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# West Asia Crisis: India's Strategic Autonomy and Balanced Diplomacy

## Message



An officer with a right mindset is an officer that a nation aspires for. A right mindset doesn't necessarily comprise unlimited jargon of knowledge rather a right amount of knowledge and its appropriate execution. Especially, when it comes to UPSC and State PSCs preparation, the crux is not to accumulate the knowledge but its effective implementation and utilization in tackling any situation. The situation here can be anything from UPSC CSE Prelims to the major issues that need to be addressed. The journey is hard but it is worth.

Perfect 7 has been part of many UPSC and State PSCs aspirants in their journey of becoming well reputed officers serving nationally and internationally. The magazine itself had gone through constant ebb and flows of change and improvements. Now, that the magazine is in its monthly era, I hope it becomes your perfect preparation partner and guides you through this ever learning endeavor of Civil Services Preparation.

With Best wishes.

Vinay Singh  
Founder  
Dhyeya IAS

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# Indian Society & Art and Culture

## Repatriation of Cultural Heritage: A Convergence of Diplomacy, Law and Civilizational Restoration

### Context:

Recently, the Washington-based Smithsonian National Museum of Asian Art (NMAA) announced the return of three ancient bronze sculptures to the Government of India. The step by the Smithsonian reflects 'ethical diplomacy' in international relations and India's growing 'soft power'. It is not merely a physical transfer of artefacts, but also signifies a global shift towards 'cultural justice'.

In this context, on 24 March 2026, a Parliamentary Committee suggested the establishment of a 'Heritage Recovery Task Force' to further strengthen India's cultural repatriation efforts. The proposed task force is recommended to include diplomats, legal experts, archaeologists, and art historians, in order to make the identification, claim, and return of Indian artefacts located abroad more effective and coordinated. This development indicates that India is now prioritizing the 'homecoming' of its cultural heritage not only through international cooperation but also by strengthening institutional mechanisms.

### Historical Background:

- India's cultural wealth has been a center of global attraction for centuries. During the colonial period and the decades that followed, thousands of artefacts were illegally smuggled out of India and are still

housed in foreign museums.

- Bronze sculptures created during the Chola period (9th–13th century), especially from South India, are globally renowned for their metallurgical excellence and artistic grandeur. However, these heritage objects were systematically exploited during colonial rule.
- During the British Raj, numerous valuable artefacts were taken to Europe in the name of 'collection'. Even after independence, this trend did not cease but evolved into organized international art smuggling networks.
- According to estimates by UNESCO, by the end of the 20th century, nearly 50,000 artefacts had been illegally taken out of India. These objects are not merely 'antiques'; they are testimonies to India's living traditions, religious beliefs, and civilizational evolution.

### Decolonization and Changing Perspectives of Global Museums:

- For much of the 20th century, Western museums justified their legitimacy through the concept of the 'Universal Museum'. They argued that they were safeguarding world heritage and making it accessible to a global audience. However, in the 21st century, the demand for 'decolonization' has transformed this discourse.

- In this context, three significant shifts are visible:
  - » **Moral Responsibility:** Museums are increasingly acknowledging that many objects acquired in the past were obtained through unethical or illegal means.
  - » **Provenance Research:** Systematic investigation into the origin and ownership history of artefacts is becoming a mandatory practice.
  - » **Growing Trend of Repatriation:** If it is established that an artefact is the result of theft or illegal export, returning it to its country of origin is emerging as a global norm.
- Thus, the Smithsonian’s decision is not an isolated event but part of a broader global trend.

**India’s Cultural Diplomacy:**

- Over the past decade, India has incorporated the return of cultural artefacts as an important component of its foreign policy. This is not merely an issue of ‘cultural preservation’ but a broader effort of ‘civilizational restoration’.
  - » **Bilateral Engagements:** During the Prime Minister’s foreign visits, the return of artefacts has become part of the agenda. Countries such as the United States, Australia, Germany, and Canada have returned hundreds of artefacts to India in recent years.
  - » **G20 Delhi Declaration:** During India’s presidency, ‘culture’ was given prominence as a separate working group, and global consensus was built around the “return of cultural property”.

**Policies Related to Repatriation of Artefacts:**

To bring back artefacts, the Government of India has adopted a coordinated and multi-dimensional strategy, involving diplomatic, legal, and institutional efforts:

- **Cultural Property Agreement (CPA):** India and the United States signed their first-ever ‘Cultural Property Agreement’ in July 2024. Its objective is to curb the illegal trafficking

of artefacts and expedite the return of Indian antiquities seized by US Customs.

- **Heritage Repatriation Fund (Proposed):** In March 2026, a Parliamentary Standing Committee proposed the establishment of a ‘Heritage Repatriation Fund’.
  - » **Objective:** To create a dedicated financial pool for legal battles, transportation, and conservation expenses related to bringing artefacts back from abroad.
  - » **Feature:** It proposes contributions from the corporate sector and Indian diaspora (PPP model).
- **‘Re(ad)dress: Return of Treasures’:** This is a global awareness campaign and exhibition initiative highlighted during India’s G20 presidency. Its aim is to create moral pressure and dialogue at the international level regarding the repatriation of stolen cultural property.
- **National Mission on Monuments and**

**Antiquities (NMMA):** Launched in 2007, this mission now works in coordination with the Archaeological Survey of India (ASI). It prepares a national database of artefacts. When an artefact is found abroad, its 'provenance' is established through this database and documentation, forming the legal basis for its return.

- **Coordination of Nodal Agencies:** The Government of India has created an interdisciplinary team working in "mission mode":
  - » **ASI:** For technical verification and identification.
  - » **Ministry of External Affairs (MEA):** For bilateral negotiations and cultural diplomacy.
  - » **Law Enforcement Agencies (CBI/Interpol):** For legal action against art mafias and dismantling trafficking networks.
- Due to this proactive strategy, more than 640 artefacts have been brought back to India since 2014. In September 2024 alone, the United States returned 297 artefacts during the Prime Minister's visit.

### Legal Framework and Challenges:

Although progress has been significant, several legal challenges persist:

- **UNESCO Convention 1970:** It prohibits illicit import, export, and transfer of ownership of cultural property. However, it is not retrospective, making recovery of older looted artefacts difficult.
- **Lack of Evidence:** In many cases, FIRs regarding theft are not registered, making it difficult to establish ownership in international courts.
- **Role of ASI:** There is a growing need to enhance the capacity of the Archaeological Survey of India and develop digital databases to ensure proper identification of artefacts.

### Significance of Repatriation:

- The return of cultural heritage is not only a matter of historical justice but also of national identity, pride, and social reconnection.

- » **Community Reconnection:** These artefacts were often 'utsav vigrahas' (festival idols) of temples. Their return restores the faith of local communities in their traditions.
- » **Education and Research:** Availability of these artefacts in India provides researchers and students the opportunity to study their own heritage, strengthening knowledge production and cultural understanding.

### Way Forward:

- Cultural diplomacy positions India as a 'civilizational state'. It sends a message to the world that India is capable of protecting its heritage.
  - » **Digital Archiving:** India should develop a 3D digital database of all temple idols to enable immediate identification in case of theft.
  - » **Modernization of Museums:** There is a need for world-class museums with advanced security and conservation standards to house returned artefacts.
  - » **Global Cooperation:** Partnerships with international institutions should be further strengthened.
- Through these measures, India can not only safeguard its heritage but also assume a leadership role in global cultural discourse.

### Conclusion:

The 'homecoming' of cultural heritage is not merely an attempt to correct historical injustices, but a significant step towards building a new global order where justice, ethics, and cultural respect are prioritized. The proposed Heritage Recovery Task Force and the return of artefacts by the Smithsonian indicate that the world is now ready to reassess its colonial legacy. For India, this is not just about retrieving lost objects, but about re-establishing its civilizational identity. This, in essence, reflects the true meaning of 'cultural justice', restoring the memories of the past with dignity while shaping a balanced and just global future.

# Short Issues

## Centre Temporarily Suspends Fortified Rice Distribution

### Context:

Recently, The Central Government has temporarily suspended the distribution of fortified rice under the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) and other welfare schemes such as the Targeted Public Distribution System (TPDS), Integrated Child Development Services (ICDS) and PM-POSHAN (formerly Mid-Day Meal Scheme).

### Reasons behind suspension:

- The suspension stems from findings that prolonged storage in the central pool, often for 2–3 years, under varying moisture, temperature and humidity conditions leads to nutrient degradation.
- The IIT study highlighted that such losses undermine the intended health benefits. The government has clarified that foodgrain entitlements remain unchanged; beneficiaries will receive non-fortified rice until improved mechanisms are developed.

### About Fortified Rice:

- Fortified rice is regular rice enriched with essential micronutrients "iron, folic acid and Vitamin B12" to improve its nutritional quality and combat hidden hunger, particularly among women and children.
- The process involves producing Fortified Rice Kernels (FRKs) by blending rice flour with micronutrient premix through extrusion technology.
- These kernels are mixed with polished rice in a 1:100 ratio, enhancing the nutritional value without altering taste or appearance.

### Associated Schemes:

- The initiative was integrated into major food and nutrition programmes:
  - » **PMGKAY:** Provides free/subsidised foodgrains.
  - » **TPDS (under NFSA):** Ensures subsidised

grains via ration shops.

- » **PM-POSHAN:** Provides mid-day meals in schools.
- » **ICDS:** Delivers supplementary nutrition through Anganwadi centres.
- The rollout was completed nationwide by March 2024, fully funded by the Centre, with continuation approved till December 2028.

### Aim of the Fortification Initiative:

- The primary objective was to reduce micronutrient malnutrition and iron-deficiency anaemia by 2024 through a cost-effective, scalable public health intervention.
- Making fortified rice mandatory in welfare schemes was intended to systematically improve nutrition outcomes among vulnerable populations.

**CENTRE SUSPENDS RICE FORTIFICATION SCHEME**  
Cites IIT Study on Shelf Life & Efficacy; Activists Welcome Move  
February 27, 2026

The infographic features a central illustration of a rice sack labeled 'PAUSED FORTIFIED RICE'. Arrows point from the sack to icons for PMGKAY, ICDS, and Mid-Day Meal Scheme. A text box states: 'TEMPORARY DISCONTINUATION: Union Food Ministry suspends rice fortification under PMGKAY and allied welfare schemes. Until a more effective nutrient delivery mechanism is identified.'

**THE TRIGGER: IIT KHARAGPUR STUDY**

- CRITICAL FACTORS:** Moisture, temperature, storage conditions, and packaging influence stability.
- MICRONUTRIENT REDUCTION:** Susceptible to loss during prolonged storage & handling.
- SHORTER SHELF LIFE:** Effective life shorter than expected, limiting nutritional outcomes.

**ACTIVISTS' PERSPECTIVE**

- Welcomed the move.
- Challenged scheme in Supreme Court.
- "Fortification not a scientific method to curb anaemia."

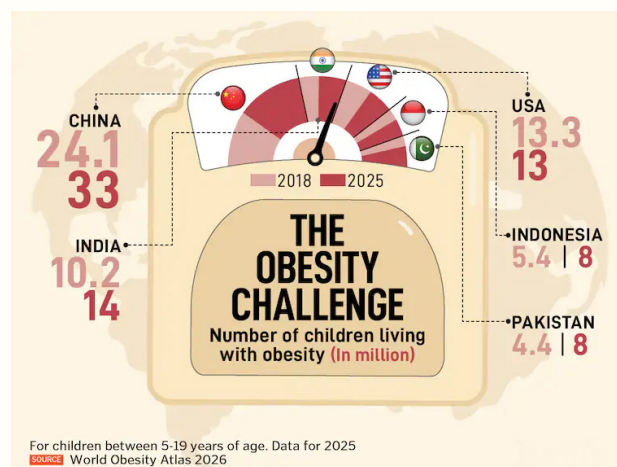
**GOVERNMENT ASSURANCE**

- **NO REDUCTION** in foodgrain entitlements.
- Operations continue under PDS, ICDS, Mid-Day Meal Scheme.

### Steps in the Fortification Process:

- **Production of FRKs:** Rice flour mixed with micronutrients is shaped into grain-like kernels.

- **Blending:** FRKs are blended with regular rice in a 1:100 ratio.
  - **Distribution:** The fortified rice is supplied through PDS-linked schemes nationwide.
- Current Challenges:**
- Extended storage duration in government warehouses.
  - Nutrient instability due to environmental conditions.
  - Logistical constraints in large-scale procurement and distribution.
  - These factors reveal the gap between policy ambition and ground-level implementation.
- Way Forward:**
- Fortification remains crucial for addressing hidden hunger, but delivery systems must ensure nutrient retention until consumption. Future strategies may include improved packaging, decentralised blending near distribution points, or complementary nutrition interventions such as supplementation and dietary diversification.
- Conclusion:**
- The temporary suspension reflects a pragmatic recalibration of nutrition policy. While fortified rice remains a valuable public health tool, ensuring its effectiveness requires robust storage and delivery mechanisms. The focus now is to align nutritional objectives with logistical realities without compromising food security for vulnerable populations.
- **Major Statistics:**
    - » 41 million children in India have high BMI.
    - » 14 million children are living with obesity.
    - » Nearly 15 million children (5–9 years) are overweight or obese.
    - » Over 26 million adolescents (10–19 years) are overweight or obese.
    - » India ranks second globally, after China.
  - **Global Scenario:** Three countries have more than 10 million obese children:
    - » China
    - » India
    - » United States
  - The report also predicts that 507 million children worldwide may be overweight or obese by 2040.



## Childhood Obesity in India

### Context:

World Obesity Atlas 2026, released by the World Obesity Federation on World Obesity Day (March 4), highlights the alarming rise in childhood obesity and the paradox of coexisting undernutrition and obesity in India. India ranks second after China in the number of children with high Body Mass Index (BMI).

### Key Findings of the Atlas 2026:

### Major Risk Factors:

- **Low Physical Activity**
  - » 74% of adolescents (11–17 years) do not meet recommended physical activity levels.
  - » Increased screen time and sedentary lifestyles contribute significantly.
- **Poor Infant Feeding Practices**
  - » 32.6% of infants (1–5 months) experience sub-optimal breastfeeding.
- **Unhealthy Dietary Patterns**
  - » High consumption of sugary drinks and ultra-processed foods.
  - » Children aged 6–10 consume sugary

drinks averaging 50 ml per day.

- **Limited School Nutrition Coverage**
  - » Only 35.5% of school children receive school meals, limiting access to balanced diets.
- **Intergenerational Health Issues**
  - » 13.4% of women aged 15–49 have high BMI.
  - » 4.2% suffer from Type-2 diabetes, increasing metabolic risks in children.

### **Health Implications of Rising Childhood Obesity:**

Childhood obesity is associated with multiple long-term health risks.

- **Physical Health**
  - » Type-2 diabetes
  - » Cardiovascular diseases
  - » Hypertension
  - » Fatty liver disease
- **Psychological Effects**
  - » Low self-esteem
  - » Depression
  - » Social stigma and bullying
- **Economic Burden**
  - » Increased healthcare costs
  - » Reduced productivity in adulthood
- The report predicts that disease indicators linked to high BMI will rise significantly in India by 2040.

### **The Double Burden of Malnutrition in India**

India faces a unique nutritional paradox: undernutrition coexists with obesity.

- **NFHS-5 Data Highlights**
  - » 35.5% children under 5 are stunted
  - » 32.1% are underweight
  - » 19.3% are wasted
- Over 50% children are anaemic
- This dual challenge indicates imbalanced diets rather than just lack of food.

### **Measures Needed to Address Childhood Obesity:**

- **Policy Interventions**
  - » Taxation on sugar-sweetened beverages

- » Restriction on junk food marketing targeted at children
- » Clear front-of-package food labelling
- **School-Based Measures**
  - » Mandatory physical education
  - » Nutritious school meal programmes
  - » Nutrition awareness campaigns
- **Community Level Actions**
  - » Promotion of breastfeeding
  - » Awareness about balanced diets
  - » Encouraging active lifestyles
- **Health System Strengthening**
  - » Early screening for childhood obesity
  - » Integrated nutrition and lifestyle counselling

### **Conclusion:**

The rise in childhood obesity in India represents a silent public health crisis. Addressing it requires a multisectoral approach involving health, education, food systems, and urban planning. If India fails to act decisively, the country risks facing a future epidemic of non-communicable diseases, undermining the demographic dividend.

## **Repatriation of Tirumangai Alvar Bronze Idol to India**

### **Context:**

Recently, The University of Oxford's Ashmolean Museum has returned a 16th century bronze idol of Saint Thirumankai Alvar to India for its journey back to Shri Soundararaja Perumal temple in Thadikombu in Tamil Nadu, where it originally belongs. The bronze idol was acquired by the museum in a Sotheby's auction in 1967.

