Registration & Tracking (IVFRT) Scheme beyond 31 March, 2026 for a period of five year from 01 April, 2026 to 31 March, 2031 with budget outlay of Rs. 1800 crore.

About IVFRT Scheme:

- The, IVFRT platform seeks to interlink and optimize functions related to immigration, visa issuance and registration of foreigners in India.
- The core objective of the IVFRT is to modernize and upgrade immigration and visa services within a secure and integrated service delivery framework.
- It aims to facilitate legitimate travellers while strengthening national security. This project was approved by the Cabinet Committee on Economic Affairs on 13.05.2010 with a budget outlay of Rs. 1011 crore and with project duration till September, 2014.
- The budget outlay for the project was revised to Rs.638.90 crore in 2015 along with extension of the implementation timeline up to 31st March, 2017, and further up to 31st March, 2021 without any additional financial implications.
- The expenditure of Rs.613.28 core was incurred against the total revised outlay of Rs.638.90 crore.
- The extension of the project for a further continuation for a period of five years from 01.04.2021 to 31.03.2026 was approved by the Cabinet on 19.01.2022 with a budget outlay of Rs.1365 crore. It is implemented by Ministry of Home Affairs under the National e-Governance Plan (NeGP).

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2. Food Security Index 2026:

Context: International Institute for Environment and Development (IIED) published the IIED Food Security Index.

About Food Security Index 2026:

- Food Security Index assesses climate impact on four pillars: availability, accessibility, utilization, and sustainability.
- India among most vulnerable large economies to climate-induced food insecurity.
- India identified as a high-concern country in the Food Security Index.
- Under 1.5°C-2°C warming, India's food security score may decline by ~15%.
- Decline may push India towards "critically insecure" category.
- Climate change likely to widen food security gap between developed and developing countries.

3. QS World University Rankings:

Context: The Indian Institute of Management Kozhikode (IIM-K) has achieved a significant global milestone by entering the top 100 in the QS World University Rankings by Subject 2026 for the first time.

About QS World University Rankings 2025:

- QS World University Rankings published annually by Quacquarelli Symonds.
- Rankings based on academic reputation, employer reputation, research output, and employability.
- India added 120 new institutions; ranks 4th globally after United States, China, and United Kingdom.
- India now has the 4th-largest overall institutional presence globally.
- Six Indian institutions in global top 100 for computer science, all improved rankings.
- Indian Institute of Technology (ISM) Dhanbad and Indian Institute of Management Ahmedabad ranked highest among Indian institutes (Rank 21).
- IIT-ISM Dhanbad excels in mineral and mining engineering.

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- IIM Ahmedabad in global top 25 for business, management, and marketing.
- Reflects India's rising global competitiveness in specialised academic fields.

4. Foreign Institutional Investors (FIIs):

Context: FPIs sell a record 1.1 lakh crore in Indian equities as markets stay fragile.

About Foreign Institutional Investors (FIIs):

Foreign Institutional Investors (FIIs) are institutional entities, such as mutual funds, pension funds, and insurance companies, that invest in foreign financial markets. They specialize in managing substantial capital, focusing on portfolio investments rather than acquiring control over companies. Their investments are diversified across asset classes, sectors, and geographic regions. Flls operate under strict regulatory frameworks in both their home and host countries.

Types of Fils:

- Sovereign Wealth Funds (SWFs): State-owned investment funds managing national reserves.
- Foreign Government Agencies: Entities controlled by foreign governments investing in financial markets.
- International Multilateral Organizations (IMOS): Institutions like the World Bank that support financial stability.
- Foreign Central Banks: Central banks investing in foreign exchange reserves and stabilizing economies.

FDI vs. FII:

Aspect	FDI (Foreign Direct Investment)	FII (Foreign Institutional Investment)
Nature	Long-term, production-based	Short-term, financial markets-focused
Control	Direct control over the company	No control, only portfolio investment
Capital Duration	Brings long-term capital	Brings short-term capital

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5. S-400:

Context: India is set to receive the remaining two units of the S-400 air defence system from Russia this year, with one expected as early as next month and the final delivery scheduled for November.

About S-400 defence system:

- S-400 Triumf is a mobile long-range surface-to-air missile (SAM) system developed by Russia.
- Capable of intercepting aircraft, drones, cruise missiles, and ballistic missiles.
- Has a maximum range of 400 km and can engage targets up to 30 km altitude.
- Can track and destroy 36 targets simultaneously using multiple missile types.
- Considered among the most advanced air defence systems, superior to THAAD in operational capability.
- India procured S-400 to strengthen air defence and deterrence.

MAINS SPECIFIC ARTICLES:

1. Should men get paternity leave in India?: (GS paper 1)

Context: The Hindu explained:

- **Context:** Supreme Court of India urged Union government to consider formal paternity leave law for all fathers
- **Rationale:** Parenthood is shared responsibility; absence of paternity leave reinforces gendered roles
- **Child-Centric View:** Early childhood development requires presence of both parents as caregivers
- **Gender Inequality:** Women spend disproportionately higher time on unpaid care work, limiting workforce participation

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- **Maternity Leave Issues:** Maternity Benefit Act, 1961 applies mainly to formal sector (only ~10% workforce) and faces discrimination in implementation
- **Workplace Discrimination:** Women face hiring bias, wage penalties, and promotion barriers post-childbirth
- **Current Paternity Leave Status:** No universal law; limited provision (2 weeks for central gov employees, more in some private firms)
- **Global Best Practice:** Sweden offers shared parental leave with non-transferable quotas for each parent
- **Policy Debate:** Proposal to shift from maternity leave to gender-neutral "parental leave" with shared responsibility
- **Challenges:** Risk of misuse, persistence of patriarchy, and unequal caregiving burden even if leave is granted
- **Structural Constraints:** Dominance of informal sector and small enterprises makes implementation difficult
- **Labour Market Reality:** Gig workers and informal workers lack access to any leave benefits
- **Social Norms Issue:** Deep-rooted patriarchal attitudes limit effectiveness of legal provisions
- **Way Forward:** Combine legal reform with social change, expand formalisation of jobs, and design context-specific parental leave policies

Quick Bites:

- The National Housing Bank (NHB), the apex agency established by Government of India to promote cost effective housing finance system, has launched the Gruh Sugam Portal. The portal enables Defence / Government personnel to avail home loans with ease from the location of their posting.
- Iran fired Qader cruise missiles at the USS Abraham Lincoln aircraft carrier. Qader is a medium-range shore-based anti-ship cruise missile developed by Iran.

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- Agnikul Cosmos achieved a major milestone by successfully test-firing its Agnite engine, the world's largest single-piece 3D-printed booster engine. Agnite, along with Agnilet, is a 3D-printed semi-cryogenic engine made using Inconel, a material known for withstanding extreme temperatures. These engines are designed to power the booster stage of the Agnibaan launch vehicle, marking a significant advancement in India's private space technology.
- A recent study shows that rising sea surface temperatures in coastal waters are causing a 50-64% increase in humid heatwaves over land, further intensified by Rossby waves. These are large, wave-like movements in the atmosphere that extend horizontally across the planet in a westward direction, driven by Earth's rotation and temperature differences between land and ocean. When these waves stall, they trap hot, moisture-laden air over a region, leading to prolonged and intense humid heatwave conditions.

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28-03-2026

PRELIMS ARTICLES:

1. Zojila Pass:

Context: Five persons were killed and as many injured after an avalanche hit the high-altitude Zojila Pass, which connects the Kashmir Valley with Ladakh.

About Zojila pass:



- Zoji La is a high mountain pass located in the Kargil district of Ladakh.
- It connects Leh with Srinagar.
- It serves as a crucial link between the Union Territories of Ladakh and Jammu & Kashmir.
- Zoji La is famously called the "Mountain Pass of Blizzards."
- It remains closed during winters due to heavy snowfall, cutting off Ladakh from Kashmir.
- It lies on the Srinagar-Kargil-Leh highway (NH-1).

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- The pass is situated at an elevation of about 11,650 feet
- The Zojila Tunnel, an under-construction 14.15 km strategic passage in India, is primarily known as Asia's longest bidirectional road tunnel. Once completed, this 11,578-foot altitude project will offer all-weather connectivity between Srinagar and Ladakh.

2. Tunguska Air Defence Missile System:

Context: Ministry of Defence signed a contract worth ₹445 crore was signed with Russian agency JSC Rosoboronexport for the procurement of the Tunguska Air Defence Missile System for the Army.

About Tunguska Air Defence Missile System:

- 2K22 Tunguska is a Russian-made, mobile, short-range air defence system.
- It is designed to provide close-range protection against aircraft, helicopters, and drones.
- It combines surface-to-air missiles and anti-aircraft guns in a single platform.
- The system integrates missile and autocannon firepower for layered defence.
- Equipped with a powerful radar system for target detection and tracking.
- Capable of simultaneous target acquisition and engagement.
- Mounted on an armoured, tracked chassis, ensuring high battlefield mobility.
- Can be rapidly deployed across diverse terrains.
- Developed in the 1980s and upgraded multiple times for improved performance. Enhancements include better detection range, engagement envelope, and response time. Plays a key role in low-altitude air defence.
- Adapted for counter-drone warfare in modern battlefields.
- India procured it under a defence deal with Russia to strengthen air defence capabilities.

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3. Khelo India Tribal Games:

Context: The inaugural Khelo India Tribal Games is being held from 25th March to 3rd April 2026, as India's first national multi-sport event for tribal athletes.

About Khelo India Tribal Games:

- The inaugural edition of the Khelo India Tribal Games (KITG) is being held from 25th March to 3rd April 2026 in Chhattisgarh, across three host cities Raipur, Jagdalpur and Sarguja.
- It is the first national multi-sport event under the Khelo India programme dedicated exclusively to tribal athletes.
- The Games feature seven medal sports- athletics, football, hockey, weightlifting, archery, swimming and wrestling- along with demonstration events such as mallakhamb and kabaddi.
- The official mascot, Morveer, reflects the spirit of the Games. Derived from the Chhattisgarhi words 'Mor' (our own) and 'Veer' (bravery), it symbolises pride, spirit and the identity of India's tribal communities.
- The KheloIndia Tribal Games 2026 is being jointly managed by the Ministry of Youth Affairs & Sports, Sports Authority of India (SAI), Indian Olympic Association, National Sports Federations and the Chhattisgarh state organising committee.
- A total of 338 medals are being contested across seven sports disciplines, comprising 106 gold, 106 silver and 126 bronze medals.
- Athletics accounts for the highest number of medals, followed by swimming, wrestling and weightlifting, reflecting the scale and diversity of competition across disciplines.

4. Global Initiative on the Taking of Migratory Species (GTI):

Context: The Convention on the Conservation of Migratory Species of Wild Animals launched the Global Initiative on the Taking of Migratory Species (GTI) during its 15th Meeting of the

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Conference of the Parties (COP15) to address the illegal and unsustainable exploitation of migratory wildlife.

About Global Initiative on the Taking of Migratory Species (GTI):

- The Global Initiative on the Taking of Migratory Species (GTI) is a collaborative global effort under the Convention on the Conservation of Migratory Species of Wild Animals to tackle illegal and unsustainable wildlife exploitation.
- It was launched in March 2026 during COP15 of CMS in Campo Grande.
- GTI aims to provide coordinated support to CMS parties and bridge gaps in global conservation efforts.
- It seeks to equip countries with tools, partnerships, and knowledge to protect migratory species. It is a major direct driver of global biodiversity loss.
- Key partners include Convention on Biological Diversity, BirdLife International, Wildlife Conservation Society, World Wide Fund for Nature, and TRAFFIC.
- Governments of Uzbekistan, United Kingdom, and France are supporting the initiative financially.

About Convention on the Conservation of Migratory Species (CMS):

- Convention on the Conservation of Migratory Species of Wild Animals is the only global UN-based intergovernmental organisation under United Nations Environment Programme for conservation of migratory species.
- It focuses on terrestrial, aquatic, and avian migratory species across their entire range. → Signed in 1979 and came into force on November 1, 1983.
- Appendix I lists migratory species that are endangered or threatened with extinction. → Appendix II lists migratory species with unfavourable conservation status requiring international cooperation.
- It includes legally binding agreements and non-binding Memorandums of Understanding (MoUs).

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- India has been a party to CMS since 1983.
- India has signed MoUs for Siberian Cranes (1998), Marine Turtles (2007), Dugongs (2008), and Raptors (2016).
- COP13 of CMS was held in Gandhinagar in 2020.

MAINS SPECIFIC ARTICLES:

1. Amid conflict, India sends out invites for key BRICS meetings: (GS paper 2)

- **Meetings Planned:** BRICS meetings to be hosted by India include Foreign Ministers' Meeting in May and 18th BRICS Summit in September
- **India as Chair:** India is the current Chair of BRICS and is leading diplomatic efforts for coordination
- **Participants:** Expanded 10-member grouping includes Iran, UAE, Brazil, Russia, China, South Africa, Egypt, Ethiopia, Indonesia
- **Summit Details:** 18th BRICS Summit likely on September 9-10 in New Delhi with leaders including Vladimir Putin and Xi Jinping
- **Foreign Ministers' Meet:** Scheduled in-person in mid-May to discuss global issues and BRICS cooperation
- **Key Agenda:** Focus on war in West Asia and role of BRICS in global geopolitics
- **Consensus Challenge:** Difficulty in issuing joint statement due to differing views among members
- **Iran-UAE Divide:** Iran and UAE have resisted consensus efforts and may not align on joint position
- **Official Position:** Ministry of External Affairs acknowledged ongoing discussions but highlighted differences among members

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- **Past Precedent:** In June 2025, BRICS (under Brazil) issued strong statement condemning US-Israel strikes on Iranian nuclear sites
- **Diplomatic Significance:** Meetings seen as platform for dialogue despite geopolitical tensions among members

About BRICS:

- BRICS is an acronym for the grouping of the world's leading emerging economies, namely Brazil, Russia, India, China, and South Africa.
- In 2001, the British Economist Jim O'Neill coined the term BRIC to describe the four emerging economics of Brazil, Russia, India, and China.
- The grouping was formalized during the first meeting of BRIC Foreign Ministers in 2006.
- The first BRIC summit took place in the year 2009 in Yekaterinburg (Russia).
- South Africa was invited to join BRIC in December 2010, after which the group adopted the acronym BRICS.
- The Johannesburg declaration,2023 issued after the summit, said Argentina, Egypt, Ethiopia, Iran, Saudi Arabia and the United Arab Emirates (UAE) had been invited to become full members from January 1, 2024. However Argentina did not join.
- The 15th BRICS Summit was held in Johannesburg, South Africa, from 22-24 August 2023.
- During the Sixth BRICS Summit in Fortaleza (2014) the leaders signed the Agreement establishing the New Development Bank (NDB), headquartered in Shanghai.