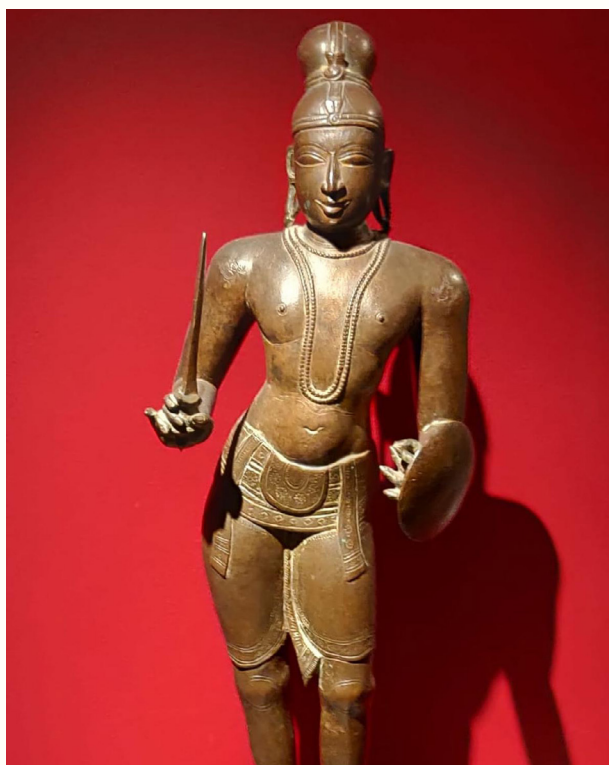
### **About Saint Tirumankai Alvar:**

- Saint Tirumankai Alvar was one of the twelve Alvar saints of South India associated with the Vaishnavite Bhakti tradition. He is considered the last and most prolific among the Alvars and was known for his intense devotion to Lord Vishnu and his contributions to devotional literature.

- » He lived around the 8th century CE.
- » Initially a military commander named Kaliyan, he later transformed into a saint devoted to Vishnu.
- » He composed several hymns that form part of the Divya Prabandham, a Tamil anthology of about 4,000 devotional hymns.
- » Tirumankai Alvar is also credited with contributing to the development of the Srirangam Temple.

### About the Bronze Statue:

- The returned artefact is a 16th-century bronze idol of Saint Tirumankai Alvar that originally belonged to the Sri Soundararaja Perumal Temple in Thadikombu, Tamil Nadu.
- **Key features of the statue include:**
  - » Height of about 57–60 cm.
  - » Crafted using traditional South Indian bronze-casting techniques.
  - » Used in temple rituals and religious processions.



### Process of Repatriation:

- The Ashmolean Museum conducted scientific metal analysis of the bronze at the request of the Archaeological Survey of India (ASI) to verify its authenticity and origin.
- After the investigation established the idol's provenance, the museum agreed to return it to India. The handover ceremony took place at the High Commission of India in London, marking the official repatriation of the artefact.

### Significance of the Repatriation:

- **Restoration of Cultural Heritage:** The return of the idol represents the restoration of a religious and cultural symbol to its original temple.
- **Global Movement for Artefact Repatriation:** Many countries are now working to return artefacts removed during colonial or illicit circumstances.
- **Strengthening Cultural Diplomacy:** The repatriation reflects cooperation between museums, scholars, and governments in preserving cultural heritage.
- **Protection of Temple Antiquities:** The case also highlights the role of institutions such as the Archaeological Survey of India and Tamil Nadu Idol Wing CID in tracing stolen artefacts.

### Conclusion:

The return of the Tirumankai Alvar bronze statue is more than the restoration of an artwork; it represents the reunification of an object of faith with its original place of worship. The episode underscores the importance of ethical museum practices and international collaboration in protecting cultural heritage.

## Mandatory Menstrual Leave Debate in India

### Context:

Recently, the Supreme Court dismissed a petition seeking a national law mandating

menstrual leave for women. The Court observed that mandatory menstrual leave could inadvertently limit employment opportunities for women, as employers might hesitate to hire them. The Court suggested that governments consider voluntary or consultation-based policies rather than implementing mandatory legislation.

**The Case for Menstrual Leave:**

- Supporters argue that menstrual leave recognizes biological and health realities faced by many women. Conditions such as dysmenorrhea, endometriosis, PCOS, and PCOD can cause severe pain and reduced productivity during menstruation.
- Globally, the recognition of menstrual health in labour policy is gradually expanding. Several countries have introduced menstrual leave provisions:
  - » Japan introduced menstrual leave as early as 1947, allowing women to take leave if working during menstruation becomes difficult.
  - » South Korea provides one day of menstrual leave per month under labour law.
  - » Indonesia allows women two days of menstrual leave each cycle under its labour regulations.
  - » Spain became the first European nation in 2023 to grant three to five days of paid menstrual leave with a medical certificate.
- These policies aim to reduce stigma, improve workplace well-being, and acknowledge the health needs of menstruating employees.

**Concerns about Mandatory Leave:**

- Despite its progressive intent, critics argue that mandatory menstrual leave could produce unintended consequences.
- First, it may reinforce biological determinism, portraying women as less capable or less reliable employees. Studies and policy debates warn that such measures could inadvertently strengthen workplace

stereotypes about women’s productivity.

- Second, global experience shows that menstrual leave is often under-utilised. For instance, surveys in Japan found that very few women actually use the leave despite being eligible, often due to workplace stigma or fear of discrimination.
- Third, employers may view mandatory leave as an additional labour cost, potentially discouraging the hiring or promotion of women.

**MANDATORY MENSTRUAL LEAVE DEBATE IN INDIA**  
RECOGNIZING REALITY, AVOIDING NEW INEQUALITIES

THE CASE FOR MENSTRUAL LEAVE	GLOBAL TRENDS	CONCERNS ABOUT MANDATORY LEAVE
<p>Supporters argue it recognizes biological and health realities faced by many women. Conditions like dysmenorrhea, endometriosis, PCOS, and PCOD can cause severe pain and reduced productivity.</p> <ul style="list-style-type: none"> <li>Recognizes health needs</li> <li>Reduces stigma</li> <li>Improves workplace well-being</li> </ul>	<p>Several countries have introduced menstrual leave provisions:</p> <ul style="list-style-type: none"> <li><b>Japan (1947):</b> Menstrual leave allows women to take leave if working during menstruation becomes difficult.</li> <li><b>South Korea:</b> One day of menstrual leave per month under labour law.</li> <li><b>Indonesia:</b> Two days of menstrual leave each cycle under labour regulations.</li> <li><b>Spain (2023):</b> First European nation to grant 3-5 days of paid menstrual leave with a medical certificate.</li> </ul>	<p>Critics argue it could have unintended consequences.</p> <ul style="list-style-type: none"> <li><b>Reinforces Stereotypes</b> May portray women as less capable or reliable, strengthening workplace biases about productivity.</li> <li><b>Under-utilisation</b> Global experience shows low usage. Surveys in Japan found very few women use the leave due to stigma or fear of discrimination.</li> <li><b>Employer Disincentive</b> Mandatory leave may increase labour costs, discouraging the hiring or promotion of women.</li> </ul>

**Structural Challenges in the Indian:**

- India’s labour market poses additional challenges. A significant proportion of women work in the informal sector, where formal leave policies are difficult to enforce.
- Missing workdays may directly translate into loss of wages, making menstrual leave impractical without broader labour protections.

**Way Forward:**

- Instead of a rigid legal mandate, policymakers could adopt flexible and supportive measures, such as:
  - » Optional or voluntary menstrual leave policies
  - » Flexible work arrangements or work-from-home options
  - » Free sanitary products and health facilities at workplaces
  - » Greater awareness of menstrual health

**Conclusion:**

The global experience shows that menstrual leave remains a contested policy tool. While it promotes recognition of women's health needs, mandatory provisions may inadvertently reinforce labour-market discrimination. For India, the challenge lies in designing policies that acknowledge biological realities without creating new barriers to women's participation in the workforce.

## Maternity Leave for Adoptive Mothers

### Context:

Recently, The Supreme Court of India granted 12 weeks of maternity leave to all adoptive mothers, irrespective of the child's age. The ruling struck down the provisions of Maternity Benefit Act, 1961 and social security code, 2020, which currently limits maternity benefits for adoptive mothers only 3 month old Children.

### Background of the Issue:

- The case before the Supreme Court of India arose from concerns over discriminatory provisions governing maternity benefits for adoptive mothers.
- Under Section 5(4) of the Maternity Benefit Act, 1961 and similar provisions in the Code on Social Security, 2020, adoptive mothers were entitled to only 12 weeks of maternity leave if the adopted child was below three months of age. This created an arbitrary classification, excluding adoptive mothers of older children from availing maternity benefits.
- A Public Interest Litigation (PIL) challenged this provision as violative of Articles 14 and 21 of the Constitution, arguing that it discriminated against adoptive mothers and failed to recognise their caregiving responsibilities.
- It also highlighted that adoption procedures under the Juvenile Justice Act, 2015 are often time-consuming, making it difficult to adopt infants below three months, thereby

rendering the benefit ineffective for most adoptive parents.



**Maternity Leave for Adoptive Mothers**  
 Supreme Court Grants 12 Weeks Maternity Leave to Adoptive Mothers, Irrespective of Child's Age

**– Background of the Issue –**

- Previous Rule: Only 12 weeks leave if adopted child was below 3 months old.
- PIL Filed: Challenged as discriminatory under Articles 14 & 21.

**– The Judgment –**  
**Court Strikes Down Age Restriction for Adoptive Mothers**

- Recognises Adoption as Part of Reproductive Autonomy

**Significance of the Ruling –**

- Expanded Maternity Benefits for All Adoptive Mothers
- Encourages Adoption of Older Children
- Calls for Paternity Leave: "Childcare is a Shared Responsibility"

**– A Progressive Step Towards Equality, Dignity & Child Welfare –**

### About the Judgment:

- The Court removed the age-based restriction for adoptive mothers by reading down Section 60(4) of the Code, holding it violative of Articles 14 and 21 of the Constitution.
- It emphasized that maternity benefits are linked to caregiving responsibilities rather than childbirth alone, thereby recognising adoption as part of reproductive autonomy.
- Importantly, the judgment termed maternity protection a "basic human right," essential for economic security and workplace inclusion.
- The Court also highlighted the need for paternity leave, noting that childcare is a shared responsibility and that its absence reinforces gender stereotypes. This interpretation strengthens constitutional values of equality, dignity, and substantive

justice.

**Significance of judgement:**

- The judgment of the Supreme Court of India is significant as it expands maternity benefits to adoptive mothers without age restrictions, promoting substantive equality under Article 14 and dignity under Article 21.
- By recognising motherhood beyond biological childbirth, it adopts a care-centric approach to parental rights. It also strengthens child welfare by encouraging adoption of older children.
- Further, the Court’s push for paternity leave highlights the need for gender-neutral caregiving policies. Overall, the ruling advances gender justice, workplace inclusion, and aligns labour laws with constitutional values and evolving social realities.

**Conclusion:**

The judgment marks a progressive shift from a biological understanding of motherhood to a caregiving-based approach. By striking down the age cap, the Supreme Court has reaffirmed that maternity benefits are rooted in dignity, equality, and child welfare, not merely childbirth.

**World Happiness Report 2026**

**Context:**

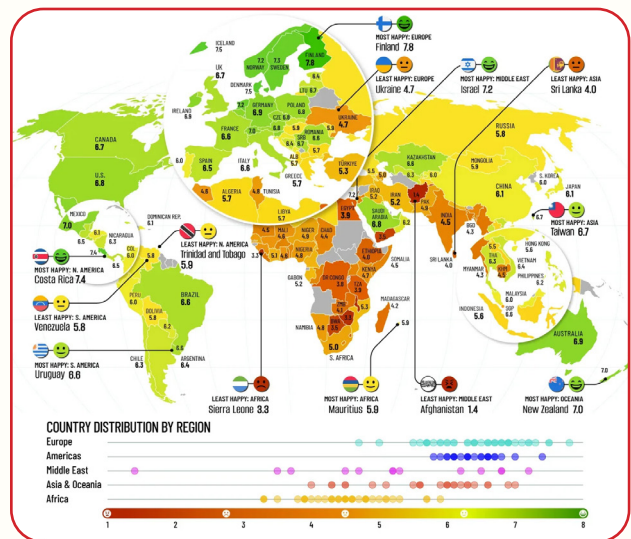
Recently, The World Happiness Report 2026 was released by the Wellbeing Research Centre at the University of Oxford. It is published in partnership with the UN Sustainable Development Solutions Network. The report highlights persistent regional inequalities in happiness levels and draws attention to emerging concerns such as declining youth well-being and the impact of social media.

**Key findings of the World Happiness Report:**

- Finland holds the top spot for the ninth consecutive year. Finland is followed by Iceland, Denmark, Costa Rica, and Sweden.
- India ranks 116th out of 147 countries. Although its ranking has improved, India still trails behind its neighbouring countries, such as Nepal and Pakistan.
- **Least Happy Countries:** Due to conflicts and instability, Afghanistan once again occupies the bottom rung of the list, followed by Sierra Leone and Malawi.
- The theme for 2026 is "Care and Share."

**Emerging Trends:**

- Decline in happiness among youth, especially in Western countries
  - » Excessive social media usage linked with lower well-being
  - » Social trust and community support remain key determinants of happiness



**Significance of the Report:**

- The report highlights that economic growth alone does not determine happiness; social and institutional factors play a crucial role.
  - » Emphasizes well-being as a policy goal
  - » Highlights importance of social trust and governance quality
  - » Helps countries assess development beyond GDP
  - » Provides insights into mental health and

digital behaviour trends

- It aligns with global efforts to promote inclusive and sustainable development.

### About the World Happiness Report:

- The World Happiness Report is an annual publication that measures global happiness using data from the Gallup World Poll and other sources. It ranks countries based on people’s self-reported life satisfaction on the Cantril ladder.
- **Key Indicators Used:**
  - » GDP per capita
  - » Social support
  - » Healthy life expectancy
  - » Freedom to make life choices
  - » Generosity
  - » Perception of corruption
- The report serves as an important tool for policymakers to incorporate well-being into governance.

### Challenges:

- Rising mental health issues, especially among the youth, are a pressing concern. Inequality in access to social support and public services further exacerbates the problem, leaving many without a safety net.
- The over-reliance on digital platforms is also taking a toll on well-being, with social media often fuelling anxiety and loneliness. Moreover, persistent regional disparities in happiness underscore the need for inclusive growth.

### Way Forward:

To address these challenges, it's time to integrate well-being metrics into policymaking, moving beyond traditional GDP-focused approaches. Regulating harmful digital practices and promoting digital literacy can help mitigate the negative impacts of technology. Above all, promoting inclusive growth and good governance is crucial to bridging regional disparities and ensuring that the benefits of development are shared by all.

### Conclusion:

The World Happiness Report 2026 underscores that happiness is shaped not just by income but by social trust, health, and governance. For countries like India, improving well-being requires a multidimensional approach that combines economic progress with social and institutional reforms.

## India’s Progress in Reducing Child Mortality

### Context:

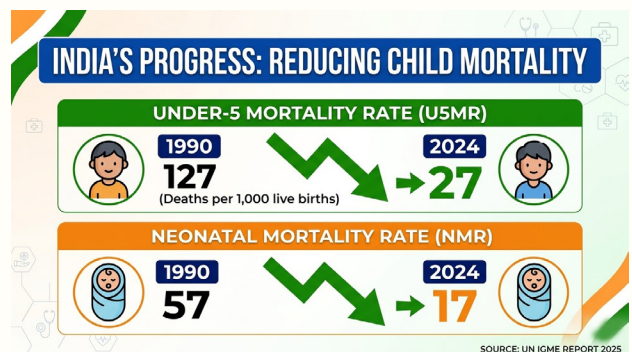
The report titled “Levels and Trends in Child Mortality” (2025) was recently released by the United Nations Inter-agency Group for Child Mortality Estimation. The report highlighted both significant global achievements and emerging concerns regarding child survival.

### About Child mortality:

- Child mortality is the death of children under the age of five, often measured as the rate per 1,000 live births (under-five mortality rate).
- It serves as a vital indicator of a country's living conditions, healthcare quality, and nutrition.

### Key findings:

- Globally, an estimated 4.9 million children died before the age of five in 2024, including 2.3 million newborns, although this marks a significant reduction compared to previous decades.



### India’s Achievements:

- India has made remarkable strides in reducing child mortality over the past three decades. According to the report:
  - » The Under-5 Mortality Rate (U5MR) declined sharply from 127 deaths per 1,000 live births in 1990 to 27 in 2024.
  - » The Neonatal Mortality Rate (NMR) dropped from 57 per 1,000 live births in 1990 to 17 in 2024.
- This progress reflects systematic and sustained improvements in public health infrastructure and service delivery. India has also played a crucial role in reducing child mortality across the South Asian region, contributing significantly to regional gains.

### Several factors have driven this success:

- » Expansion of institutional deliveries, reducing risks during childbirth
- » Increased immunisation coverage, protecting children from preventable diseases
- » Strengthening of primary healthcare systems, especially in rural areas
- » Focused maternal and child health programmes under the Ministry of Health and Family Welfare
- Initiatives such as Janani Suraksha Yojana, Mission Indradhanush, and improvements in neonatal care have helped address both pre-birth and post-birth risks. These efforts demonstrate how policy continuity and targeted interventions can yield long-term health outcomes.

### Global Trends:

- Despite global progress, the report highlights a concerning slowdown in reducing child mortality. While under-five deaths have declined by more than half since 2000, the rate of decline has slowed by over 60% since 2015.
- Several key challenges persist:
  - » Newborn deaths account for nearly half of all under-five deaths
  - » Preventable causes remain dominant,

including infections and birth complications

- » Regional disparities are stark, with Sub-Saharan Africa accounting for 58% of global under-five deaths

### Conclusion:

India's progress in reducing child mortality represents a major public health success story, especially in the context of a global slowdown. The sharp decline in under-five and neonatal mortality rates reflects the impact of sustained policy efforts, improved healthcare delivery, and targeted interventions.

## Excavation at Keeladi and Seven Other Sites

### Context:

Recently, the Archaeological Survey of India (ASI) granted permission to the Tamil Nadu State Department of Archaeology to carry out excavations at Keeladi and seven other sites for a period of one year. This initiative aims to gain a better understanding of ancient South Indian civilization and its technological, cultural, and trade linkages with other parts of the world.