Quick Bites:

➢ The 9th edition of PharmaMed 2026, organized by the PHD Chamber of Commerce & Industry in collaboration with the Department of Pharmaceuticals, Ministry of Chemicals & Fertilizers, Government of India, concluded in New Delhi.

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- A 7.6 magnitude earthquake struck near Tonga (Capital: Nuku'alofa), located in the southwestern Pacific Ocean along the Pacific Ring of Fire a zone accounting for about 90% of global earthquakes and 75% of active volcanoes, formed by interactions of tectonic plates such as the Pacific, Philippine, Cocos, Nazca, and Juan de Fuca plates; Tonga comprises around 170 islands grouped into Tongatapu, Ha'apai, and Vava'u, along with isolated islands like Niuafo'ou, Niuatoputapu, Tafahi (north) and 'Ata (south).
- Operation Urja Suraksha is an Indian Navy operation launched to escort and safeguard India-bound energy shipments through the Strait of Hormuz amid regional tensions.
- Waste Foundry Sand (WFS) is a high-quality silica sand byproduct of metal casting processes, often contaminated with heavy metals, acids, and carbon residues, generated in large quantities and posing disposal challenges; CSIR-Central Road Research Institute is promoting its use in road construction to support circular economy, waste minimization, and resource efficiency.
- The Telangana government has initiated rehabilitation of 417 tribal families from Amrabad Tiger Reserve, which was carved out of the Nagarjunasagar-Srisailam Tiger Reserve in 2014; located in the Nallamala Hills of the Eastern Ghats and forming part of the Krishna River catchment, it is the second-largest tiger reserve by core area and sixth-largest overall, characterised by tropical dry deciduous forests, a strong presence of the Chenchu tribe, and fauna such as nilgai, jackal, and chowsingha.
- Prime Minister Narendra Modi is set to participate in the upcoming G7 Summit in France from June 15 to 17.
- Veteran Telugu actor Nandamuri Balakrishna was honoured with the Lifetime Achievement Award at the International Film Festival of Delhi (IFFD) 2026.
- Researchers from the Zoological Survey of India (ZSI) have identified a new species of cockroach, Neoloboptera peninsularis, in the Deccan Peninsula.
- The Indian Army has recently begun inducting Shaurya Squadrons, specialised drone sub-units embedded within armoured regiments. This initiative marks a significant step towards modernising

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battlefield capabilities by integrating advanced drone technology directly at the unit level, enabling faster and more precise combat operations.

- Japan has introduced the world's first dedicated freight-only Shinkansen, transforming its iconic bullet train into a high-speed cargo carrier.
- The Reserve Bank of India (RBI) has unveiled its 'Payments Vision 2028', outlining a comprehensive roadmap to transform India's digital payments ecosystem over the next three years.

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29-03-2026

PRELIMS ARTICLES:

1. "Production and Availability of Oilseeds and Pulses in the Country" report:

Context: Parliamentary Standing Committee released report on "Production and Availability of Oilseeds and Pulses in the Country"

Key recommendations of the committee:

- Strengthen PM-AASHA and expand MSP procurement to cover 100% of national oilseeds production (from 25% currently).
- Fast-track National Mission on Edible Oils - Oil Palm with adequate viability gap payments for FFBs and up to 80% subsidy on planting material.
- Promote advanced biotechnology like CRISPR-Cas9 and Marker-Assisted Selection to develop climate-resilient, high-yielding, pest-resistant varieties.
- Establish at least one Seed Hub in every district by 2030 and expand SATHI portal to all 36 States/UTs by 2027.

About Oil seeds:

- **Economic Role** - Oilseeds are India's second-largest agricultural segment after food grains, covering about 14.3% of gross cropped area.
- **Nutritional Security** - Provide 12-13% of dietary energy and essential fats, supporting balanced nutrition.
- **Rising Consumption** - Per capita edible oil consumption increased from 9.85 kg (1996-2006) to 20.3 kg in 2022-23.

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- **Hidden Hunger** - Rich in fat-soluble vitamins (A, D, E, K), helping address micronutrient deficiencies.
- Farmers' Livelihoods - Important rainfed cash crops supporting income diversification for small and marginal farmers.
- Production Status - India is the 4th largest producer; ranks 1st in castor, sesame, safflower, niger; 2nd in groundnut; 3rd in rapeseed-mustard.
- **Low Global Share** - Contributes only 6-7% of global vegetable oil production due to low productivity.
- **Yield Gaps** - Caused by low adoption of high-yielding varieties and poor seed replacement rates
- **Import Dependence** - Imports about 56% of edible oil needs (15.66 MMT in 2023-24), exposing India to global price volatility.

2. Solar Radio Burst:

Context: Researchers from the Indian Institute of Astrophysics (IIA) have made a significant breakthrough in understanding a long-standing solar mystery regarding solar radio bursts.

About Solar Radio Burst:

- **Definition** - Solar Radio Burst is an intense, short-lived emission of radio waves from the Sun during eruptions like flares and coronal mass ejections
- **Origin** - Caused by energetic electrons interacting with solar plasma, converting particle energy into radio wave emissions
- **Impact on Earth** - Can disrupt GNSS/GPS navigation systems and radio communications
- **Significance** - Helps track shock waves in the solar corona and predict space weather, improving understanding of solar activity.

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3. Shigellosis, or shigella:

Context: An outbreak of shigellosis, or shigella infection has been reported in Kerala. About shigellosis:

- **Nature** - Shigellosis is a highly contagious infection caused by Shigella bacteria.
- **Transmission** - Spreads via the faecal-oral route through contaminated food, water, or close contact.
- **Symptoms** - Causes acute diarrhoea (often bloody), fever, and abdominal cramps.
- **Vulnerable Groups** - Mainly affects children under five and immunocompromised individuals.
- **Burden** - Accounts for around 188 million cases globally each year.
- **Concern** - Rising antimicrobial resistance (AMR) with no approved vaccine available.
- **Prevention** - Controlled through hygiene, sanitation, and safe food and water practices.

4. Earth hour 2026:

Context: Earth Hour 2026 was observed on Saturday, March 28, from 8:30 p.m. to 9:30 p.m. local time, marking the 20th anniversary of the WWF's global movement.

About Earth hour:

- Earth Hour is a worldwide movement organized to encourage individuals, communities and businesses to turn off non-essential electric lights for one hour.
- It is organized on the last Saturday of March as a symbol of commitment to the planet.
- Earth Hour is an annual initiative by World Wide Fund for Nature started in 2007
- **Participation** - Observed in over 180 countries where people switch off lights from 8:30 pm to 9:30 pm local time
- **Objective** - Promotes saving energy by avoiding non-essential lighting as a symbolic act for environmental protection
- **Awareness Role** - Aims to raise awareness on climate change, nature conservation, and collective global action

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- **Significance** - Recognised as the world's largest grassroots movement for climate action and energy conservation
- **Theme 2026** - "Give an Hour for Earth"

5. Great Indian Bustard:

Context: Trans-state Conservation Effort leads to successful hatching of Great Indian Bustard chick in Gujarat after a decade.