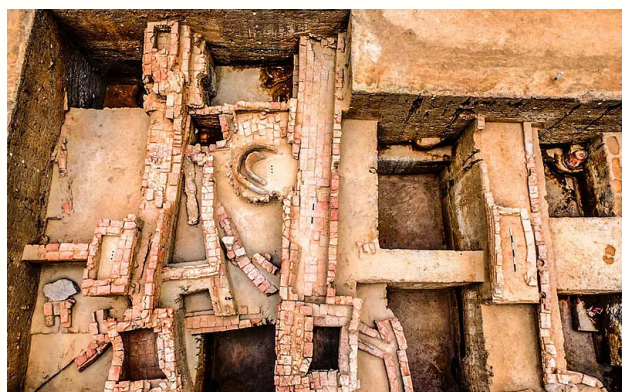
### About the Excavation Sites:

- This excavation drive is among the largest archaeological efforts in recent decades, with a total of 13 sites in Tamil Nadu approved for excavation. Apart from Keeladi, the major sites include:
  - » Nagapattinam – an ancient maritime trade center.
  - » Manikkollai – associated with Sangam-era glass bead production.
  - » Vellalur – where Roman coins have been discovered.
  - » Karivalamvandanallur – evidence of Roman trade connections.
  - » Adichanur and Telunganur – containing Iron Age remains.
  - » Pattinamruthur – known for conch ornament production.

- Together, these sites present a comprehensive picture of various cultural phases such as the Iron Age, the Sangam Age, and early historic trade networks, highlighting the rich and diverse heritage of the region.

### About the Keeladi Excavation:

- Located along the Vaigai River near Madurai, Keeladi is a highly significant archaeological site of the Sangam Age civilization. Excavations ongoing since 2015 have revealed clear evidence of a well-developed urban settlement.
- These findings include brick-built structures, well-planned drainage systems, and evidence of industrial activities such as bead-making and dyeing. Additionally, evidence of early literacy through Tamil-Brahmi script and strong trade links with the Roman world has been discovered. These findings indicate a transition from Megalithic (Iron Age) burial culture to an organized urban society.
- This demonstrates that urbanization in South India developed independently and progressed parallel to the civilizations of the Ganga Valley. Thus, the discoveries at Keeladi strengthen the idea of multi-centric development of civilization in India.



### Significance:

- These new excavations are playing a crucial role in redefining the understanding of ancient Indian history. They challenge the

traditional North-centric view of urbanization and reinforce the concept of indigenous and regionally diverse development.

- At the same time, the requirement of ASI approval for state-led excavations, along with concerns raised by leaders like M. K. Stalin, highlights underlying tensions in Centre–State relations in the field of archaeology.

### About the Archaeological Survey of India:

- The Archaeological Survey of India is the premier organization responsible for archaeological research and conservation of cultural heritage in India. It was established in 1861 by Alexander Cunningham and functions under the Ministry of Culture.
- It plays a vital role in excavations, preservation of ancient monuments, and the study of inscriptions and coins. It operates under the Ancient Monuments and Archaeological Sites and Remains Act, 1958, which provides legal protection to heritage sites.
- Additionally, ASI regulates and grants permission for excavations across the country to ensure scientific standards and historical accuracy.

### Conclusion:

The resumption of excavations at Keeladi and other sites marks a significant step in understanding India's ancient past. These discoveries not only enrich knowledge of South Indian civilization but also challenge traditional historical narratives by highlighting independent and parallel urban development.

## Passive Euthanasia Framework: A Question of Dignity, Constitutional Rights and Humane Decision-Making

### Context:

Recently, Harish Rana passed away at AIIMS after the Supreme Court allowed him to withdraw his medical treatment. This landmark judgment was delivered in the case of an individual who had been in a Persistent Vegetative State for several years. While authorizing the withdrawal of life-sustaining treatment, the Court clarified that the Indian Constitution is not limited merely to the preservation of life, but also encompasses the right to end one's life with human dignity. This verdict brings renewed focus to the relevance of the passive euthanasia framework in India. This subject is not merely a matter of medical science; rather, it involves a complex interplay of law, ethics, constitutional rights, personal autonomy, and societal values.

### Concept of Euthanasia:

- Euthanasia generally means allowing death in situations where a patient suffers from an incurable illness, extreme pain, or an irreversible medical condition.
- It is mainly understood in two categories:
  - » **Passive Euthanasia:** In this case, medical support that keeps the patient alive—such as ventilators, artificial nutrition, or other life-sustaining systems—is withdrawn. As a result, death occurs through the natural process.
  - » **Active Euthanasia:** In this case, drugs or injections are directly administered to

ensure the patient's death.

- The current legal position in India is that passive euthanasia is allowed under limited circumstances, while active euthanasia remains illegal.

### Know about passive euthanasia

In this, a patient's treatment or life support (ventilator, feeding tube, medicines) is stopped.



### Development of Euthanasia in Indian Judiciary:

In India, the issue of euthanasia has largely evolved through judicial decisions.

- **Gian Kaur Case (1996):** In this judgment, the Supreme Court clarified that Article 21 of the Constitution does not include the "Right to Die." The Court emphasized the protection of life as a priority. However, it also indicated that the idea of death with dignity cannot be completely rejected in certain situations.
- **Aruna Shanbaug Case (2011):** This case

became a turning point in India’s judicial history. The Supreme Court accepted for the first time that life-sustaining treatment may be withdrawn in certain circumstances if a person remains in an irreversible medical condition for a long time. At that time, the Court required approval from the High Court for such decisions.

- **Common Cause vs Union of India (2018):** In 2018, a Constitution Bench of the Supreme Court delivered a landmark judgment. Key highlights of the decision:
  - » Right to Die with Dignity recognized under Article 21.
  - » Passive euthanasia legally recognized.
  - » Living Will recognized as valid.
  - » This judgment made the interpretation of the Right to Life more humane and comprehensive in India.

**Concept of Living Will:**

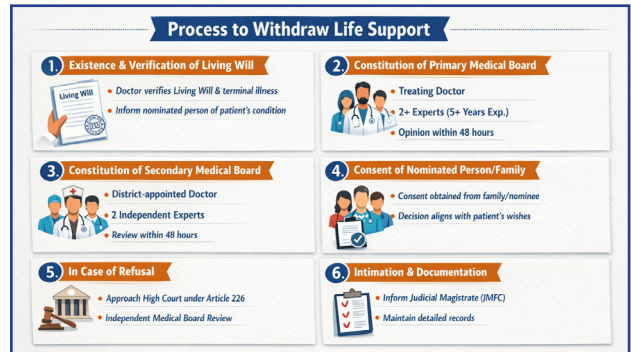
- A Living Will is a document in which a person can state in advance that if he or she reaches a serious medical condition in the future and is unable to make decisions, certain medical instructions should be followed.
- For example, a person may specify:
  - » Whether they should be kept on artificial life-support systems, or
- Whether natural death should be allowed to occur.
- This system strengthens the principles of personal liberty and self-determination.

**Procedure of Passive Euthanasia Framework:**

- The Supreme Court has prescribed a detailed procedure to ensure transparency and safety.
  - » **Medical Evaluation:** A team of expert doctors examines the patient and determines whether the medical condition is irreversible.
  - » **Independent Medical Board:** Another independent medical board confirms the evaluation to prevent any error or haste.
  - » **Family Consent:** If the patient has not

created a living will, the consent of the family becomes important.

- » **Administrative Verification:** In some cases, administrative authorities are present to ensure that the decision remains legally valid.



**Need to Simplify the Procedure:**

- Several practical difficulties were observed while implementing the 2018 guidelines. Hospitals and families found the process too complicated. Therefore, the Supreme Court later simplified several procedural formalities to make the system more practical and accessible, ensuring that families do not face unnecessary legal hurdles during critical situations.

**Importance of the Recent Judgment:**

- The recent decision of the Supreme Court is significant for several reasons.
  - » **From Principle to Practice:** Earlier, it remained largely a legal principle, but now it has been applied in a real case.
  - » **Emphasis on Human Dignity:** The Court clarified that life does not merely mean biological existence. If life continues only through machines and consciousness has ended, forcing such existence may not align with human dignity.
  - » **Recognition of Family Suffering:** Families often experience years of emotional and financial stress in such cases. The Court acknowledged this human dimension.

**Ethical Debate:**

The issue of euthanasia involves two major perspectives in society.

- **Arguments Supporting Euthanasia**
  - » Individuals should have freedom to decide about their own life.
  - » Artificially prolonging life in extreme suffering may be inhumane.
  - » Medical resources should be used rationally.
- **Arguments Opposing Euthanasia**
  - » There is a possibility of misuse.
  - » Families may make decisions due to financial pressure.
  - » Many religious beliefs consider life a divine gift.

### Global Perspective:

- Different countries follow different policies on euthanasia.
- Countries such as the Netherlands, Belgium, and Canada allow active euthanasia under legal conditions. India has adopted a balanced approach, where only passive

euthanasia is permitted under limited circumstances.

### Policy Challenges in India:

- Several challenges remain in effectively implementing euthanasia-related decisions.
  - » Absence of a clear parliamentary law.
  - » Lack of palliative care facilities.
  - » Weak medical infrastructure in rural areas.
  - » Limited public awareness.

### Conclusion:

Judicial decisions related to passive euthanasia reflect the humanistic interpretation of the Indian Constitution. In modern society, the Right to Life must be understood not merely as survival but as a life lived with dignity, freedom, and human respect. In the future, Parliament may enact clear legislation to create a more transparent and balanced framework in this area.




# UPSC (IAS)

## GEOGRAPHY



## 8<sup>th</sup> APR 2026

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**Evening Batch : 05:30 PM**





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# Short Issues

## India Notifies Cloud, Data Centre and AI Ethics Standards

### Context:

Recently, India has, for the first time, notified standards for cloud computing, data centre performance, and ethical deployment of Artificial Intelligence (AI). The standards were issued under the Bureau of Indian Standards (BIS) Rules, 2018 to establish a regulatory and technical framework for India's rapidly expanding digital ecosystem.

### Key Features of the New Standards:

- The notified standards provide a structured framework for digital infrastructure governance. They introduce common definitions and technical benchmarks for cloud systems, ensuring interoperability and quality across providers.
- They also set performance metrics and efficiency standards for data centres, including operational reliability and cooling efficiency.
- Another major component is the ethical framework for AI development and deployment. The standards embed principles related to transparency, accountability and responsible design of AI systems, reflecting growing global concerns regarding algorithmic bias, privacy and misuse of AI technologies.

### Significance for India's Digital Economy:

- The move is significant as India's digital infrastructure, including AI-ready data centres and cloud services is witnessing rapid expansion. Standardisation will improve quality control, interoperability and investor confidence, particularly as large-scale investments are expected in the AI infrastructure sector.
- The standards also align India with international frameworks developed by the International Organization for Standardization (ISO) and the International

Electrotechnical Commission (IEC), enabling compatibility with global technology ecosystems.

- Furthermore, by embedding ethical safeguards into AI systems, the initiative supports responsible innovation and data governance, complementing broader regulatory frameworks such as the Digital Personal Data Protection Act, 2023.

### Challenges:

- Despite their importance, the standards are currently voluntary, which may limit their immediate enforcement.
- Effective implementation will require industry adoption, regulatory oversight, and periodic updates to keep pace with rapidly evolving technologies.

### Way forward:

India must strengthen AI governance, cybersecurity frameworks, and international cooperation while encouraging innovation in emerging technologies. Such measures will ensure that India's digital transformation remains secure, ethical, and globally competitive.

## Maharashtra's New Farm Loan Waiver

### Context:

Recently, The Government of Maharashtra has announced a new farm loan waiver scheme worth around Rs.35,000 crore, aimed at providing relief to distressed farmers. The scheme is expected to benefit nearly 30 lakh farmers, including incentives for those who regularly repaid loans. The waiver covers crop loans and includes an additional Rs.50,000 incentive for farmers who maintained good repayment behaviour.

### Rationale behind Farm Loan Waivers:

- Farm loan waivers are generally introduced to address agrarian distress arising from

crop failures, volatile prices, climate shocks, and rising input costs.

- Key objectives include:
  - » Reducing farmers' debt burden and enabling them to restart agricultural activities.
  - » Providing immediate relief to distressed farmers.
  - » Boosting rural consumption and economic activity.
  - » In Maharashtra, farmers cultivating crops such as onion, grapes and pomegranate have faced losses due to price crashes and unseasonal weather, prompting calls for government intervention.



### Concerns over Credit Culture:

- **Weakening Repayment Discipline:** The Reserve Bank of India (RBI) and several expert committees have repeatedly warned that loan waivers can weaken credit discipline. Borrowers may delay or stop repaying loans in the expectation that future waivers will be announced.
- **Moral Hazard:** Frequent waivers create a moral hazard where strategic defaults increase, affecting the health of the banking system and raising agricultural non-performing assets (NPAs).
- **Reduced Bank Lending:** Banks may become reluctant to provide fresh credit to farmers, especially small borrowers, as waivers disrupt the repayment cycle and increase uncertainty in agricultural lending.

### Limited Benefits for Farmers:

- Despite large fiscal outlays, the effectiveness of loan waivers has been debated.
- **Key issues include:**

- » **Limited coverage:** Studies indicate that only about 50% of eligible farmers benefit from waiver schemes.
- » **Exclusion of informal borrowers:** Many small farmers rely on moneylenders rather than banks, and therefore remain outside the scope of waivers.
- » **Temporary relief:** Loan waivers address immediate debt stress but do not solve structural problems such as low farm incomes and price volatility.
- Over the past 35 years, governments in India have spent more than Rs. 3 lakh crore on loan waivers, yet agrarian distress continues in many regions.

### Fiscal Implications:

- Loan waivers impose a significant burden on state finances. The fiscal cost is usually spread over several years through staggered payments to banks, which may constrain spending on agricultural infrastructure, irrigation, and rural development.

### Way Forward:

- Experts suggest structural reforms instead of repeated loan waivers:
  - » Strengthening crop insurance and risk management.
  - » Expanding institutional credit through Kisan Credit Cards (KCC).
  - » Improving minimum support price (MSP) and market access.
  - » Promoting income support schemes and irrigation investments.

### Conclusion:

While Maharashtra's farm loan waiver aims to provide immediate relief to distressed farmers, repeated waivers risk weakening credit culture, straining state finances, and limiting long-term agricultural reforms. Sustainable solutions require addressing the structural causes of agrarian distress, including low farm incomes, climate risks, and inadequate rural infrastructure.

## Sri Lankan Supreme Court Judge Moves the Karnataka High Court Against Google

### Context:

Recently, a sitting judge of the Supreme Court of Sri Lanka, Justice A. H. M. Dilip Nawaz, approached the Karnataka High Court seeking the removal of allegedly defamatory articles appearing in Google search results under the “Right to be Forgotten” provision. The case is significant because the petitioner is not an Indian citizen, yet he invoked constitutional protections under Indian law. It highlights emerging legal challenges in the era of the borderless internet.

### Background of the Case:

- Justice Nawaz filed a petition requesting the removal of certain online articles published by Sri Lankan news portals in 2015 and 2020, which accused him of corruption and misconduct. Although the related criminal case was later quashed by the Supreme Court of Sri Lanka, the reports continue to appear in search results and allegedly damage his reputation internationally.
- The Karnataka High Court issued notices to the Ministry of Electronics and Information Technology (MeitY), Google India, and the concerned news portals to respond to the allegations.
- Justice Nawaz argues that the continued circulation of these articles subjects him to a “perpetual media trial” and violates his right to dignity and privacy.

### About “Right to be Forgotten”:

- The petition relies on the concept of the Right to be Forgotten, which allows individuals to request the removal of outdated, irrelevant, or false personal information from search engines.
- The principle originated in European data protection laws and aims to ensure that individuals are not permanently judged by

past events, especially when allegations have been disproved.

- In India, this right is not explicitly mentioned in the Constitution, but courts have increasingly recognised it as part of the Right to Privacy under Article 21.

### Why Approach the Karnataka High Court?

- Application of Article 21:** Article 21 of the Indian Constitution guarantees the right to life and personal liberty, which courts have interpreted to include privacy and reputation. Importantly, these protections apply to all persons, including foreigners, enabling Justice Nawaz to seek legal relief in India.
- Territorial Jurisdiction:** Google’s Indian headquarters is located in Bengaluru. Because the search engine displaying the disputed links operates from there, the petitioner argues that the Karnataka High Court has territorial jurisdiction over the matter.
- Ethical Constraints in Sri Lanka:** As a sitting Supreme Court judge in Sri Lanka, filing a defamation case in his own country could violate the principle of natural justice—“nemo judex in causa sua” (no one should be a judge in their own cause).

### Conclusion:

The case involving Justice Nawaz before the Karnataka High Court represents a significant intersection of constitutional law, digital privacy, and international jurisdiction. It highlights the challenges courts face in regulating borderless digital platforms while balancing privacy, reputation, and free speech. The outcome could influence India’s evolving jurisprudence on online defamation and the Right to be Forgotten, with broader implications for global digital governance.

**Jal Jeevan Mission Extension till 2028**

## Context:

Recently, the Union Cabinet of India approved the extension of the Jal Jeevan Mission until December 2028, with the total budget allocation for the programme increased to about Rs.8.70 lakh crore. The revised mission is referred to as JJM 2.0, which will focus not only on building infrastructure but also on sustainable service delivery and long-term management of rural water supply systems.

## Key Features of the Extension:

- The extended mission includes several structural reforms to improve efficiency and transparency.
  - » **Shift from Infrastructure to Service Delivery:** The new phase emphasises reliable and sustainable water supply rather than only laying pipelines.
  - » **Digital Monitoring Framework:** A national digital platform called “Sujalam Bharat” will map the entire drinking water network from water sources to household taps, improving transparency and accountability.