More about:

- **Initiative** - First inter-state "jump start conservation effort for Great Indian Bustard successfully executed in Gujarat
- **Critical Status** - Only three female GIBs remain in Kutch grasslands, limiting natural breeding possibilities
- **Egg Transfer Operation** - An incubated egg was transported over a 770 km distance to Kutch for conservation
- **Logistics** - A halt-free corridor was created from Sam (Rajasthan) to Naliya (Gujarat) for uninterrupted movement
- **Significance** - Aims to boost population and revive breeding of this critically endangered species

About Great Indian Bustard:

- Ground bird with a height of about one metre.
- The body is brownish with a black patch spotted in white.
- It is protected under schedule-1 of the Wildlife Protection Act, 1972.
- It is largest among the four-bustard species found in India and other three being MacQueen's bustard, lesser florican and the Bengal florican.
- They feed on insects, lizards, grass seeds etc.
- This bird, found mainly in Rajasthan and Gujarat.

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- Its historic range included much of the Indian sub-continent but it has now shrunken to just 10 percent of it.
- Conservation Status: Schedule I of Wildlife Protection Act, 1972, IUCN: Critically Endangered

6. Rashtriya Vigyan Puraskar awards:

Context: The Government of India has invited nominations for the Rashtriya Vigyan Puraskar (RVP) 2026, a prestigious national initiative to recognize outstanding contributions in the fields of Science, Technology, and Innovation.

About Rashtriya Vigyan Puraskar awards:

- The Rashtriya Vigyan Puraskar honours scientists, technologists, and innovators whose work has significantly advanced India's scientific landscape and contributed to national development.
- Nominations, including self-nominations, are open across a wide range of domains, including Agricultural Science, Atomic Energy, Biological Sciences, Chemistry, Defence Technology, Earth Science, Engineering Sciences, Environmental Science, Mathematics & Computer Science, Medicine, Physics, Space Science and Technology, Technology & Innovation, and Others.
- The awards are administered by the RVP Secretariat, Council of Scientific and Industrial Research (CSIR), the Ministry of Science & Technology, under the chairmanship of the Principal Scientific Advisor to the GOI.
- The RVP-2026 awards will be presented in four distinct categories:
  - Vigyan Ratna (VR): Recognizing lifetime achievements in science and technology.
  - Vigyan Shri (VS): Acknowledging distinguished contributions to the field.
  - Vigyan Yuva-Shanti Swarup Bhatnagar (VY-SSB): Encouraging young scientists (up to 45 years of age) who have shown exceptional promise.
  - Vigyan Team (VT): Awarded to teams of three or more researchers for collaborative excellence.

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7. Noida International Airport:

Context: Prime Minister Narendra Modi inaugurated Phase I of the Noida International Airport (NIA) at Jewar in Uttar Pradesh on March 28, marking a major milestone in India's aviation infrastructure expansion.

About Noida International Airport:

- The airport, located along the Yamuna Expressway in Gautam Buddha Nagar, is set to become the second international airport serving the Delhi-NCR region after Indira Gandhi International Airport.
- Phase I of the airport has been developed with an investment of approximately 11,200 crore. It includes a 3,900-metre runway capable of handling wide-body aircraft. The initial passenger handling capacity is 12 million passengers per annum (MPPA), with scalability up to 70 MPPA in future phases.
- Developed under a Public-Private Partnership (PPP) model, the project is led by Yamuna International Airport Private Limited (YIAPL), a subsidiary of Zurich Airport International AG, with a concession period of 40 years starting October 2021.
- The airport has been designed as a net-zero emissions facility, incorporating energy-efficient systems and sustainable practices.
- Noida International Airport at Jewar is being developed as the country's first transit hub with aspirations to develop it into an Asia-Pacific transit hub, a first for India.

MAINS SPECIFIC ARTICLES:

1. Chinthada Anand v. State of Andhra Pradesh: (GS paper 2)

Context: In Chinthada Anand v. State of Andhra Pradesh, the Supreme Court of India upheld that a pastor from the Madiga community lost SC status upon converting to Christianity

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More about:

- **SC Status & Religion Rule** - As per the Constitution (Scheduled Castes) Order, 1950, only Hindus, Sikhs, and Buddhists can be recognised as SCs; Christians and Muslims are excluded
- **Meaning of "Profess"** - The Court clarified that "profess" means publicly declaring or practising a religion, making conversion decisive
- **Effect of Conversion** - Conversion to Christianity leads to immediate and complete loss of SC status, regardless of birth
- **Loss of Benefits** - Conversion results in automatic loss of reservations, protections, and benefits including under the SC/ST (Prevention of Atrocities) Act, 1989
- **Caste Certificate Not Sufficient** - Mere possession of an SC certificate cannot override the fact of practising a non-recognised religion
- **Issue Background** - Debate on SC status for Dalit Christians and Muslims has been ongoing since a 2004 petition
- **Centre's Stand** - The Union Government opposes SC status for these groups citing the 1950 Order and "foreign origin" of these religions
- **Amendments to SC Order** - Sikhism and Buddhism were later included through amendments, partly influenced by B. R. Ambedkar's movement
- **Commission of Inquiry** - A commission led by K. G. Balakrishnan (2022) is examining SC status for converted communities
- **Reconversion Conditions** - SC status can be regained only if three conditions are met: proof of original SC status, genuine reconversion, and acceptance by the original community
- **Burden of Proof** - The individual must provide strong, unimpeachable evidence of reconversion and social acceptance
- **Requirements for Reconversion** - Must include complete renunciation of previous religion and full adoption of original caste customs and practices

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- **ST Status Distinction** - Under the Constitution (Scheduled Tribes) Order, 1950, there is no religion-based exclusion for STS
- **ST Status Criteria** - Determined by continuity of tribal identity, customs, and community acceptance, not just religion
- **Ground Reality** - Many ST communities follow Christianity, Islam, or indigenous faiths, with varying state-level socio-political debates on eligibility

2. How will the new NDC accelerate climate action?: (GS paper 2)

Context: The Union Cabinet approved India's updated Nationally Determined Contributions with new targets for 2035.

More about:

- **Key Targets** - 60% installed electric capacity from non-fossil sources, 47% reduction in emissions intensity (from 2005 levels), and carbon sink of 3.5-4 billion tonnes CO: equivalent.
- **Global Submission** - Targets will be communicated to the United Nations Framework Convention on Climate Change.
- **Nature of NDCs** - Under the Paris Agreement, NDCs are mandatory submissions but consist of voluntary national pledges.
- **Previous NDC (2022)** - India carlier committed to 50% non-fossil capacity by 2030, 45% emissions intensity reduction, and 2.5-3 billion tonnes carbon sink.
- **Progress So Far** - India has already achieved ~52% non-fossil capacity by early 2026, ahead of its 2030 target.
- **Global Context** - India and Argentina were the last G20 countries to submit 2035 NDCs, closing a global gap.
- **Effectiveness of NDCs** - Reports like UNEP's Emissions Gap Report 2025 show countries remain off-track, with NDCs closing less than 14% of emissions gap for 1.5°C goal.