## Community Participation:

- Village Water and Sanitation Committees (VWSCs) will play a greater role in managing water supply systems.
- Initiatives such as “Jal Arpan” and “Jal Utsav” aim to strengthen community ownership of water infrastructure.

## About Jal Jeevan Mission:


- The Jal Jeevan Mission (JJM) was launched in August 2019 by the Government of India under the Ministry of Jal Shakti. The mission aims to provide safe and adequate drinking water through Functional Household Tap Connections (FHTCs) to every rural household. The scheme also seeks to ensure a supply of 55 litres per capita per day (LPCD) of potable water.
- When the mission was launched, only about 3.23 crore rural households (around 17%) had tap water connections. As of

March 2026, the Jal Jeevan Mission has dramatically increased rural tap water coverage to over 15.80 crore households (approximately 81.61%).

- The mission is also associated with the vision of “Har Ghar Jal”, which aims to improve public health, sanitation, and the quality of life in rural areas, particularly for women who traditionally bear the burden of fetching water.

### Extension and Restructuring of Jal Jeevan Mission

- ▶ Cabinet approves extension of Jal Jeevan Mission (JJM) period up to **December 2028** with enhanced outlay and restructured implementation focusing on **structural reforms** in rural drinking water supply sector under **JJM 2.0**
- ▶ Cabinet approves enhancement of **total outlay to Rs. 8.69 lakh crore** with total central assistance of **Rs. 3.59 lakh crore** enhancing from Rs. 2.08 lakh crore approved in 2019-20
- ▶ **Restructuring and reorientation** of JJM from infrastructure creation to a **service delivery** supported by drinking water governance and institutional ecosystem for **sustainable rural piped potable water supply**
- ▶ A uniform national digital framework “**Sujalam Bharat**” to **digitally map** the complete drinking water supply system from **source to tap**
- ▶ **Jal Jeevan Mission 2.0** to provide tap water connections to all the **19.36 Crore rural households** across the country by **December 2028**



## Significance for Rural Development:

- The extension of the Jal Jeevan Mission is important for several reasons:
  - » **Improved Public Health:** Access to clean drinking water reduces water-borne diseases.
  - » **Women Empowerment:** It reduces the time women spend collecting water.
  - » **Rural Development:** Reliable water supply supports sanitation, agriculture, and livelihoods.
  - » **Water Security:** Long-term management systems help ensure sustainable water resources.

## Conclusion:

The extension of the Jal Jeevan Mission until

2028 represents a major step toward ensuring universal access to safe drinking water in rural India. By combining infrastructure development, digital monitoring, and community participation, the restructured programme aims to strengthen water governance and enhance rural well-being.

## Supreme Court verdict of OBC creamy layer

### Context:

The Supreme Court of India recently clarified that OBC creamy layer status cannot be determined solely on the basis of parental income. The ruling came in a batch of appeals filed by the Union government concerning candidates who were denied OBC reservation benefits in the Civil Services Examination after authorities counted their parents' salary income to classify them as creamy layer.

### Background:

- The creamy layer concept was introduced by the Supreme Court in *Indra Sawhney v. Union of India* (1992) to exclude socially advanced sections among OBCs from reservation benefits.
- **Key features:**
  - » OBCs receive 27% reservation in central government jobs and educational institutions.
  - » Advanced sections within OBCs are excluded as “creamy layer.”
  - » The income ceiling for creamy layer is currently Rs. 8 lakh per year.
- The government issued an Office Memorandum (1993) outlining the criteria for determining creamy layer, including occupation, social status, and income.

### Issue before the Court:

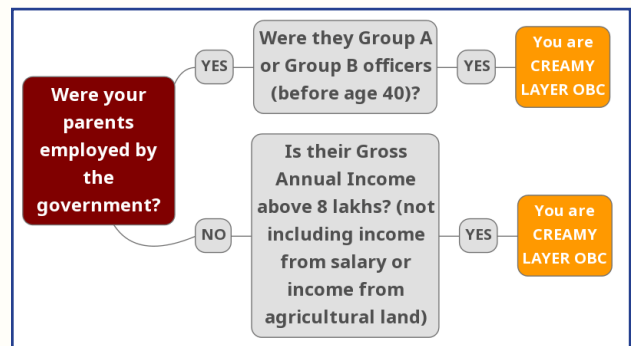
- The dispute arose because some UPSC candidates from OBC communities were denied reservation benefits after authorities

counted the salary income of parents working in Public Sector Undertakings (PSUs), banks, or private organisations while applying the creamy layer test.

- Several High Courts (Delhi, Madras, and Kerala) ruled in favour of the candidates. The Union government challenged these decisions in the Supreme Court.

### Key Observations of the Supreme Court:

- The Supreme Court clarified that parental income or salary alone cannot determine whether an OBC candidate belongs to the creamy layer.
- Authorities must consider multiple factors while making this determination, including the status of the parents in the organisational hierarchy, the nature of their occupation, and the category of posts they hold.
- The Court emphasised that the policy of excluding the creamy layer is primarily based on social status rather than purely on income levels. It noted that advancement within the service hierarchy reflects social mobility and progress, which cannot be accurately judged by income alone, since salary levels may fluctuate over time.



### Significance of the Judgment:

- **Wider Access to Reservation:** The ruling may expand eligibility for OBC reservation, especially for candidates whose parents work in PSUs or the private sector.
- **Clarification of Reservation Rules:** It resolves a long-standing confusion regarding the

income/wealth test used to determine creamy layer status.

- **Strengthening Social Justice:** The judgment reinforces the idea that reservation addresses social and educational backwardness, not merely economic disadvantage.

### Conclusion:

The Supreme Court's ruling that parental income alone cannot determine creamy layer status reaffirms the principle that reservation policy is fundamentally based on social status and historical disadvantage. By emphasising a status-based approach, the judgment seeks to ensure that affirmative action benefits reach genuinely backward sections within OBC communities, while preventing arbitrary exclusion.

## SC Examines Scope of 'Personal Data' under DPDP Act, 2023

### Context:

Recently, The Supreme Court of India has agreed to examine petitions challenging provisions of the Digital Personal Data Protection (DPDP) Act, 2023 and related rules. The case raises an important constitutional question: what exactly constitutes "personal data" or "personal information" under India's data protection framework. The Court observed that the issue involves balancing two competing fundamental rights, the Right to Privacy and the Right to Information (RTI) and indicated that it may have to clarify the scope of "personal information."

### Background:

- **Digital Personal Data Protection Act, 2023:** The DPDP Act provides India's first comprehensive framework for the protection and processing of personal data.
  - » It regulates how digital personal data is collected, stored and processed.
  - » It creates obligations for Data Fiduciaries (entities processing data).
  - » It establishes a Data Protection Board of

India for enforcement.

- » It grants rights to individuals (Data Principals) over their personal data.
- » Under the Act, personal data refers to any data about an identifiable individual.
- Examples include:
  - » Name
  - » Mobile number
  - » Address
  - » Aadhaar number
  - » Location data
  - » Online identifiers

### Why is the Issue before the Supreme Court?

- **Amendment to the RTI Act**
  - » The Digital Personal Data Protection (DPDP) Act, 2023 amended Section 8(1)(j) of the RTI Act, expanding exemptions related to personal information.
  - » Critics argue that:
    - Authorities may deny RTI requests by labeling information as "personal data."
    - This may weaken transparency and accountability in governance.
    - Petitioners include journalists, civil society groups, and transparency activists, who argue that the amendment dilutes the RTI framework.
- **Conflict between Two Fundamental Rights:**
  - » The case highlights a constitutional conflict between:
    - **Right to Privacy:** Recognised as a fundamental right in the 2017 Justice K.S. Puttaswamy judgment.
    - **Right to Information:** Derived from Article 19(1)(a) (Freedom of Speech and Expression).
  - » The Supreme Court noted the need to balance these competing interests and clarify the meaning of personal data.

### Key Legal Issues before the Court:

- **What Constitutes "Personal Data"?**
  - » The Court may clarify:
    - Whether information about public

officials performing public duties qualifies as personal data.

- Whether such information can be withheld on privacy grounds.

#### ▪ **Scope of Public Interest Exception**

- » Earlier, RTI allowed disclosure of personal information if larger public interest existed.
- » Critics argue the DPDP amendment weakens this balancing principle.

### Constitutional Principles Involved:

#### ▪ **Proportionality Test**

- » Restrictions on fundamental rights must satisfy:
  - Legitimate aim
  - Necessity
  - Proportionality
  - Procedural safeguards
- » The Court may apply this doctrine to evaluate the DPDP provisions.

#### ▪ **Privacy Jurisprudence**

- » Key precedents include:
  - **Puttaswamy v. Union of India (2017):** Recognised privacy as a fundamental right.
  - **CPIO v. Subhash Chandra Agarwal (2019):** Balanced privacy with RTI transparency.
- » The present case may refine this balance in the digital era.

### Conclusion:

The Supreme Court's interpretation of "personal data" under the DPDP law will shape the balance between privacy and transparency in India. The ruling could become a landmark judgment in India's data protection and information governance framework.

## Transgender Persons (Protection of Rights) Amendment Bill, 2026

### Context:

The Transgender Persons (Protection of Rights)

Amendment Bill, 2026, was recently passed in Parliament. This Bill provides for significant amendments to the Transgender Persons (Protection of Rights) Act, 2019—most notably, the removal of the right to self-identification and the inclusion of stringent criminal provisions.

### Key Provisions of the Bill:

#### ▪ **Narrow Definition of Transgender Person:**

The bill revises the definition of transgender persons. It mainly includes:

- » Persons with socio-cultural identities such as hijra, kinner, aravani and jogta.
- » Persons with intersex variations or congenital sex-characteristic differences.
- » It excludes persons identifying as transgender solely on the basis of self-perceived identity or sexual orientation.

#### ▪ **Removal of Self-Identification:**

- » The earlier law allowed individuals to identify their gender based on self-perceived gender identity.
- » The amendment removes this provision.
- » Now, medical boards will examine and certify transgender identity before the District Magistrate issues a certificate.

#### ▪ **Medical Board for Certification:**

- » A medical board headed by a Chief Medical Officer will assess applications for gender certification.
- » The District Magistrate can issue the certificate only after the board's recommendation.

#### ▪ **Stronger Criminal Punishments:** The bill introduces strict penalties for crimes such as:

- » Kidnapping persons to force a transgender identity
- » Forced mutilation, castration or surgery
- » Forcing children into a transgender identity
- » Punishment may extend to life imprisonment in serious cases involving children.

### Background:

- **NALSA Judgment (2014):** The Supreme Court in *NALSA v. Union of India* (2014):
  - » Recognised transgender persons as the third gender.
  - » Recognised the right to self-identification of gender as part of Article 21 (Right to Life and Dignity).
- **About Transgender Persons (Protection of Rights) Act, 2019:**
  - » The Transgender Persons (Protection of Rights) Act, 2019 is the first comprehensive law to protect the rights of transgender persons in India. Its objective is to ensure legal recognition, non-discrimination and welfare of transgender individuals.

### Key Features:

- **Definition of Transgender Person:**
  - » A person whose gender does not match the gender assigned at birth.
  - » Includes trans-men, trans-women, intersex persons, gender-queer persons and socio-cultural identities such as hijra and kinnar.
- **Certificate of Identity:**
  - » A transgender person can apply to the District Magistrate for a certificate of identity.
  - » The certificate allows updating of name and gender in official documents.
- **National Council for Transgender Persons:**
  - » Advises the government on policies and welfare programmes for transgender persons.
- **Offences and Penalties:**
  - » Acts such as abuse, forced labour and denial of access to public places are punishable with imprisonment ranging from 6 months to 2 years, along with a fine.

### Key Concerns:

- Removal of self-identification may contradict the NALSA judgment.
- The introduction of medical certification may limit personal autonomy.

- Activists argue that the law may exclude many transgender persons from legal protection.

### Way Forward:

The law should be aligned with constitutional rights and the principles laid down by the Supreme Court, particularly regarding dignity, equality, and personal autonomy. There is also a need for wider consultation with the transgender community, civil society organisations, and subject experts to ensure that the legislation reflects the concerns and lived realities of transgender persons. In addition, the government should strengthen welfare schemes and expand access to education, healthcare, and employment opportunities in order to promote the social and economic inclusion of transgender individuals.

## Guillotine Process in Lok Sabha

### Context:

The Lok Sabha recently passed the Demands for Grants for 2026–27, approving an expenditure of over Rs.53 lakh crore, by applying the guillotine procedure. This meant that the remaining demands of various Ministries were approved without detailed discussion, except for a few Ministries such as Agriculture and Railways.

### About Demands for Grants and Guillotine:

- **Demands for Grants:**
  - » Under Article 113 of the Constitution, each Ministry presents its Demands for Grants, which are essentially estimates of expenditure required for the upcoming financial year.
  - » These include both revenue and capital expenditure and must be approved by the Lok Sabha before money can be withdrawn from the Consolidated Fund of India.
  - » Only the Lok Sabha has the power to

vote on these demands

- » Each Ministry's demand is ideally discussed and voted upon separately
- » Members can move cut motions to reduce or oppose expenditure
- **About Guillotine Procedure:** Due to time constraints, it is often not possible to discuss all demands. In such cases, the Speaker applies the guillotine, whereby:
  - » All remaining undiscussed demands are put to vote together
  - » They are passed without further debate
  - » This usually happens on the last day allocated for budget discussions to ensure timely passage of the budget and continuation of government operations.

### Rationale behind the Guillotine:

- **Time Constraints:** India's Union Budget involves dozens of Ministries and departments, making it practically impossible to discuss every demand in detail within limited parliamentary time.
- **Ensuring Continuity of Governance:** Timely passage of financial proposals is essential for the government to function. Without approval of expenditure, the State cannot legally spend money. The guillotine ensures that financial paralysis is avoided.
- **Structured Parliamentary Process:** Before the guillotine is applied:
  - » Demands are examined by Departmentally Related Standing Committees
  - » Selected key Ministries are discussed in detail in the House
- Thus, some level of scrutiny does take place, even if not all demands are debated in Parliament.

### Concerns and Implications:

- **Erosion of Legislative Scrutiny:** The most significant concern is that a large portion of the budget, often 70–80% of demands may be passed without discussion. This limits the ability of MPs to:
  - » Question government spending

- » Highlight inefficiencies or misallocation
- » Represent public concerns

- **Weakening of Accountability:** Parliament's primary role in financial matters is to act as a check on executive power. When demands are passed without debate, this oversight function is weakened.
- **Marginalisation of Opposition:** The guillotine reduces opportunities for the Opposition to raise issues, move cut motions, and hold the government accountable, thereby affecting deliberative democracy.
- **Over-reliance on Committees:** While Standing Committees examine demands in detail, their recommendations are not binding. The absence of subsequent debate in Parliament reduces the impact of committee scrutiny.
- **Procedural vs Substantive Democracy:** The guillotine ensures procedural completion of the budget but may compromise substantive democratic engagement, where policies are critically debated and refined.

## SC Status Limited to Hindus, Sikhs & Buddhists

### Context:

Recently, the Supreme Court of India reaffirmed that Scheduled Caste (SC) status is restricted to Hindus, Sikhs, and Buddhists, and that conversion to other religions leads to the loss of SC status. This ruling has revived debates on caste, religion, constitutional equality, and affirmative action policies.

### Background:

- The case arose when a person who had converted to Christianity sought protection under the SC/ST (Prevention of Atrocities) Act. The Court ruled that once an individual professes a religion other than the three recognised ones, they can no longer be treated as a Scheduled Caste member, and therefore cannot claim associated legal protections. The Court emphasized that the loss of status is instantaneous upon


conversion, irrespective of birth identity.

- SC status is governed by the Constitution (Scheduled Castes) Order, 1950. Originally limited to Hindus, later extended to:
  - » Sikhs (1956 amendment)
  - » Buddhists (1990 amendment)
- The rationale: caste-based discrimination is historically rooted in these religions.

### Key Highlights of the Supreme Court Judgment:

- Only persons professing Hinduism, Sikhism or Buddhism can be recognised as SC.
- Conversion to religions like Christianity or Islam leads to “immediate and complete loss” of SC status.
- A converted individual cannot claim benefits under the SC/ST (Prevention of Atrocities) Act.
- The Court upheld an Andhra Pradesh High Court ruling in a case involving a Christian pastor.

- **Caste linked to social context:** SC category is tied to historical caste oppression within certain religious frameworks.
- **Policy intent of reservations:** Reservations aim to address social disabilities arising from caste hierarchy, not purely economic backwardness.
- **Religious transformation argument:** Conversion is assumed to break caste-based social structures, thus removing the basis for SC benefits.
- **Issues with decision:**
  - » However, the ruling raises important constitutional and social questions. Critics argue that caste-based discrimination often persists even after conversion, particularly among Dalit Christians and Muslims.
  - » This brings into focus issues of substantive equality under Article 14 and whether affirmative action should be religion-neutral and based solely on social disadvantage.
  - » At the same time, the judgment has implications for freedom of religion under Article 25, as individuals may feel constrained in converting due to the loss of reservation benefits.



**SUPREME COURT OF INDIA**

**SUPREME COURT RULES PERSONS RE CONVERTING TO HINDU, SIKHISM, OR BUDDHISM CAN REGAIN SCHEDULED CASTE STATUS**

Case Title: Chinthada Anand vs. State of Andhra Pradesh & Ors.

CONVERSION OUTSIDE = LOSS OF SC STATUS | RECONVERSION = ELIGIBILITY TO RECLAIM

**1. PROOF OF ORIGIN:**

- Individual must provide evidence that they were originally born into a notified Scheduled Caste (SC).