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- **Energy Commitments Gap** - Most countries lack comprehensive plans aligned with COP28 'UAE Consensus"; few address fossil fuel phase-out or subsidy reforms.
- **Clean Energy Trends** - Renewable growth (solar/wind) is accelerating globally, driven more by cost and competition than NDC policies.
- **India's Emissions Trend** - CO_2 emissions grew only 0.7% in 2025, the slowest growth in over two decades (excluding COVID year.)
- **Power Sector Shift** - Emissions fell 3.8% due to reduced coal use and major additions in solar, wind, hydro, and nuclear capacity.
- **Sectoral Variations** - Steel and cement sectors saw emissions rise (8% and 10% respectively), offsetting gains.
- **Future Outlook** - India may reach an inflection point by 2026 where clean energy additions meet demand growth.
- **Measurement Approach** - India uses emissions intensity (per GDP), allowing absolute emissions to rise with economic growth.
- **Policy Contradictions** - Plans include expansion of coal capacity, petrochemical investments, and increased coal-based steel production.
- **Challenges** - Issues like stranded renewable capacity (37 GW) and inadequate grid infrastructure persist.
- **Carbon Sink Concern** - Forest cover remains -24% against 33% target, raising doubts over carbon sink goals.

Quick Bites:

- The towns and city attacked by Israel in Lebanon are Majdal Selm, Kafra, Hanniyeh, Touline, Adloun, Nabatiyeh, and Taybeh.
- Palaeontologists have found a new fossil ape species, Masripithecus moghraensis, in northern Egypt based on 18-million-year-old jaw remains the first definitive fossil ape found in North

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Africa. A massive snow avalanche has recently struck Zojila Pass in Ladakh, disrupting movement along a key Himalayan corridor. An avalanche refers to a rapid flow of snow down a slope, often triggered by natural or human-induced factors.

- The Ministry of Information and Broadcasting has released the TV Ratings Policy 2026, replacing the 2014 guidelines; the Television Rating Point measures the viewership of a TV programme as the percentage of a defined target audience (based on age, region, etc.) watching it at a given time, and is widely used by broadcasters and advertisers to assess programme popularity, fix advertising rates, and plan media strategies.
- Indonesia has become the first country in Southeast Asia to ban social media access for children under the age of 16, marking a major step in global efforts to regulate digital platforms.
- A new butterfly species, Euthalia zubeengargi, has recently been recorded in Arunachal Pradesh, adding to the rich biodiversity of India's northeastern region.
- The western region of Rajasthan has recently been identified as a key wintering stronghold for the Steppe Eagle, a large migratory raptor. The Steppe Eagle belongs to the subfamily Aquilinae, commonly known as "booted eagles." It is a large, robust bird characterised by dark brown plumage, a thick neck and a relatively small head. Its powerful build and soaring flight make it one of the most striking raptors found across open landscapes. The Steppe Eagle (Aquila nipalensis) is classified as Endangered (EN) on the IUCN Red List of Threatened Species.
- Scientists from the Wildlife Institute of India have documented two rare keelback snake species in Northeast India: the Rakhine Keelback (Herpetoreas davidi) in Ngengpui Wildlife Sanctuary and the Kachin Hills Keelback (Hebius gilhodesi) in Namdapha National Park and Kamlang Tiger Reserve, highlighting the region's rich biodiversity. Keelback snakes are generally non-venomous reptiles known for their adaptability to diverse habitats. They are commonly found near water bodies such as streams, wetlands and moist forest areas.

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30-03-2026

PRELIMS ARTICLES:

1. Extracellular RNA (exRNA):

Context: In a study published in the journal Clean Water on March 28, scientists reported that extracellular RNA (exRNA) from bacteria can persist in disinfected drinking water.

What is exRNA?

- exRNA is RNA that exists outside cells, in body fluids such as blood, saliva, urine, and cerebrospinal fluid. For decades, scientists believed RNA only functioned inside the cell and assumed that if RNA 'leaked' out, enzymes in the blood would destroy it.
- However, researchers have found that cells in fact intentionally "export" RNA.
- Extrachromosomal DNA (ecDNA) is a circular fragment of genetic material that exists outside chromosomes and floats freely in the cell nucleus; it forms due to DNA damage, chromosomal rearrangements, or errors during cell replication, and is commonly found in cancer cells, being detected in about 17% of tumor samples, with higher prevalence in liposarcomas, brain tumors, and breast cancer.

2. Madhavpur Mela:

Context: Prime Minister extends greetings on Madhavpur Mela in Porbandar, Gujarat.

About Madhavpur Mela:

- The Madhavpur Mela 2026 is held from March 27th to March 31st, 2026, in the coastal village of Madhavpur Ghed, Porbandar district, Gujarat.

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- This vibrant five-day festival commemorates the legendary marriage of Lord Krishna and Rukmini, celebrating the cultural ties between Gujarat and Northeast India, promoting the "Ek Bharat Shreshtha Bharat" spirit.
- This event is commemorated by a cultural fair held every year, commencing on Ram Navam.

3. IONS Maritime Exercise (IMEX) TTX 2026:

Context: The Indian Navy hosted IONS Maritime Exercise (IMEX) TTX 2026 at the Maritime Warfare Centre, Southern Naval Command, Kochi on 27 March 2026.

About IONS Maritime Exercise (IMEX) TTX 2026:

- **Engagement Overview** - High-level interaction under Indian Ocean Naval Symposium brought together member navies, IOS SAGAR officers, and Indian Navy officials to address non-traditional maritime security challenges in the Indian Ocean Region
- **Participation** - Multinational exercise included Bangladesh, France, Indonesia, Kenya, Maldives, Mauritius, Myanmar, Seychelles, Singapore, Sri Lanka, Tanzania, and Timor-Leste
- **Objective -** Strengthen mutual trust and enhance collaborative maritime security cooperation in the region
- **Strategic Significance** - Highlights India's growing maritime leadership and regional engagement
- **Chairmanship Role** - India will assume IONS Chairmanship for 2026-2028 after a gap of 16 years
- **Milestone Event** - IMEX TTX 2026 marks a key step in boosting coordinated maritime response and cooperation

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About Indian Ocean Naval Symposium:

- **About** - Indian Ocean Naval Symposium is a voluntary initiative to enhance maritime cooperation among navies of the Indian Ocean Region
- **Provides Forum** - Offers an open platform for discussing maritime issues, sharing information. and developing cooperative solutions
- **Composition** - Comprises 34 countries including 25 members and 9 observers
- **Inaugural Conclave** - First held in 2008 at New Delhi, chaired by the Indian Navy (2008-10)
- **Chairmanship** - India will chair IONS again for 2025-27 during the 9th Conclave of Chiefs (CoC)
- **HADR Focus** - Emphasises joint humanitarian assistance and disaster relief operations
- **Capacity Building** - Conducts training exercises and workshops to enhance interoperability among member navies

4. Red-crowned Roofed Turtle:

Context: The Red-crowned Roofed Turtle, once widely found in the Ganga river system, is now confined to shrinking habitats, raising serious conservation concerns.