**2. GENUINE RECONVERSION:**

- Sincere and complete renunciation of the other religion and adoption of the practices & rituals of the original faith.

**3. COMMUNITY ACCEPTANCE:**

- Valid evidence that the original caste community has fully accepted and integrated the individual back into its

**LEGAL BASIS:**  
Constitution (Scheduled Castes) Order, 1950 (Clause 3)



The petitioner remained a practicing Christian (pastor) and was not re-accepted, thus denied SC protections.

### Reasoning of the Court:

### Way Forward:

Moving forward involves several key steps: reassessing caste discrimination across religions empirically, adopting religion-neutral criteria for social disadvantage, reviewing the 1950 Presidential Order in Parliament, and striking a balance between social justice (Articles 15(4), 16(4)) and religious freedom (Article 25) to ensure equitable policies

### Conclusion:

The judgment reinforces the existing constitutional framework but also highlights a deeper dilemma in Indian polity: whether caste-based affirmative action should remain tied to religion or evolve into a broader, religion-neutral mechanism of social justice.

## Chhattisgarh Freedom of Religion Bill 2026

### Context:

Recently, Chhattisgarh Legislative Assembly has passed the Chhattisgarh Dharm Swatantraya Vidheyak, 2026, replacing the 1968 law, with stricter provisions to curb illegal religious conversions. The Bill introduces stringent penalties, including life imprisonment for mass conversions, and mandates prior declaration and verification of conversions.

### About the Bill:

- **Objective:** The Bill aims to prevent religious conversions carried out through force, inducement, fraud, or misrepresentation, while regulating the process of voluntary conversions.

### Key Features of the Bill:

- **Regulation of Conversion:**
  - » Individuals intending to convert must submit a declaration to the District Magistrate
  - » Authorities will publicly display details (name, current religion, proposed religion)
  - » Objections can be filed, followed by an official inquiry
- **Marriage-related Provisions:**
  - » Conversion solely for marriage is considered invalid
  - » Declaration required before interfaith marriage
  - » Authorities empowered to investigate such cases
- **Financial and Institutional Controls:**
  - » Restriction on funds used for illegal conversions
  - » Government can withdraw grants or assistance in case of violations

### Punishments and Legal Provisions:

- All offences are cognisable and non-bailable "Mass conversion" (2 or more persons):
  - » Minimum 10 years imprisonment

- » May extend to life imprisonment
- » Fine of at least Rs. 25 lakh
- Conversion of vulnerable groups (minor, woman, SC/ST):
  - » 10–20 years imprisonment
  - » Fine of at least Rs. 10 lakh
  - » Compensation up to Rs. 10 lakh for victims
  - » Cases to be tried in special courts within a fixed timeframe

### Rationale behind the Law:

- Existing 1968 law considered inadequate in present context
- Rising concerns over forced and fraudulent conversions
- Need to balance Article 25 (freedom of religion) with safeguards against coercion
- Maintain social harmony and prevent misuse of religion

### Concerns and Implications:

- The proposed anti-conversion laws have sparked concerns about their implications on individual rights and freedoms. Mandatory public disclosure requirements may violate the right to privacy, potentially discouraging individuals from exercising their freedom of conscience.
- This raises questions about the balance between regulating conversions and protecting fundamental rights, particularly Article 25, which guarantees freedom of conscience.
- The broad definitions in these laws also create scope for misuse, potentially leading to harassment or targeting of certain groups. Notably, similar laws exist in states like Uttar Pradesh and Madhya Pradesh, indicating a wider policy shift towards regulating conversions. This trend warrants careful consideration of the potential consequences for individual freedoms and the federal structure of India.

### Conclusion:

The Chhattisgarh Freedom of Religion Bill 2026 represents a significant tightening

of anti-conversion laws in India. While it aims to prevent coercive conversions and ensure transparency, it also raises important constitutional questions regarding privacy, individual liberty, and religious freedom. Balancing these concerns will be crucial for its effective and fair implementation.

## Supreme Court's Observations on Prison Reforms in India

### Context:

Recently, the Supreme Court of India directed all states and Union Territories to submit updated data regarding prisons, specifically statistics on overcrowding by May 18, 2026. In India, prisons fall under the 'State List' of the Constitution. The country houses over 1,300 jails with a combined capacity of approximately 439,000 inmates; however, the actual inmate population exceeds 530,000, giving rise to a severe problem of overcrowding.

According to current trends, more than 70% of inmates are undertrials, the national occupancy rate stands at approximately 120% (as of 2023), and some prisons are operating at 150–200% of their capacity, figures that clearly underscore the structural challenges plaguing the prison system.

### Key Issues Highlighted:

- India's prisons face significant challenges, including chronic overcrowding, which leads to inhuman living conditions and violates Article 21 of the Constitution (Right to Life & Dignity), as noted by the Supreme Court. The majority of inmates are undertrials, stuck due to judicial delays, lack of legal aid, and slow investigations.
- Infrastructure is inadequate, with shortages

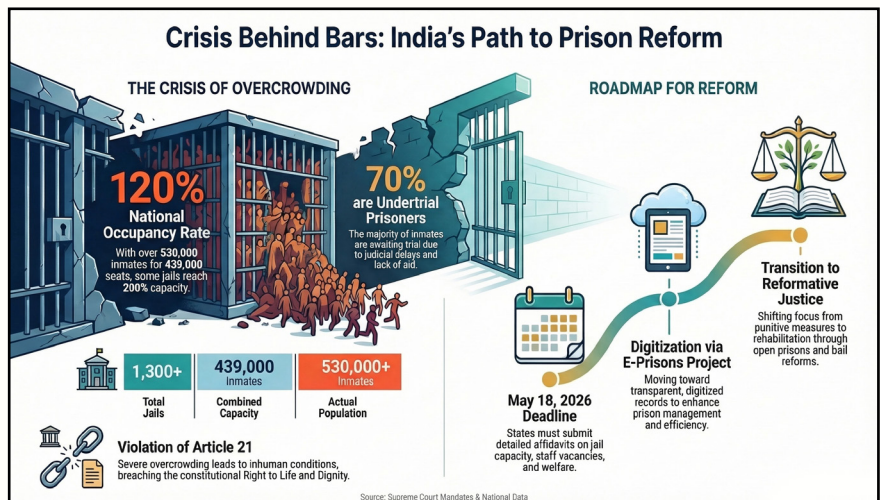
of prison staff, medical facilities, and separate women's prisons. Women prisoners and their children suffer disproportionately, lacking dedicated facilities, education, and welfare measures. These issues highlight the need for prison reforms prioritizing dignity, rehabilitation, and justice.

### Supreme Court Directions:

- The Supreme Court has directed States and UTs to submit detailed affidavits on prison conditions, including jail-wise sanctioned capacity vs actual inmates, overcrowding percentage, steps for decongestion, details of women prisons and child welfare measures, and staff strength and vacancies.
- These affidavits, to be filed by Home Secretaries, will aid the ongoing suo motu case on prison conditions, helping address issues like overcrowding and inadequate infrastructure.

### Significance of the Order:

- Promotes data-driven governance
- Ensures accountability of States
- Strengthens judicial oversight on prison reforms



- Focus on human rights and dignity of prisoners

### Government Initiatives:

- The government has introduced several

initiatives to reform India's prison system, including:

- » The proposed Model Prisons Act, 2023, aiming to overhaul prison management.
- » The E-prisons Project digitizes prison records, enhancing transparency and efficiency.
- » Open prisons are being promoted to reduce overcrowding, focusing on rehabilitation.
- » Additionally, legal aid schemes support undertrials, addressing judicial delays and access to justice.
- These steps aim to improve prison conditions and prioritize rehabilitation.

### Way Forward:

- Speed up judicial processes and bail reforms
- Expand open and semi-open prisons
- Improve infrastructure and staffing
- Focus on rehabilitation and correctional approach
- Ensure special provisions for women and children

### Conclusion:

It is essential to adopt a holistic and humane approach toward prison reform. The number of undertrial prisoners can be reduced by expediting judicial processes and reforming the bail system. Expanding open and semi-open prisons will be instrumental in alleviating overcrowding and promoting rehabilitation. Also, improvement in the infrastructure and human resources of prisons is necessary. The prison system should prioritize the rehabilitation of inmates, shifting its focus from being punitive to being reformative. Additionally, ensuring special facilities and safety measures for female inmates and their children is of paramount importance.

## Central Armed Police Forces (General Administration) Bill, 2026

### Context:

Recently, The Central Armed Police Forces (General Administration) Bill, 2026, was passed in Parliament. This Bill was introduced against the backdrop of a Supreme Court verdict delivered in 2025 concerning the cadre rights of the Central Armed Police Forces (CAPFs).

### Background:

- In May 2025, the Supreme Court of India directed the government to progressively reduce IPS deputation in CAPFs at the levels of DIG and IG within two years. The Court observed that excessive IPS dominance:
  - » Led to career stagnation of CAPF cadre officers
  - » Negatively impacted morale and motivation
  - » The Centre's review petition was later dismissed, reinforcing the ruling.



### About Central Armed Police Forces (CAPFs):

- The CAPFs are a group of seven security forces under the Ministry of Home Affairs (MHA) tasked with maintaining internal security, guarding borders and protecting critical infrastructure.
- **Major CAPFs and Their Roles:**
  - » **Central Reserve Police Force (CRPF, 1939):** Largest CAPF; handles internal security, counter-insurgency, and elections
  - » **Border Security Force (BSF, 1965):** Guards borders with Pakistan and Bangladesh
  - » **Indo-Tibetan Border Police (ITBP, 1962):** Secures the India-China border in high-altitude areas
  - » **Central Industrial Security Force (CISF, 1969):** Protects critical infrastructure like airports and PSUs
  - » **Sashastra Seema Bal (SSB, 1963):** Guards borders with Nepal and Bhutan
- **Other Important Forces:**
  - » **Assam Rifles (1835):** Oldest force; guards Indo-Myanmar border

- » **National Security Guard (NSG):** Elite counter-terror force (“Black Cats”)
- CAPFs perform roles such as counter-insurgency, Left Wing Extremism management, border security, VIP protection, and disaster response, forming the backbone of India’s internal security system.

- » Centre-State coordination, as they serve in both domains
- » Strategic leadership and policy integration
- » Unified command in complex security situations
- » Given India’s challenges, insurgency, Left Wing Extremism, and border threats, integrated leadership is seen as critical.

### CAPF: COURT vs GOVERNMENT BILL

 <b>SUPREME COURT</b> MAY 2025	 <b>GOVT BILL 2026</b>
<ul style="list-style-type: none"> <li>✓ CAPFs are <b>OGAS</b></li> <li>✓ <b>Reduce IPS deputation</b></li> <li>✓ Improve career progression</li> <li>✓ Cadre review &amp; rule changes</li> </ul>	<ul style="list-style-type: none"> <li>• Can <b>override</b> any court judgment</li> <li>• <b>Deputation</b> fixed in law</li> <li>• <b>IG: Up to 50%</b></li> <li>• <b>ADG: Min 67%</b></li> <li>• <b>DG: 100%</b> deputation</li> </ul>
From reducing deputation → to legally locking it in	

### Concerns Raised by CAPF Officers:

- Retired and serving CAPF officers have opposed the Bill, citing:
  - » **Career Stagnation:** Officers reportedly remain at entry-level ranks for extended periods
  - » **Limited Promotions:** Deputation reduces opportunities for cadre officers
  - » **Operational vs Leadership Gap:** CAPF officers often lead field operations, while IPS officers occupy top administrative posts
  - » **Pay and Status Issues:** Inadequate implementation of Non-Functional Upgradation (NFU) benefits

### Key Provisions of the Bill:

- The Bill proposes an umbrella legal framework for CAPFs and includes provisions that ensure continued IPS presence:
  - » **Override Clause:** Rules framed by the Centre will prevail over any law or court judgment
  - » **Institutionalised IPS Deputation:**
    - 50% IG posts filled by IPS
    - At least 67% Additional DG posts
    - 100% DG and Special DG posts reserved for IPS
  - » **Centralised Control:** Empowers the Ministry of Home Affairs to regulate recruitment, promotions, and service conditions
- This effectively ensures continued IPS dominance in higher command positions.

### Conclusion:

The CAPF Bill 2026 attempts to institutionalise a centralised and coordinated leadership model, but raises concerns about cadre justice and organisational balance. A nuanced approach that preserves operational efficiency while ensuring fair career progression is essential to maintain both effectiveness and morale in India’s internal security forces.

**MLATrack.com: Kerala’s Digital Leap in Transparency and Governance**

### Context:

Recently, in Kerala, India’s first digital platform named MLATrack.com has been launched, which tracks the legislative performance of Members of the Legislative Assembly

### Government’s Rationale:

- The government argues that IPS officers are essential for:

(MLAs). This initiative is highly significant in strengthening transparency, accountability, and democracy through digital means.

### What is MLATrack.com?

- It is a public digital database that collects and presents data on the activities and performance of members of the Kerala Legislative Assembly (2021–2026). It has been developed by Athethi Research in collaboration with Sahya Digital Conservation Foundation.
- **Key Features:**
  - » **MLA Profiles:** It provides a brief biodata of each MLA, including their educational qualifications and a map of their constituency.
  - » **Performance Tracking:** It offers detailed information on MLAs' attendance in the Assembly, the questions they have raised (over 68,000 questions), and their participation in debates.
  - » **MLA Fund Details:** The portal also tracks projects approved under the Local Area Development Scheme (LAC ADS) and the utilization of funds.
  - » **Data Visualization:** Complex legislative data is presented in simplified forms through graphs and charts, making it easier for common citizens to understand.

### Importance in Democracy and Good Governance:

- **Accountability:** This platform enables citizens to evaluate the performance of their elected representatives.
- **Transparency:** By making legislative proceedings accessible to the public, it enhances transparency in governance.
- **Evidence-based Analysis:** It provides unbiased data to media and researchers for analyzing the performance of MLAs, without subjective rankings.
- **Citizen Participation:** It promotes voter awareness, thereby strengthening the roots of democracy.

### Other Important E-Governance Initiatives:

- **PRAGATI (Pro-Active Governance and Timely Implementation):** It is a multi-purpose platform aimed at ensuring transparency and accountability in governance. It addresses public grievances and monitors important programs and projects of the Central and State Governments. It involves the Prime Minister's Office (PMO), Union Secretaries, and Chief Secretaries of States, thereby promoting cooperative federalism. It uses digital data management, video conferencing, and geospatial technology.
- **MyGov (Citizen Engagement Platform):** It provides citizens an opportunity to engage with the government in policy-making and share their ideas. Public suggestions have been sought on important issues such as the National Education Policy and Data Protection Policy.
- **DigiLocker:** It allows citizens to securely store and share their documents in digital form.
- **UMANG (Unified Mobile Application for New-age Governance):** It provides access to more than 1,000 government services (such as PF services, gas booking, etc.) through a single mobile application.
- **CPGRAMS:** The Centralized Public Grievance Redress and Monitoring System, where citizens can register their complaints.
- **GeM (Government e-Marketplace):** A transparent online portal for procurement of goods and services by government departments.

### Conclusion:

MLATrack.com is a powerful initiative in the direction of digital transformation of democratic governance, which promotes a culture of performance-based evaluation in representative politics. This initiative aligns with the broader vision of Digital India, where technology is leveraged to make governance more transparent, accountable, and inclusive.



# International Relations

## West Asia Crisis: India's Strategic Autonomy and Balanced Diplomacy

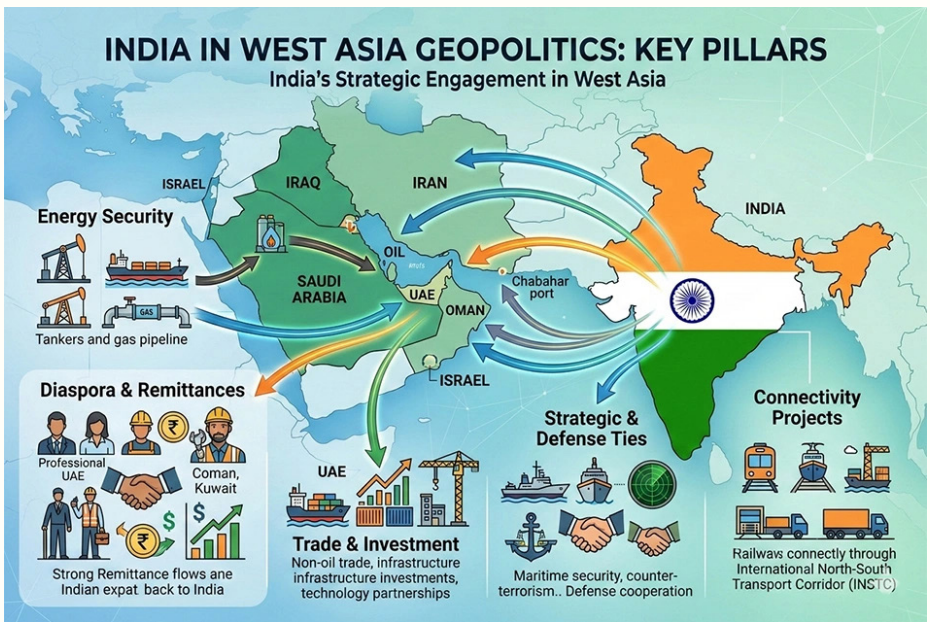
### Context:

In the present global scenario, West Asia has emerged as a geopolitically unstable region, where rising tensions among Iran, Israel, and United States have not only challenged regional peace but are also impacting the global economy, energy security, and international politics. Amid this complex geopolitical crisis, India's diplomacy presents an example of a balanced, pragmatic, and multi-aligned approach. For India, this crisis is not merely an external conflict but a multidimensional issue linked to national interests, energy needs, the safety of the Indian diaspora, and strategic partnerships.

ideological and religious differences. Iran's political system, based on the Islamic Revolution, opposes Western influence and Israel, while Israel defines itself as a Jewish nation-state. As a result, the conflict is not merely political but also one of identity and existence.