About Red-crowned Roofed Turtle:

- **About** - Bengal Roof Turtle is a freshwater turtle of the Geoemydidae family, endemic to India
- **Key Characteristics** - Females grow up to 56 cm and 25 kg, while males are smaller with bright multicoloured markings on face and neck
- **Shell Features** - Carapace is strongly keeled (especially in juveniles) and plastron is sharply angulated in younger individuals
- **Diet & Reproduction** - Herbivorous species feeding on aquatic plants and lays 11-30 eggs during March-April

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- **Habitat & Distribution** - Historically found in Ganga, Chambal, and Brahmaputra river systems across India, Nepal, and Bangladesh
- **Decline & Reintroduction** - Disappeared from Ganga due to degradation; reintroduced in Haiderpur Wetland
- **Threats** - Habitat loss, pollution, dams, sand mining, illegal fishing nets, poaching, and pet trade
- **Protection Status** - IUCN: Critically Endangered; Wildlife Protection Act, 1972: Schedule I; CITES: Appendix II

MAINS SPECIFIC ARTICLES:

1. How to secure India's supply chains: (GS paper 3)

Context: The Hindu Editorial Analysis.

- **Context & Challenge** - India's manufacturing ecosystem is deeply integrated with global supply chains, making it vulnerable to geopolitical disruptions, especially in West Asia
- **Import Dependence** - Heavy reliance on imported raw materials, intermediates, energy, fertilizers, and electronics amplifies economic risks
- **Energy Vulnerability** - India imports ~85% crude oil and over 50% gas, exposing it to price shocks and supply disruptions
- **Economic Impact of Oil Prices** - Every $10/barrel increase raises import bill by $13-14 billion, increases inflation by 30-40 bps, and reduces GDP growth by 0.2-0.3%
- **Energy Security Strategy** - Requires diversification of import sources, domestic exploration, and technological transition
- **Renewable Energy Push** - Progress towards 500 GW non-fossil capacity target by 2030, but storage investments are crucial
- **Green Hydrogen Role** - National Green Hydrogen Mission can reduce dependence on imported fossil fuels
- **Strategic Buffers** - Expansion of strategic petroleum reserves to manage short-term disruptions

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- **Food Security Concerns** - High import dependence on edible oils, pulses, and fertilizers impacts inflation and rural livelihoods
- **Agriculture Measures** - Need for assured procurement, price support, crop diversification, and strengthening oilseed missions
- **Strategic Reserves** - Buffer stocks for edible oils and pulses to handle supply shocks
- **Fertilizer Reforms** - Diversification of suppliers, boosting domestic production, and scalling bio-fertilizers
- **Manufacturing Import Structure** - Imports form -19% of GDP; raw materials (34%). intermediates (31%), capital goods (24%) dominate
- **Upstream Dependency** - India strong in downstream manufacturing but dependent on imports for APIs, electronics, and intermediates
- **Critical Minerals Risk** - Dependence on lithium, cobalt, copper, and rare earths concentrated globally
- **Pharma & Electronics Dependence** - 65-70% pharma intermediates from China; high reliance on East Asia for semiconductors and components
- **Domestic Manufacturing Push** - Need to strengthen intermediate industries like APIs and semiconductors beyond final assembly
- **Diversification Strategy** - Expand supply sources through partnerships with Africa and Latin America
- **Process Innovation** - Adoption of alternative materials, efficient technologies, and reduced import intensity
- **Way Forward** - Integrated approach involving government, industry, and global partnerships to build long-term supply chain resilience.

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Quick Bites:

- A drone strike claimed by Ukraine triggered a fire at Russia's Baltic port of Ust-Luga.
- The IndiaSkills National Competition 2025-26 has begun in Greater Noida, organised by the Ministry of Skill Development and Entrepreneurship with support from National Skill Development Corporation, bringing together over 650 participants to compete across 63 skill categories and promote a future-ready workforce.
- The Indian Air Force is set to upgrade its MiG-29UPG fighter jets with the Advanced Short Range Air-to-Air Missile (ASRAAM), significantly strengthening its close-range air combat capability.
- A new frog species named "Nyctibatrachus kali", commonly called the Kali Night Frog, has recently been discovered in Karnataka.

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31-03-2026

PRELIMS ARTICLES:

1. Nuclear Non-Proliferation Treaty (NPT):

Context: Iran's Parliament is reviewing a possible exit from the Nuclear Non-Proliferation Treaty (NPT), Foreign Ministry spokesperson Esmail Baghaei said.

About Nuclear Non-Proliferation Treaty (NPT):

- Nuclear Non-Proliferation Treaty was approved by the United Nations General Assembly on 12 June 1968 and came into force on 5 March 1970.
- NPT is the only multilateral legally binding treaty aimed at nuclear disarmament and peaceful use of nuclear energy.
- It defines Nuclear-Weapon States (NWS) as those possessing nuclear weapons before 1 January 1967.
- The five NWS are United States, United Kingdom, France, China, and Russia.
- Non-nuclear weapon states agree not to develop or acquire nuclear weapons.
- Nuclear weapon states commit not to transfer nuclear weapons or related technology.
- The treaty promotes peaceful use of nuclear energy under safeguards.
- It allows member states to withdraw if supreme national interests are threatened.
- NPT has 191 member states, making it one of the most widely adhered international treaties.
- Compliance is monitored by the International Atomic Energy Agency.
- India is not a member of the NPT.
- India criticizes the NPT as discriminatory for legitimizing nuclear weapons for only five countries.

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2. Insolvency and Bankruptcy (Amendment) Bill 2026:

Context: Replying to the debate on the Insolvency and Bankruptcy (Amendment) Bill 2026, Ms. Sitharaman said the point of the IBC was not debt recovery, but the rescue of viable businesses and addressing their financial stress.

What is Insolvency and Bankruptcy Code (IBC)?

- Insolvency and Bankruptcy Code is India's unified law consolidating insolvency and bankruptcy provisions.
- It provides a time-bound mechanism for resolution of insolvency.
- Applicable to companies, LLPs, firms, and individuals (excluding financial service providers).
- Corporate insolvency resolution must be completed within 180 days (extendable with approval).
- Small companies/startups (<1 crore turnover) must complete the process in 90 days (extendable by 45 days).
- Failure to resolve insolvency leads to liquidation of the entity.
- Insolvency and Bankruptcy Board of India is the regulatory authority overseeing IBC proceedings.
- IBBI regulates insolvency professionals, agencies, and information utilities
- Licensed insolvency professionals manage the resolution process and debtor's assets.
- National Company Law Tribunal adjudicates cases for companies, while Debt Recovery Tribunal handles individuals.
- Resolution process can be initiated by either debtor or creditor upon default.
- During the 180-day process, legal actions against the debtor are stayed (moratorium).
- Committee of Creditors (CoC), comprising financial creditors, decides the resolution plan.
- CoC may restructure debt or opt for asset sale to recover dues.
- If no decision is reached within the timeframe, the debtor goes into liquidation.

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- In liquidation, proceeds are distributed in priority; resolution costs → secured creditors → employees/workers → unsecured creditors.

About Insolvency and Bankruptcy (Amendment) Bill 2026:

- Insolvency and Bankruptcy Code amendment Bill was proposed by the Ministry of Corporate Affairs to strengthen insolvency resolution.
- Introduces a creditor-initiated insolvency resolution process for faster action.
- Establishes a two-tier approval framework to streamline resolution plans.
- Provides for group insolvency to handle interconnected companies efficiently.
- Enables cross-border insolvency mechanisms for global cases.
- Clarifies that government dues qualify as secured claims only if backed by contractual agreements.
- Allows transfer of assets from personal/corporate guarantors to lenders during resolution.
- Aims to reduce systemic delays and improve efficiency in insolvency proceedings.
- Seeks to enhance resolution outcomes and investor confidence.
- Companies Act 2013 amendments aim to simplify business processes.
- Limited Liability Partnership Act 2008 revisions focus on reducing compliance burden.
- Proposes rationalisation of forms and procedures to improve ease of doing business.
- Continues push towards decriminalisation of minor corporate offences.