### Nature and Causes of the West Asia Crisis:

- West Asia has long been a center of conflict, but the current crisis has elevated it to a new level. The growing tensions among Iran, Israel, and the United States are driven by several interconnected factors, making the crisis complex and long-term in nature.
- Firstly, the conflict is driven by deep ideological and religious differences. Iran's political system, based on the Islamic Revolution, opposes Western influence and Israel, while Israel defines itself as a Jewish nation-state. As a result, the conflict is not merely political but also one of identity and existence.
- The second major factor is Iran's nuclear program, which it claims to be peaceful, but Israel and the United States perceive as a potential pathway to nuclear weapons development.
- The third key factor is linked to regional dominance and proxy wars. Iran seeks to



expand its influence by supporting various organizations and armed groups such as Hezbollah (Lebanon), Hamas (Gaza), and various Shia militia groups active in Iraq and Syria. These groups operate against Israel and its allies, leading to continuous conflict without direct war. Consequently, the conflict extends beyond two countries and spreads across the region, increasing instability.

- In addition, the active presence and policy interventions of the United States globalize the conflict beyond regional boundaries. US military and diplomatic support to Israel, along with sanctions on Iran, further intensify tensions. Moreover, the vast energy resources of West Asia and strategic routes such as the Strait of Hormuz make the region critically important, turning energy politics into a major driver of the conflict.

### Strategic and Economic Significance of West Asia for India:

From India's perspective, West Asia is a crucial convergence zone of energy security, maritime trade, diaspora safety, and connectivity diplomacy.

- **Energy Security:** India depends on imports for nearly 85% of its oil requirements, with West Asia being a primary source. Instability in this region directly affects India's economy, inflation, and growth rate.
- **Trade and Maritime Interests:** A significant portion of India's trade is conducted via maritime routes, many of which pass through West Asia. The security of Sea Lines of Communication (SLOCs) is vital for India's economic interests. Rising freight and insurance premiums during recent tensions have raised concerns of economic losses for Indian exporters, highlighting the link between geopolitical risks and economic vulnerability.
- **Indian Diaspora:** Around 8 million Indians work in Gulf countries, making them a major source of remittances. Their safety becomes a top priority during crises.
- **Strategic Projects:**

- » From a strategic perspective, the Chabahar Port (Iran) and the International North-South Transport Corridor (INSTC) are highly significant for India.
- » Chabahar Port provides India direct access to Afghanistan and Central Asia bypassing Pakistan. The INSTC is a multimodal transport network connecting India with Iran, Russia, and Europe, reducing both time and cost.
- These projects enhance trade and connectivity while strengthening India's geopolitical position and strategic influence.



### India's Diplomatic Strategy:

- **Strategic Autonomy:** India has refrained from openly supporting any one side in the crisis and has instead adopted a balanced and independent stance. This policy enables India to make decisions based on national interests amid shifting global power dynamics. It represents the modern form of India's traditional non-alignment, where pragmatism outweighs ideological alignment.
- **Multi-Alignment:** India maintains balanced and active relations with multiple powers simultaneously:
  - » Israel- Defense, cyber security and advanced technological cooperation
  - » Iran- Energy supply, Chabahar Port, and regional connectivity
  - » United States- Strategic, economic, and

Indo-Pacific partnership

- This policy provides India with flexibility in global politics, allowing it to advance its interests across multiple power centers.
- **Energy Diplomacy:** India has adopted a strategy of diversifying energy sources to reduce dependence on any single region or country. This helps mitigate the impact of global crises, supply disruptions, and fluctuations in oil prices, thereby strengthening energy security.
- **Emphasis on Peace and Dialogue:** India consistently advocates for ceasefire, diplomatic negotiations, and respect for international law. It promotes de-escalation, stability, and peaceful resolution through multilateral platforms, contributing to regional and global balance.

### Challenges Before India:

- **Energy and Economic Pressure:** Rising oil prices lead to inflation and impact the current account deficit. Since India depends heavily on energy imports, instability in West Asia directly affects fuel prices, transportation costs, and industries, thereby exerting fiscal pressure and potentially slowing economic growth.
- **Strategic Dilemma:** India's biggest challenge is to maintain balance among its diverse partnerships. Relations with Israel and the United States in defense, technology, and strategy, and cooperation with Iran in energy and connectivity create competing interests. Managing these contradictions tests India's diplomatic capability.
- **Safety of Indian Diaspora:** Ensuring the safe evacuation of Indians during conflicts remains a major challenge, as seen in operations like evacuation missions in past crises. With millions of Indians working in the Gulf, rapid response mechanisms for safety, evacuation, and rehabilitation are essential.
- **Maritime and Trade Risks:** Insecurity in maritime routes can disrupt trade and global supply chains. Tensions in critical chokepoints such as the Strait of Hormuz

directly affect oil transport, exports, imports, and logistics costs, impacting India's economic stability.

### India's Role and Policy Response in the Current Crisis:

- During the ongoing West Asia crisis, India's policy response has been mature, calibrated, and multi-layered. On one hand, India has taken pragmatic steps to secure energy supplies, protect sea lines of communication, and ensure the safety of its diaspora.
- On the other, it has maintained high-level diplomatic engagement with all major stakeholders, including Iran, Israel, Gulf countries, the United States, and European partners. As a result, India has so far managed to safeguard its energy imports and maritime trade from major disruptions, although economic pressures persist.
- In the context of the Global South, India is also well-positioned to articulate the collective concerns of developing countries regarding energy security, humanitarian consequences, and reconstruction needs on international platforms.

### Conclusion:

The West Asia crisis represents a comprehensive test for India's diplomacy at global, regional, and domestic levels. It highlights the deep interconnection between external geopolitical developments and internal stability. Present, India's role is not limited to safeguarding its own interests; it must also act as a stabilizing force in South Asia and beyond. Through strategic autonomy, proactive diplomacy and regional cooperation, India can strengthen its position as a reliable and responsible global leader.

# Short Issues

## SIPRI Report on Arms Imports

### Context:

A recent report by the Stockholm International Peace Research Institute (SIPRI) revealed that India remained the world's second-largest importer of major arms between 2021 and 2025.

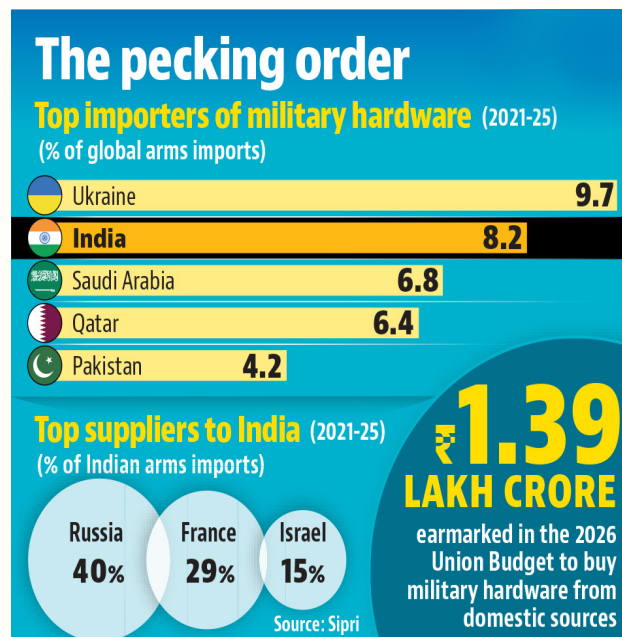
### Key Findings of the SIPRI Report:

- The SIPRI analysis provides several important insights into global arms transfers and India's position in the defence market.
  - » India ranked second globally in arms imports during 2021–25.
  - » The country accounted for 8.2% of global arms imports.
  - » India's arms imports declined by about 4% compared to the previous five-year period (2016–2020).
  - » The decline is partly due to growing domestic defence production, though indigenous projects often face delays.
- Globally, Ukraine was the largest arms importer, followed by India, Saudi Arabia, Qatar and Pakistan.

### Reasons for India's High Arms Imports:

- **Security Challenges in South Asia:**
  - » India's arms procurement is largely shaped by strategic threats from neighbouring countries. Tensions with China and Pakistan, including occasional military clashes, require constant upgrading of defence capabilities.
  - » These geopolitical factors drive India to acquire advanced military equipment such as fighter aircraft, submarines, missiles and surveillance systems.
- **Modernisation of Armed Forces:**
  - » India is undertaking extensive military modernisation programmes to upgrade ageing equipment across the Army, Navy and Air Force.
  - » Large procurement projects include:
    - Combat aircraft purchases

- Advanced missile systems
- Submarines and naval platforms
- » Many of these high-technology systems are still sourced from foreign suppliers.
- **Limitations in Domestic Defence Production:**
  - » India has made progress in developing indigenous systems under initiatives such as Make in India and Atmanirbhar Bharat in Defence. However, domestic manufacturing often faces:
    - technological gaps
    - production delays
    - limited industrial capacity
  - » As a result, imports remain necessary for advanced weapon systems.



### Changing Pattern of Defence Procurement:

- **Declining Dependence on Russia:**
  - » Historically, Russia was India's largest arms supplier. However, its share in Indian arms imports has steadily declined:
    - 70% during 2011–15
    - 51% during 2016–20
    - 40% during 2021–25
  - » India has increasingly diversified its suppliers.

- **Rise of Western Defence Partners:**
  - » India is now purchasing more defence equipment from countries such as:
    - France
    - United States
    - Israel
  - » This diversification reflects India's strategy to reduce dependence on a single supplier and enhance strategic partnerships.
- **Global Arms Trade Trends:**
  - » The SIPRI report also highlights broader global trends:
    - United States remained the largest arms exporter with 42% of global exports.
    - France ranked second, followed by Russia.
    - Europe emerged as the largest arms-importing region, driven by security concerns related to the Ukraine conflict.
  - » These trends reflect rising geopolitical tensions and increased defence spending worldwide.

### Implications for India:

- The findings highlight the need for India to accelerate defence indigenisation, strengthen domestic research and development, and enhance private sector participation in the defence manufacturing ecosystem.

### Conclusion:

The SIPRI report shows that while India is striving to become self-reliant in defence production, it still remains one of the world's largest arms importers due to its complex security environment and modernisation needs. Strengthening indigenous defence capabilities through technological innovation, industrial development and strategic partnerships will be crucial for India to reduce dependence on foreign military equipment in the long term.

## Finland President Visit to India

### Context:

The State Visit of the President of Finland, Alexander Stubb, to India from 4–7 March 2026 marked a significant step in strengthening India–Finland relations. The visit resulted in the elevation of bilateral relations to a “Strategic Partnership in Digitalisation and Sustainability.”

### Key Outcomes of the Visit:

- **Strategic Partnership in Digitalisation and Sustainability:** The most important outcome was the decision to upgrade bilateral ties to a Strategic Partnership focused on digitalisation and sustainability. The partnership aims to expand cooperation in advanced technologies such as Artificial Intelligence, 5G and 6G telecommunications, quantum computing, and digital infrastructure. It also seeks to promote sustainable development and green technologies.
- **Migration and Mobility Partnership:** India and Finland signed a Migration and Mobility Partnership Agreement to facilitate the movement of skilled professionals, researchers, and students between the two countries. This agreement is expected to strengthen collaboration in technology, innovation, and research sectors.
- **Cooperation in Sustainability and Clean Technologies:** Both countries agreed to deepen cooperation in environmental protection, renewable energy, circular economy, and climate action. This collaboration aligns with global commitments toward sustainable development and climate mitigation.
- **Expansion of Trade and Economic Cooperation:** India and Finland emphasized the need to enhance trade, investment, and business collaboration. The leaders also acknowledged that the India–EU Free Trade Agreement will create new opportunities for

bilateral trade and economic engagement.

- **Collaboration in Research, Innovation and Emerging Technologies:** The visit highlighted the importance of research partnerships, startup collaboration, and innovation ecosystems. Both countries agreed to strengthen cooperation in areas such as semiconductors, digital technologies, and secure supply chains.
- **Multilateral Cooperation and Global Governance:** India and Finland reiterated their commitment to a rules-based international order and multilateral cooperation, with the United Nations at the center. They also emphasized global cooperation to address challenges such as climate change and biodiversity loss.



### Significance of the Visit:

The visit has several strategic implications:

- Strengthens India's engagement with Nordic countries and Europe.
- Promotes collaboration in emerging technologies and digital innovation.
- Enhances talent mobility and knowledge exchange.
- Supports cooperation in sustainability and climate action.

### Evolution of India–Finland Relations:

- **Establishment of Diplomatic Relations (1949–1950):** Formal diplomatic relations between India and Finland were established on 10 September 1949.
- **Early Bilateral Cooperation:** During the initial decades, the foundations of bilateral trade and friendly relations were laid. High-level visits, including Prime Minister Indira Gandhi's visit in 1983 and Finnish President Mauno Koivisto's visit in 1987, played an important role in strengthening the relationship.

### Modern Era:

- **Technological Partnership:** Finnish company Nokia has played a significant role in the development of India's telecommunications sector. In recent years, cooperation has expanded to advanced areas such as 5G, 6G, quantum computing, and smart grids.
- **Education and Skills:** India has shown interest in Finland's education system, particularly in teacher training, which has led to growing cooperation between the two countries in the education sector.
- **Environment:** Both countries are working together on circular economy and green energy initiatives, with the bioethanol refinery project in Assam being one of the key collaborative initiatives.
- Culturally, Indian yoga and culture are popular in Finland. In 2020, bilateral trade between the two countries reached approximately USD 2.3 billion, with Finland emerging as an important Nordic partner for India.

### Conclusion:

The elevation of India–Finland relations to a Strategic Partnership in Digitalisation and Sustainability marks a new phase of cooperation. By focusing on technology, innovation, and sustainable development, both countries aim to build a forward-looking partnership that addresses global challenges while promoting economic growth and digital transformation.

## Canadian Prime Minister Visit to India

### Context:

Recently, the Prime Minister of Canada, Mark Carney, paid an official visit to India from 27 February to 2 March 2026. During the visit, the Prime Minister of India, Narendra Modi, and the Canadian Prime Minister held a historic bilateral meeting in New Delhi. This meeting is being regarded as a sign of a “Strategic Reset” in relations after a period of diplomatic strain. This was Prime Minister Carney’s first official visit to India, highlighting renewed momentum in India–Canada bilateral relations. The visit provided an opportunity to reinvigorate a partnership spanning more than 75 years and to give it a new strategic direction.

### Key Outcomes of the Meeting:

Sector	Decision / Outcome
Trade Target	Agreed to increase bilateral trade to USD 50 billion by 2030.
Trade Agreement (CEPA)	Reaffirmed commitment to conclude the Comprehensive Economic Partnership Agreement by the end of 2026.
Private Sector Engagement	Roadmap for enhanced business-to-business collaboration and joint ventures.
Innovation & Technology	Expanded cooperation in AI, quantum computing, supercomputing, and semiconductor development.
Critical Minerals	MoU signed to strengthen supply chain resilience in critical minerals.
Energy Partnership	Launch of the “Next Generation Energy Partnership” covering hydrocarbons, renewables, green hydrogen, and energy storage.
Climate Platforms	Canada announced its intention to join the International Solar Alliance and the Global Biofuel Alliance.

Nuclear Cooperation	Long-term uranium supply agreement signed; collaboration on Small Modular Reactors (SMRs) and advanced reactors.
Agriculture	Plan to establish an India–Canada Pulse Protein Centre of Excellence.
Defence & Security	Agreement to enhance defence industrial cooperation, maritime domain awareness, military exchanges, and establish an India–Canada Defence Dialogue.
Education & Culture	Expansion of Canadian universities in India; MoU on cultural and Indigenous community exchanges.
Regional Cooperation	Canada expressed interest in becoming a Dialogue Partner in the Indian Ocean Rim Association.

### India–Canada Relations:

- India–Canada relations began on a cooperative note under the Colombo Plan in 1950. However, tensions arose after India’s peaceful nuclear tests in 1974, as Canada had previously supplied nuclear technology.
- In 1985, the bombing of Air India Flight 182 bombing made security concerns a central element of bilateral discourse.
- In the 21st century, relations witnessed renewed improvement. The 2010 Nuclear Cooperation Agreement reopened civil nuclear trade, and in 2018, the partnership was elevated to a “Strategic Partnership.”

### The 2023 Diplomatic Crisis:

- In 2023, following the killing of Hardeep Singh Nijjar in Surrey, then Canadian Prime Minister Justin Trudeau accused India of involvement, an allegation strongly denied by New Delhi. Diplomatic expulsions followed, and negotiations on the Free Trade Agreement (FTA) were suspended.

### Drivers of the Reset:

- High-level engagement during the 2025 G20 Summit.

- Strong economic fundamentals: Bilateral goods trade exceeded CAD 13 billion in 2024.
- Canadian portfolio investment in India exceeds CAD 100 billion.
- Nearly 600 Canadian companies operate in India.

### Way Forward:

To ensure a durable and sustainable reset in India–Canada relations, both countries must adopt a multi-dimensional approach. Institutionalizing counter-terrorism cooperation is essential to effectively address extremist concerns and security issues. Expanding collaboration in emerging sectors such as space, clean energy, artificial intelligence (AI), and education will help meet long-term strategic priorities of both nations.