3. Agray:

Context: 'Agray', the fourth of eight ASW SWC (Anti-Submarine Warfare Shallow Water Craft), indigenously designed and built by Garden Reach Shipbuilders and Engineers (GRSE), Kolkata, has been delivered to the Indian Navy on 30 Mar 2026 at Kolkata.

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More about:

- Anti-Submarine Warfare Shallow Water Crafts (ASW SWCs) are designed as per Indian Register of Shipping classification rules.
- Built indigenously by Garden Reach Shipbuilders & Engineers Limited showcasing India's defence shipbuilding capability.
- Each vessel is about 77 metres long, making them the largest Indian Naval warships powered by waterjets.
- Equipped with lightweight torpedoes, indigenous rocket launchers, and shallow water SONAR for underwater threat detection.
- Enhances Indian Navy capabilities in anti-submarine warfare, mine warfare, and coastal surveillance.
- Ship is a reincarnation of INS Agray, a 1241 PE class patrol vessel decommissioned in 2017 * Continues naval tradition of reusing legacy names to preserve historical lineage.

4. "Energy Statistics India 2026":

Context: The National Statistics Office (NSO), Ministry of Statistics and Programme Implementation has released the annual publication "Energy Statistics India 2026".

Major highlights of the report:

- During the FY 2024-25, the Indian economy has depicted a healthy expansion in the Total Primary Energy Supply (TPES) registering a growth of 2.95% over the past year and stood at 9,32,816 KTOE(Kilo Tonnes of oil Equivalent).

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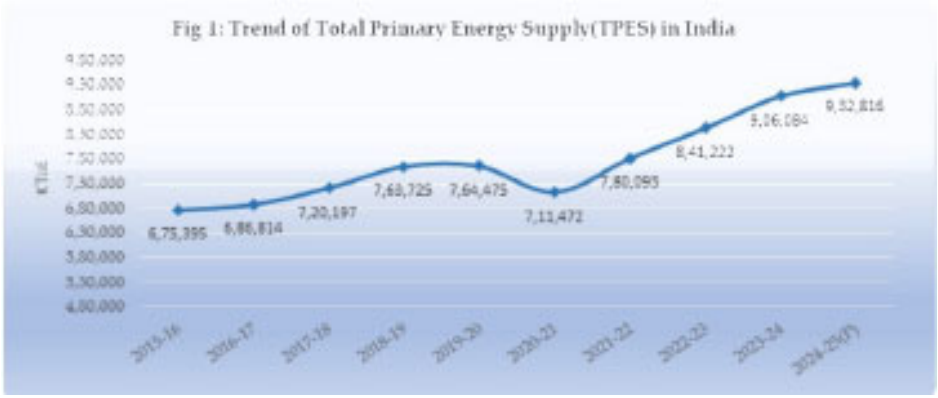

- India has a huge potential for generation of renewable energy which stands at 47,04,043 Megawatt as on 31-Mar-25. In the total potential, the Solar Energy has witnessed a staggering growth from 748,990 Megawatt during FY: 2023-24 to 33,43,378 Megawatt during FY: 2024-25 and is having the highest share (around 71%) followed by Wind Power (11,63,856 Megawatt) and Large Hydro (1,33,410).
- More than 70% of the total potential for generation of renewable energy is concentrated in the following six (6) States viz. Rajasthan (23.70%), Maharashtra (14.26%), Gujarat (9.10%), Andhra Pradesh (9.1%), Karnataka (8.59%) and Madhya Pradesh(8.09%).
- The installed-capacity for generating electricity (including Utility and Non-Utility) from the Renewable resources has also experienced a significant growth over the past years. From 90,134 Mega Watt as on 31-Mar-2016, it has risen to 2,29,346 Mega Watt as on 31-Mar-2025, which is a CAGR of 10.93% over the years.
- The gross generation of electricity from the Renewable resources (both Utility and Non-Utility together) has also increased significantly over the years. From an amount of 1,89,314 GWH of electricity generated during FY 2015-16, it has increased to 4,16,823 GWH during FY 2024-25, which is a CAGR of 9.17% over the years.

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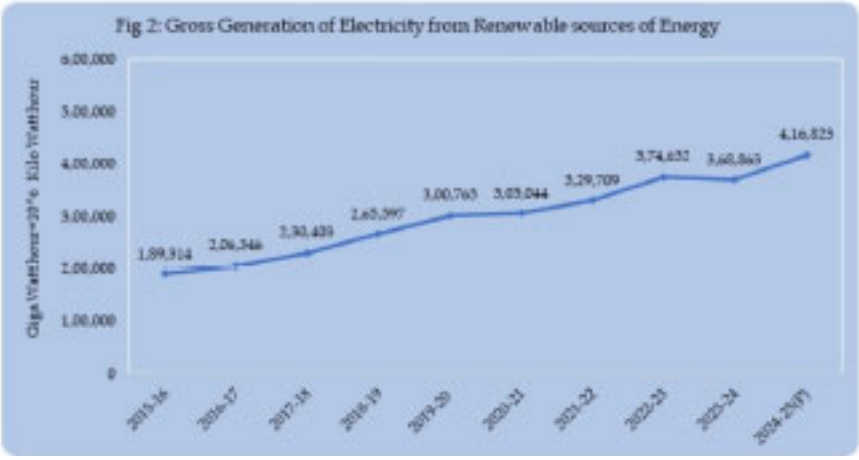

- The per-capita consumption of energy over the years has gone up from 15,296 Mega Joule/person during FY 2015-16 to 18,096 Mega Joule/person during FY 2024-25 which is a CAGR of 1.89% over the years.
- Among all the major energy supply sources, coal has remained the dominant source, contributing the highest share to the total energy supply. Energy supply from coal (including lignite) has increased from 3,87,761 Ktoe in FY 2015-16 to 5,52,315 Ktoe in FY 2024-25. All other sources like Crude Oil, Natural Gas etc. have also registered a consistent growth over the periods.

5. Maternal Mortality rate:

Context: India among the countries with Highest Maternal Mortality Burden.

About Maternal mortality rate:

- According to WHO, it refers to death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of duration and site of pregnancy, from any cause related to pregnancy or its management except accidental or incidental causes.

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- It is a key indicator for its measurement, defined as the number of maternal deaths during a given time period per 100,000 live births during the same period.
- Sustainable Development Goals (SDG) 3.1 aims at reducing global MMR to less than 70 per 100,000 live births.
- India accounted for about 24,700 of global 2.4 lakh maternal deaths in 2023.
- Based on the Special Bulletin on Maternal Mortality in India 2020-22 released in mid-2025, India's Maternal Mortality Ratio (MMR) has dropped to 88 per lakh live births (2020-22), down from 93 (2019-21).

MAINS SPECIFIC ARTICLES:

1. Ensuring federalism within delimitation: (GS paper 2)

Context: The Hindu Editorial analysis.