### Conclusion:

Prime Minister Mark Carney’s visit to India is not merely a routine diplomatic engagement; it represents a significant effort to strengthen strategic and economic cooperation, reduce diplomatic tensions, and advance shared global objectives. The positive trajectory of this visit opens new opportunities for India’s foreign policy and for deeper engagement between India and Canada in the evolving global order.

## India’s Opposition to WTO IFD Agreement

### Context:

India has strongly opposed the China-backed Investment Facilitation for Development (IFD) agreement at the WTO, viewing it as contrary to multilateral norms and a threat to its policy sovereignty. Despite the support of over 125 countries, India vigorously opposed its inclusion in the 14th Ministerial Conference.

### About IFD Agreement:

- The Investment Facilitation for Development (IFD) Agreement is a plurilateral agreement

finalized by 123 WTO members, aimed at improving the global investment climate.

- It focuses on making it easier for foreign investors to establish themselves, conduct day-to-day business, and expand in developing and least-developed countries (LDCs).
- Subsequently, the 126 WTO members co-sponsoring the IFD Agreement requested its incorporation into the WTO framework as a plurilateral agreement, open for all WTO members to join, under Annex 4 of the Marrakesh Agreement establishing the World Trade Organization.

### Key Features:

- Streamlining procedures and faster approvals
- Coordination among government agencies
- Special & Differential Treatment (SDT) for developing nations
- **Nature:** Plurilateral agreement—binding only on participating members.

### **Deep Dive**

40 WTO members raise issues over investment facilitation pact at WTO

India, Türkiye, Sri Lanka, Nepal, others oppose China-led deal

IFD a key deliverable at WTO MC14 this week

Developed members cherry pick own interests

Investment not a trade issue, says India

Türkiye cites lack of clarity on sectoral exemptions, ecomm inclusion in IFD

India, South Africa had blocked IFD proposal in MC13

Pre-, post-establishment clauses nor clear



### Reasons for India's opposition:

- **Threat to Multilateralism:**
  - » WTO is based on consensus-based decision-making
  - » India argues plurilateral deals undermine inclusivity
  - » Risk of fragmentation of global trade rules
- **Two-Tier WTO System:**
  - » Fear of an elite group of rule-makers
  - » Marginalisation of developing countries

- **Negotiation Imbalance:** Shifts focus away from key unresolved issues:
  - » Agricultural subsidies
  - » Public stockholding for food security
- **Policy Space Concerns**
  - » May constrain domestic regulatory flexibility
  - » Concerns about investment screening mechanisms
- **China Factor (Strategic Concern)**
  - » Around 98 of 128 IFD members linked to Belt and Road Initiative (BRI)
  - » Standardised rules may:
    - Strengthen China’s geo-economic influence
    - Impact India’s neighbourhood strategically

**About World Trade Organization (WTO):**

- The World Trade Organization (WTO) is an international body established in 1995 under the Marrakesh Agreement, headquartered in Geneva, Switzerland.
- With 166 member countries covering 98% of global trade, its objectives include promoting free and fair international trade, reducing trade barriers and discrimination, and supporting developing countries' development.
- The WTO serves as a forum for trade negotiations, provides a dispute settlement mechanism, conducts trade policy reviews of members, and establishes a framework for global trade rules.

**Conclusion:**

The IFD Agreement represents a shift from multilateralism to plurilateralism in global trade governance. India’s resistance reflects concerns over equity, sovereignty, and strategic autonomy, rather than opposition to investment itself. Going forward, India must adopt a balanced and pragmatic approach to protect its interests while avoiding isolation and maintaining influence in shaping the future of the WTO.

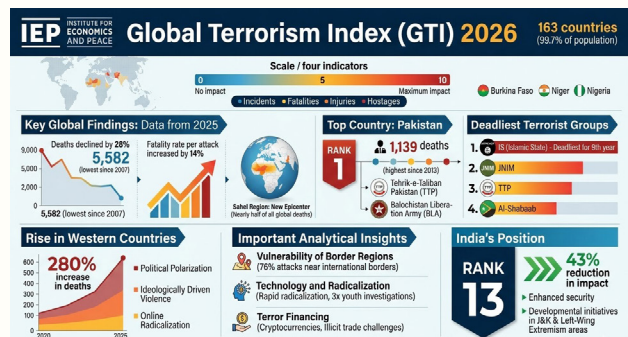
**Global Terrorism Index 2026**

**Context:**

The Global Terrorism Index (GTI) 2026 has recently been released by the Institute for Economics and Peace (IEP). The report provides a comprehensive analysis of terrorism trends across 163 countries, covering approximately 99.7% of the world’s population. The index ranks countries on a scale of 0 (no impact) to 10 (maximum impact) based on four indicators: incidents, fatalities, injuries, and hostages. Based on data from 2025, the report presents a detailed assessment of the evolving nature of terrorism, casualty patterns, and geopolitical implications worldwide.

**Key Findings of the Report:**

- **Global Trends:** In 2025, deaths due to terrorism declined by 28%, reaching 5,582, the lowest level since 2007. However, the fatality rate per attack increased by 14%, indicating that while the number of attacks decreased, they became more lethal.
- **Pakistan Tops the Index:** For the first time in the history of the index, Pakistan has been ranked as the most terrorism-affected country (Rank 1). In 2025, the country recorded 1,139 deaths, the highest since 2013. The increased activity of groups such as Tehrik-e-Taliban Pakistan (TTP) and the Balochistan Liberation Army (BLA) has been a major contributing factor.



- **Sahel Region as the New Epicenter:** The center of terrorism has shifted from the Middle East to the Central Sahel region (Sub-Saharan

Africa). Countries like Burkina Faso, Niger, and Nigeria remain among the most severely affected. Nearly half of all global terrorism-related deaths occur in this region.

- **Deadliest Terrorist Groups:** The Islamic State (IS) has remained the world's deadliest terrorist organization for the ninth consecutive year. It is followed by JNIM (Jama'at Nusrat al-Islam wal-Muslimin), TTP, and Al-Shabaab.
- **Rise in Western Countries:** The report highlights a concerning trend of a 280% increase in terrorism-related deaths in Western countries. This rise is attributed to political polarization, ideologically driven violence, and online radicalization.

### India's Position:

- The report presents a positive outlook for India. The country's ranking has improved, placing it at 13th position.
- India has witnessed a 43% reduction in the impact of terrorism. This decline is largely due to enhanced security measures and developmental initiatives in Jammu & Kashmir and areas affected by Left-Wing Extremism.

### Important Analytical Insights:

- **Vulnerability of Border Regions:** Approximately 76% of terrorist attacks occur within 100 km of international borders, highlighting the importance of robust border management for countries like India.
- **Technology and Radicalization:** The rapid radicalization of youth through digital platforms is an emerging concern. The report notes a threefold increase in terrorism-related investigations involving youth since 2021.
- **Terror Financing:** Despite international cooperation, terror financing through cryptocurrencies and illicit trade continues to pose a significant challenge.

### Conclusion:

While there has been an overall global decline in terrorism, it is becoming more concentrated, adaptive, and region-specific. India must continue its zero-tolerance policy and strengthen regional cooperation mechanisms such as SCO and BRICS to effectively combat cross-border terrorism.

## Balendra Shah 47th Prime Minister of Nepal

### Context:

Recently, was sworn in as the 47th Prime Minister of Nepal on 27 March 2026. At the age of 35, he has become the youngest Prime Minister of the country, marking a transformative shift in Nepal's political landscape. This transition signifies the emergence of a new, youthful, accountable, and result-oriented political order, moving away from traditional political structures.

### Political Background:

- The rise of Balendra Shah is rooted in the Gen-Z-led anti-corruption movements of 2025, which challenged Nepal's established political system.
- In the 2026 general elections, his party, the Rastriya Swatantra Party, secured a massive mandate, reflecting public discontent, unemployment, and governance failures.
- His leadership exemplifies "outsider politics," where alternative, people-centric leadership emerges in place of traditional political elites.
- Being a structural engineer, Shah focuses on good governance, infrastructure development, and digital transparency.
- His Madhesi background may potentially strengthen cultural and emotional linkages with India's bordering regions.
- He has assured employment opportunities and corruption-free governance for Nepal's youth, which may help reduce the issue of brain drain.



**BALENDRA  
SHAH**

**Nepal's Rapper-  
Turned Mayor  
Balen Enters  
PM Race**

- **Born in 1990, Kathma**
- **Role:** Mayor of Kathma Metropolitan City
- **Identity:** Civil Engineer, Rapper, lyricist on inequality, corruption and Gen Z favorite
- **Politics:** Won 2022 mayoral race as

### Key Dimensions of India–Nepal Relations:

The relationship between India and Nepal can be understood through the following pillars:

- **Connectivity and Infrastructure:**
  - » Expansion of link roads and railway connectivity (e.g., Jaynagar–Kurtha rail line) facilitates trade and mobility between the two countries.
  - » Nepal possesses immense hydropower potential. India's target to import 10,000 MW of electricity from Nepal represents a mutually beneficial arrangement.
- **Security and Strategic Cooperation:**
  - » Nepal shares borders with five Indian states—Uttar Pradesh, Bihar, Uttarakhand, Sikkim, and West Bengal.
  - » Joint military exercises such as Surya Kiran and the presence of Gorkha regiments in the Indian Army reflect deep strategic trust and military cooperation.
- **Economic and Trade Relations:**
  - » India is Nepal's largest trading partner. A significant portion of Nepal's foreign exchange earnings and essential supplies are routed through India.

### Major Challenges:

- **China Factor:** China's growing investment in Nepal's infrastructure under the Belt and Road Initiative (BRI) poses strategic concerns for India.
- **Boundary Disputes:** The 2020 map issued by Nepal regarding Kalapani, Lipulekh, and Limpiyadhura led to tensions in bilateral relations.
- **Water Sharing Issues:** Disputes related to Mahakali, Koshi, and Gandak treaties continue to create friction.
- **Review of the 1950 Treaty:** Sections within Nepal consider the India-Nepal Treaty of Peace and Friendship (1950) as unequal and demand its revision.
- **Open Border Concerns:** Issues such as illegal trade, human trafficking, and security threats remain significant challenges.

### Conclusion:

The leadership change in Nepal represents a broader “youth-driven political transition” that is reshaping South Asia's geopolitical landscape. For India, it is essential to move beyond a purely security-centric approach and advance relations based on shared prosperity and cooperative coexistence. Engaging effectively with a young leadership like Balendra Shah requires leveraging India's soft power and developmental assistance. A stable and prosperous Nepal is not only crucial for India's security but also for ensuring long-term regional stability in South Asia.



# Environment & Ecology



## India's National Report on Biodiversity: A Convergence of Policy, Conservation, and Sustainable Development

### Context:

Recently, India has submitted its 7th National Report (NR-7) to the Secretariat of the Convention on Biological Diversity (CBD). India has become one of the few countries in the world to present its report on this global platform. This report is a comprehensive document reflecting India's progress towards the implementation of the historic 'Kunming-Montreal Global Biodiversity Framework' (KMGBF) adopted in 2022. India, being one of the 17 mega-diverse countries in the world, holds about 7–8% of the world's known species despite having only 2.4% of the global land area. Thus, this report is extremely significant not only for India but also for maintaining global ecological balance.

### Background and Legal Basis of the Report:

- **Article 26 of CBD:** Under Article 26 of the Convention on Biological Diversity (CBD), it is mandatory for each member country to periodically submit reports on the measures taken and the progress achieved in meeting its targets.
- **Impact of COP-15:** During COP-15 held in Montreal, Canada, in December 2022, the KMGBF was adopted, which laid down 4 global goals and 23 action-oriented targets to be achieved by 2030. India's NR-7 has been prepared in alignment with these targets.

### India's Revised National Biodiversity Targets

### (NBTs):

India has revised its earlier targets and aligned them with KMGBF by setting 23 new National Biodiversity Targets (NBTs). These targets are categorized into three main pillars:

- **Reducing threats to biodiversity:** This includes preventing land and marine use changes, managing invasive alien species, and controlling pollution.
- **Meeting people's needs through sustainable use:** This includes sustainable management of agriculture, forestry, and fisheries.
- **Means of implementation and mainstreaming:** This involves mobilizing financial resources, capacity building, and preserving traditional knowledge.

### Key Highlights of the Report and India's Progress:

- **Conservation of species and population growth:** According to the report, India has achieved significant success in conserving its major wildlife species:
  - » **Tiger (Project Tiger):** India is now home to more than 75% of the world's wild tiger population. The number of tigers has increased from 2,967 in 2018 to 3,682 in 2022.
  - » **Asiatic Lion:** The population of lions in Gir, Gujarat, has shown continuous growth.
  - » **One-horned Rhinoceros:** Conservation efforts in areas like Kaziranga and

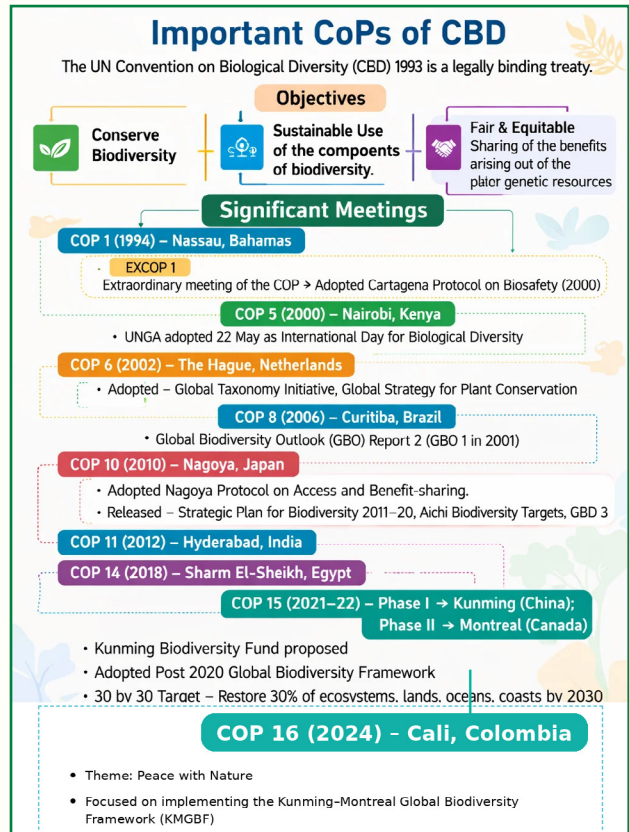
Manas have led to an improvement in their population.

- » **Snow Leopard and Asian Elephant:** A special 'landscape-based' approach has been adopted for their conservation as well.
- **Expansion of Protected Areas:** India has expanded its conservation network, which includes:
  - » **Protected Areas (PAs):** The country now has more than 1,000 protected areas (national parks, wildlife sanctuaries, community reserves).
  - » **Ramsar Sites:** India now has 85 Ramsar sites (wetlands of international importance), the highest in South Asia.
  - » **Other Effective Area-Based Conservation Measures (OECMs):** India has actively adopted the OECM model to bring private and community areas under conservation.
- **Ecosystem Restoration:** In line with the KMGBF's '30x30' target (restoring 30% of degraded land by 2030), India has made progress in converting wastelands into productive land and creating carbon sinks through afforestation. The 'Namami Gange' mission has been recognized by the United Nations as one of the top 10 ecosystem restoration projects in the world.
- **Access and Benefit Sharing (ABS):** India has established a robust three-tier structure under the Biological Diversity Act, 2002 (National, State, and local Biodiversity Management Committees - BMCs). India is a global leader in ABS agreements, ensuring that benefits derived from the use of biological resources reach local communities.

### Major Initiatives by India for Biodiversity Conservation:

- India has launched several important initiatives to strengthen biodiversity conservation, promoting sustainable development and ecological balance:
  - » **Mission LiFE:** The objective of Mission

LiFE is to promote environmentally responsible lifestyles among people to ensure sustainable use of resources.



- » **PM-PRANAM:** It is an important step towards reducing dependence on chemical fertilizers and conserving soil biodiversity. This scheme encourages states to adopt sustainable agricultural practices.
- » **MISHTI Scheme:** The MISHTI scheme aims to conserve and expand mangrove forests, which help protect coastal ecosystems and mitigate the impacts of climate change.
- » **International Big Cat Alliance (IBCA):** Through IBCA, India is providing global leadership in the conservation of big cats such as tigers, lions, and leopards.
- All these initiatives collectively reflect India's commitment to biodiversity conservation

and strengthen a balanced, sustainable, and nature-aligned development model.

### Key Challenges and Constraints:

Along with progress, the report also highlights some serious challenges:

- **Climate Change:** Melting Himalayan glaciers and rising sea levels pose threats to coastal biodiversity.
- **Human-Wildlife Conflict:** Increasing population and infrastructure development are fragmenting natural habitats of wildlife.
- **Invasive Alien Species:** Species like Lantana camara and water hyacinth are harming native vegetation.
- **Financial Constraints:** Developing countries still face a shortage of adequate international funding to achieve global biodiversity targets.


### Way Forward:

A multi-dimensional approach is essential to make biodiversity conservation effective in India. Greater participation of the private sector should be encouraged by promoting CSR funding and investments in conservation projects.


Additionally, the use of modern technologies such as AI, drones, and remote sensing is necessary to strengthen wildlife monitoring and data-driven management. Moreover, local and tribal communities should be placed at the center of conservation efforts by promoting their participation and traditional knowledge. Through these efforts, an inclusive, sustainable, and effective biodiversity conservation model can be developed.