- **Constitutional Basis:** Article 81 of the Indian Constitution mandates proportional representation of seats based on population across States.
- **Changing Demographics:** Earlier parity (1951 & 1971) no longer holds due to uneven population growth among States.
- **Delimitation Timeline:** Post-2026 Census, delimitation will occur; Census results expected by 2028 followed by 2029 Lok Sabha elections.
- **84th Constitutional Amendment:** 84th Constitutional Amendment Act, 2002 froze seat allocation till first Census after 2026 to promote population stabilization.
- **Fertility Trends:** Total Fertility Rate (TFR) of 2.1 achieved by only 9 States in 2005 but by most States by 2021, except Bihar, UP, Jharkhand, Meghalaya, Manipur.
- **Inter-State Disparity:** States above national TFR still have ~45% higher fertility compared to early achievers.

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- **Demographic Performance (DemPer):** Proposal to include population stabilisation performance as a factor in seat allocation.
- **Finance Commission Analogy:** Similar to Finance Commission of India which uses demographic performance along with population for fund allocation.
- **Seat Allocation Principle:** Existing 543 Lok Sabha seats remain unchanged; Demper applies only to additional seats.
- **Weightage Formula:** 10% weight to early achievement (pre-2005 TFR ≤2.1) and 90% to rate of TFR decline (2005-2021).
- **Outcome of Proposal:** All States gain seats; populous States gain more in absolute terms while better-performing States retain proportional share.
- **Federal Balance:** Ensures fair representation while rewarding responsible population control policies.
- **Concept of Fair Federalism:** Balances democratic equality (population) with equity among States.
- **Lok Sabha Size Debate:** Suggested cap of around 700 seats to maintain quality legislative deliberation.
- **Beyond North-South Divide:** Population control success seen across multiple regions (Punjab, Haryana, Himachal, Goa), not just southern States.
- **Conclusion:** Integrating Demper in delimitation can strengthen federal stability, reduce regional tensions, and improve governance incentives.

2. On the implications of euthanasia: (GS paper 4)

Context: The Hindu Explainer.

- **Recent Supreme Court Judgment:** Harish Rana v. Union of India allowed withdrawal of Clinically Assisted Nutrition and Hydration (CANH), expanding scope of passive euthanasia

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Right to Die with Dignity: Recognised under Article 21 in Common Cause v. Union of India linking it with right to life and palliative care

Legal Evolution: Aruna Shanbaug v. Union of India permitted passive euthanasia and living wills; further simplified in Common Cause v. Union of India

New Guidelines: Reduced procedural complexity by removing multiple medical boards and mandatory judicial oversight in every case

Patient Autonomy: Emphasised right of individuals to refuse life-sustaining treatment through advance directives (living wills)

- **Ethical Debate:** Conflict between natural process of death and human intervention versus dignity in life and death

  Principle of Autonomy: Patient or next of kin has the right to decide on withdrawal of treatment

  Principle of Beneficence: Decisions must promote patient's welfare and relief from suffering

  Principle of Non-Maleficence: Action should avoid harm while considering withdrawal of life support

  Principle of Justice: Ensures fairness and prevents exploitation or discrimination
- **Theory of Double Effect:** Based on St. Thomas Aquinas, justifies actions with dual outcomes if intent is morally sound (relief outweighs harm).
- **Social Transformation:** Shift from preserving life at all costs to prioritising quality and dignity of life
- **Economic Implications:** Reduces financial burden of prolonged life-support on families, especially vulnerable groups
- **Risk of Misuse:** Concerns over coercion, especially for elderly, disabled, and economically weak sections
- **Ethical Concerns:** Possibility of decisions influenced by social neglect or financial pressures
- **Judicial Clarification:** Supreme Court termed "passive euthanasia" as outdated and discouraged its usage

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- **Continued Care:** Withdrawal of treatment does not mean abandonment; palliative and end-of-life care must continue

3. Global Education Monitoring Report 2026: (GS paper 2)

Context: UNESCO released report titled Global Education Monitoring Report 2026: Access and Equity, Countdown to 2030.

Major observations:

- Out-of-school population stood at 273 million children, adolescents, and youth globally in 2024 (excluding ~13 million in conflict-affected countries)
- No country has achieved universal secondary education completion despite SDG 4 target
- Increased access to education improves short-term outcomes but does not ensure meaningful learning
- Systemic reforms include legal recognition of education as a right and compulsory schooling laws (e.g., Right of Children to Free and Compulsory Education Act, 2009)
- Public financing models (e.g., Denmark) help balance equity with decentralization
- Demand-side reforms include cash transfers and scholarships (e.g., Karnataka preschool support increased participation by 20%)
- Additional measures include provision of school supplies, and improved health and nutrition
- Supply-side reforms focus on expanding public infrastructure like preschools to reduce reliance on private institutions
- Open and distance education systems have significantly increased access to higher education globally

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Quick Bites:

- The Center for Marine Living Resources & Ecology (CMLRE), Kochi, Kerala, under the Ministry of Earth Sciences (MOES), has achieved a landmark milestone in marine conservation. The Ministry of Environment, Forest and Climate Change (MoEFCC) has officially designated CMLRE's "Bhavasagara" Referral Centre as a National Repository for Deep-Sea Fauna.
- Jayant Chaudhary, Minister of State (Independent Charge) for Skill Development and Entrepreneurship and MoS for Education, participated in the Outcomes Finance Alliance Summit 2026 held in Cape Town from 25-27 March 2026, highlighting India's commitment to innovative financing, global partnerships, and outcome-based investments in skills and human development; the summit serves as a global platform bringing together governments, investors, philanthropies, and development partners to promote outcomes-based approaches in development finance.
- The Department of Pharmaceuticals under the Ministry of Chemicals & Fertilizers, in collaboration with Federation of Indian Chambers of Commerce and Industry and Indian Pharmaceutical Alliance, will host the India Pharma 2026 on April 13-14, 2026 at Federation House, New Delhi, aiming to transform India's pharmaceutical sector from a volume-driven industry to a value- and innovation-led global hub, with the theme 'Discover in India: Leapfrogging Life-Sciences Innovation' focusing on advancing research and positioning India as a leader in life sciences innovation.
- Parts of Western Australia witnessed dramatic red skies as a powerful dust storm swept across the region ahead of Tropical Cyclone Narelle.
- The Archaeological Survey of India (ASI) has recently initiated fresh excavation work at the historically significant Balirajgarh site in Bihar's Madhubani district. The move aims to uncover deeper insights into ancient civilisations and strengthen understanding of early cultural and administrative centres in the region.
- In a major push towards sustainable infrastructure, the Council of Scientific and Industrial Research (CSIR) has transferred an indigenous bio-bitumen technology for large-scale industry

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adoption. The bio-bitumen technology has been jointly developed by CSIR-Central Road Research Institute (CRRI) and CSIR-Indian Institute of Petroleum (IIP). It utilises lignocellulosic biomass such as crop residue through a thermochemical conversion process to produce a renewable alternative to petroleum-based bitumen.

- Reserve Bank of India has capped banks' Net Open Position (NOP) in Indian rupee at $100 million at the end of each business day, significantly lower than the earlier limit of 25% of a bank's total capital; NOP refers to the difference between a bank's foreign currency assets and liabilities and indicates its exposure to exchange rate fluctuations, with a higher NOP implying greater currency risk.

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