### Conclusion:

India's 7th National Report makes it clear that the country is not limited to conservation alone but is moving towards a 'bio-centric' development model. The report stands as evidence of India's commitment to the global community. Embracing the idea of 'Vasudhaiva Kutumbakam,' India is playing the role of a 'global friend' not only within its borders but also in protecting the entire global ecosystem. Achieving the targets of the Kunming-Montreal Global Biodiversity Framework (KMGBF) is challenging, but India's current pace and policy framework indicate a promising future.




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# UPPCS

## General Studies



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# Short Issues

## Dusky Eagle-Owl Spotted in Uttarakhand After 15 Years

### Context:

The elusive Dusky Eagle-owl (Ketupa coromanda) has recently been sighted in the Phato tourism zone of the Terai West Forest Division in Uttarakhand, near the Corbett landscape, after a gap of nearly 15 years.

### About Dusky Eagle-Owl:

- The Dusky Eagle-owl belongs to the family Strigidae. Unlike many strictly nocturnal owl species, it is partly diurnal, meaning it may hunt during daylight, especially under cloudy conditions.

### Habitat and Distribution:

- » Widely distributed across South and Southeast Asia, including India, Nepal, Bangladesh, Pakistan, Myanmar and parts of Southeast Asia.
- » Prefers lowland riparian forests, plantations and old-growth woodland areas close to water bodies.
- » Usually found in flat terrains at elevations up to about 250 metres.

### Conservation Status:

- » **IUCN Red List:** Least Concern.

### Key Characteristics:

#### Physical Features:

- » A large greyish-brown owl measuring about 48–58 cm in length with striking yellow eyes.
- » Possesses long ear tufts, fine barring on its underparts, and white shoulder patches that help in camouflage.

#### Diet and Behaviour:

- » Functions as an apex predator with a diverse diet including birds, small mammals, fish, reptiles and insects.
- » Often reuses old stick nests built by other birds such as kites, vultures or eagles rather than constructing its own.
- » A typical clutch contains one to three

eggs.

#### Vocalisation:

- » Its call consists of low, guttural notes that gradually increase in speed and volume before fading away.



### Ecological Significance:

- The Dusky Eagle-owl is considered a “litmus test species” because its presence indicates a healthy and undisturbed ecosystem with a strong prey base. Its elusive nature and excellent camouflage make sightings rare even within known habitats.
- The recent sighting in the Corbett landscape reflects the success of habitat protection, reduced human interference and restoration of natural corridors in Uttarakhand’s forests.
- It also highlights the ecological richness of the Terai region, which supports diverse wildlife beyond its well-known tiger population.

### Conclusion:

The reappearance of the Dusky Eagle-owl in Uttarakhand after 15 years underscores the importance of sustained conservation efforts and habitat management. Such sightings not only enhance scientific understanding of species distribution but also reinforce the need to preserve fragile forest ecosystems that sustain India’s rich biodiversity.

## CREA Report: 204 Indian Cities Fail Air Quality Standards

### Context:

A recent analysis by the Centre for Research on Energy and Clean Air (CREA) has revealed that 204 out of 238 Indian cities failed to meet national air quality standards, highlighting the severity of air pollution in the country. The study assessed air quality data based on PM2.5 concentrations, one of the most harmful air pollutants affecting human health. The findings indicate that air pollution remains a widespread and persistent environmental challenge across Indian urban centres.

### Key Findings of the Report:

- **Widespread Non-Compliance with Air Quality Standards:**
  - » The CREA analysis shows that the majority of Indian cities with sufficient monitoring data exceeded the National Ambient Air Quality Standards (NAAQS) for PM2.5.
  - » Out of 238 monitored cities, 204 recorded pollution levels above the permissible limits, indicating large-scale non-compliance.
- **Most Polluted Cities:**
  - » Several cities in the Indo-Gangetic Plains were among the most polluted in the country.
  - » Ghaziabad recorded the highest PM2.5 concentration at about 172  $\mu\text{g}/\text{m}^3$ .
  - » Noida and Delhi followed with 166  $\mu\text{g}/\text{m}^3$  and 163  $\mu\text{g}/\text{m}^3$ , respectively.
  - » These values are far above India's daily PM2.5 standard of 60  $\mu\text{g}/\text{m}^3$ , highlighting the seriousness of winter air pollution in northern India.
- **Air Pollution in Major Cities**
  - » Delhi recorded the highest pollution levels.
  - » Kolkata also exceeded the national standards.
  - » Mumbai, Chennai, and Bengaluru

recorded comparatively lower PM2.5 levels, with Bengaluru reporting around 39  $\mu\text{g}/\text{m}^3$ .

- **Cleanest Cities**

- » The report also identified relatively cleaner urban centres. For example, Chamarajanagar in Karnataka recorded a PM2.5 concentration of around 19  $\mu\text{g}/\text{m}^3$ , making it one of the cleanest cities in the analysis.

### About PM2.5:

- PM2.5 (Particulate Matter smaller than 2.5 micrometres) refers to extremely fine particles suspended in the air. These particles can penetrate deep into the lungs and even enter the bloodstream.
- Exposure to PM2.5 is linked to respiratory diseases, cardiovascular problems, and premature deaths, making it one of the most dangerous air pollutants.

### Policy Implications:

- The findings highlight the need for stronger air pollution control policies in India. Experts suggest improving the implementation of the National Clean Air Programme (NCAP), enforcing stricter emission standards for industries and vehicles, and adopting a regional "airshed-based" approach to tackle pollution across state boundaries.

### Conclusion:

The CREA report demonstrates that air pollution remains a major environmental and public health challenge in India. With over 85% of monitored cities failing to meet air quality standards, urgent policy action, better monitoring systems, and coordinated efforts among states are necessary to improve air quality and protect public health.

## Nearly Half of World's Migratory Wildlife in Decline

### Context:

A recent interim update of the “State of the World’s Migratory Species states that nearly half of the migratory species protected under a UN treaty are experiencing population decline. The findings come ahead of the CMS COP15 meeting scheduled in Campo Grande, Brazil, from 23–29 March 2026.

### Key Findings of the Report:

- **Nearly Half of Migratory Species Are Declining:** The report presents alarming statistics about the status of migratory wildlife globally. Around 49% of migratory species populations are declining, while 24% of species are currently threatened with extinction. Out of 1,189 species listed under the treaty, nearly 582 species are experiencing population decline.
- **Multiple Species Groups Affected:** The decline in migratory wildlife affects a wide range of species across ecosystems. These include birds, which are impacted by habitat loss and disease outbreaks; ungulates or hoofed animals such as wildebeest; freshwater fish; and marine species like sharks, rays and sea turtles.
- **Growing Extinction Risks:** The interim report highlights that 26 migratory species have moved to higher extinction-risk categories on the IUCN Red List. Among these, 18 are migratory shorebirds, indicating serious threats to coastal and wetland ecosystems.
- However, some species have shown improvement due to conservation efforts, including the Saiga Antelope, Scimitar-horned Oryx, and Mediterranean Monk Seal, demonstrating that targeted conservation measures can produce positive outcomes.

### Major Threats to Migratory Species:

- **Habitat Loss and Fragmentation:** Habitat destruction remains one of the most serious threats to migratory wildlife. Rapid urban expansion, coastal development, and wetland degradation can disrupt migratory pathways and reduce available habitats.
- **Overexploitation:** Excessive hunting, fishing,

and wildlife trade significantly reduce populations of migratory animals and increase their vulnerability to extinction.

- **Infrastructure Barriers:** Large-scale infrastructure such as railways, roads, fences, and pipelines can block traditional migration routes, particularly for ungulates in regions such as Central Asia.
- **Disease Outbreaks:** The spread of Highly Pathogenic Avian Influenza (H5N1) has caused mass mortality events among migratory birds and some marine mammals, adding further pressure on already vulnerable populations.

### The Convention on Migratory Species (CMS):

- The report is prepared under the Convention on the Conservation of Migratory Species of Wild Animals (CMS). Adopted in 1979 under the United Nations Environment Programme (UNEP), CMS is a legally binding international treaty aimed at conserving migratory animals and their habitats across national borders.
- **Two Key Appendices:**
  - » Appendix I includes endangered migratory species and requires strict protection, including habitat restoration and prohibition of hunting.
  - » Appendix II includes species that require international cooperation for conservation.

### Significance for Biodiversity Conservation:

- **Early Warning Indicators:** Migratory species act as bioindicators, reflecting changes in ecosystem health and environmental conditions.
- **Ecosystem Balance:** They play a vital role in maintaining ecological processes such as pollination, nutrient transport, and food-chain stability.
- **Need for International Cooperation:** Because migratory species cross national boundaries, global cooperation and coordinated conservation policies are essential for their

survival.

### Conclusion:

The interim update of the State of the World's Migratory Species report highlights an emerging biodiversity crisis. With nearly half of migratory species declining and many facing extinction risks, urgent global action is required. Strengthening international cooperation under CMS, protecting habitats, and addressing human-induced threats will be crucial for ensuring the long-term survival of migratory wildlife and maintaining global ecological balance.

## Acceleration of Global Warming

### Context:

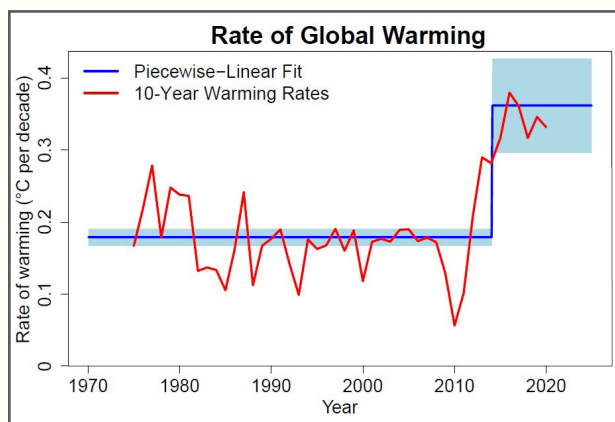
A recent study published in Geophysical Research Letters has confirmed that global warming is accelerating significantly. The new research provides the first statistically significant evidence that the pace of global warming has increased since around 2015.

### Key Findings of the Study:

- **Faster Rate of Temperature Rise:** The study found that the rate of warming has nearly doubled in the last decade.
  - **1970–2015:** ~0.2°C increase per decade
  - **2015–2025:** ~0.35°C increase per decade
- » This represents the fastest warming trend observed since global temperature records began in 1880.
- **Scientific Methodology:** Scientists analysed multiple global temperature datasets and filtered out natural climate influences such as:
  - El Niño events
  - Volcanic eruptions
  - Solar radiation fluctuations
- » By removing these short-term variations, researchers were able to detect the

underlying long-term warming trend more clearly.

- **Evidence of Acceleration:** The findings indicate a statistically significant acceleration of global warming since around 2015, providing stronger evidence that the warming trend is not merely linear but increasing in intensity.



### Drivers of Accelerating Global Warming:

- **Rising Greenhouse Gas Emissions:** The primary driver of climate change remains human-induced greenhouse gas emissions, particularly from:
  - Burning fossil fuels (coal, oil, natural gas)
  - Industrial processes
  - Deforestation
- » These emissions trap heat in the atmosphere, increasing Earth's average temperature.
- **Declining Cooling Effects of Aerosols:** Air pollution particles (aerosols) previously reflected sunlight and had a temporary cooling effect. As countries reduce pollution for health reasons, this masking effect has decreased, revealing more warming.
- **Weakening Natural Carbon Sinks:** Forests and oceans that absorb carbon dioxide are becoming less effective due to droughts, fires, and ecosystem stress, contributing to faster warming.

### Implications for Climate Goals:

- **Paris Agreement Target at Risk:** If the current trend continues, the world could cross the 1.5°C global warming threshold before 2030, earlier than previously expected.
- **Increasing Climate Risks:** Accelerated warming increases the likelihood of:
  - Extreme heatwaves
  - Intense storms and floods
  - Droughts and wildfires
  - Rapid melting of glaciers and polar ice
- » These impacts threaten ecosystems, food security, and human livelihoods worldwide.

### Conclusion:

The latest scientific evidence indicates that global warming has entered a phase of rapid acceleration, largely driven by human activities. The findings underscore the urgency of rapid emission reductions, expansion of renewable energy, and stronger international climate cooperation. Without decisive action, the accelerating warming trend could push the planet closer to irreversible climate tipping points.

## First Comprehensive Checklist of Fireflies in India Records 92 Species

### Context:

Recently, Researchers have compiled the first-of-its-kind checklist of fireflies in India, bringing together more than 260 years of scattered scientific records (1881–2025). The study was published on 10 March 2026 in the journal *Zootaxa* and provides a consolidated overview of India's firefly diversity.

### Key Findings of the Study:

- The checklist documents 92 species of fireflies belonging to 27 genera found in India.
- More than 60% of these species are endemic, meaning they are found only in India.

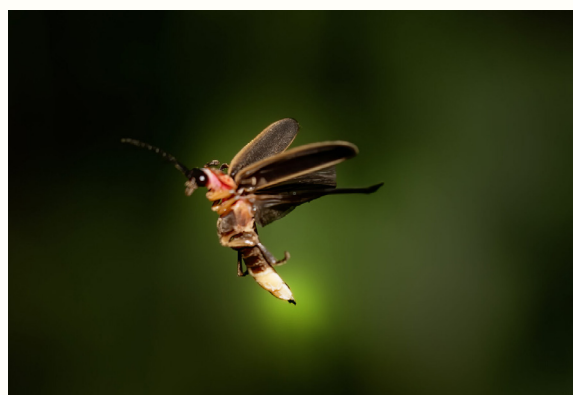
- The research was based on an extensive literature survey spanning over a century, consolidating records scattered across scientific publications and databases.

### Subfamily Distribution:

- The species belong to four major subfamilies of the beetle family Lampyridae:
  - » **Luciolineae** – 37 species (largest group)
  - » **Ototretinae** – 31 species
  - » **Lampyrinae** – 17 species
  - » **Cyphonocerinae** – 1 species

### Significance of the Checklist:

- **Filling Knowledge Gaps:** Many firefly species in India were described in the 19th century and had not been re-examined in modern taxonomy. This checklist provides a baseline database for researchers.
- **Foundation for Future Research:** The compiled data helps scientists:
  - » Identify species accurately
  - » Detect new or previously unrecorded species
  - » Conduct ecological and behavioural studies.
- **Support for Conservation:** Fireflies are sensitive to environmental changes, especially:
  - » Light pollution
  - » Habitat loss
  - » Urbanisation
  - » Understanding their distribution is essential for biodiversity conservation and ecosystem monitoring.



## About Fireflies:

- **Scientific family:** Lampyridae
- **Order:** Coleoptera (beetles)
- Known for bioluminescence, where light is produced through a chemical reaction involving luciferin, oxygen, and the enzyme luciferase.
- Fireflies use this light primarily for communication and mating signals.

## Threats to Fireflies:

- Firefly populations are declining globally due to:
  - » Light pollution – interferes with mating signals
  - » Urbanisation and habitat loss
  - » Pesticide use
  - » Wetland degradation

## Importance of Fireflies:

- Bioindicators of ecosystem health
- Important for ecological research on communication and behaviour
- Support eco-tourism (e.g., firefly festivals)
- Help promote biodiversity conservation awareness

## Discovery of Rare Marine Amphipod *Stenothoe lowryi*

### Context:

Recently, marine researchers from Berhampur University (Odisha) discovered a rare marine amphipod species named *Stenothoe lowryi* in Indian waters for the first time. The species was found at Arjyapalli Beach in Ganjam district of Odisha during a coastal biodiversity survey. This discovery is significant because the species had previously been recorded only in Malaysia, and its distribution elsewhere was unknown.

### About *Stenothoe lowryi*:

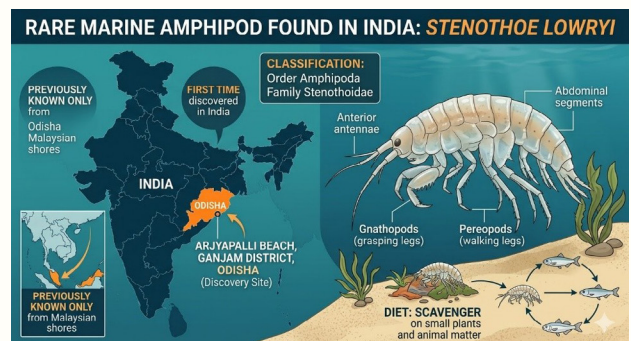
- *Stenothoe lowryi* is a rare marine amphipod, a shrimp-like crustacean belonging to the family Stenothoidae under the order Amphipoda. Amphipods are small

invertebrates related to crabs, lobsters, and shrimps.

- Key features of the species include:
  - » **Size:** Approximately 5.5 mm in length
  - » **Habitat:** Rocky intertidal coastal environments
  - » **Distinct feature:** Large claws (gnathopods) used for gripping surfaces and feeding
  - » **Distribution:** Previously known only from Malaysian waters before being found in India
- Amphipods are widely distributed across oceans, freshwater systems, beaches, caves, and moist habitats around the world.

### Ecological Importance:

- Although the exact ecological role of *Stenothoe lowryi* is still under study, amphipods generally play an important role in marine ecosystems.
- They often act as detritivores and scavengers, feeding on organic matter and helping recycle nutrients in marine environments.
- They also serve as an important link in the marine food web, providing food for larger organisms such as fish and other marine invertebrates.



### Other Amphipod Discoveries in Odisha:

- The same research team has earlier discovered several new amphipod species from Odisha's coastal ecosystems. These include:
  - » *Grandidierella geetanjalae* discovered from Chilika Lagoon near Rambha.
  - » *Parhyale odian* discovered in Chilika Lake at Barkul in 2022.

- These discoveries demonstrate the rich marine biodiversity of Odisha's coastline and the importance of scientific exploration in documenting new species.

### Significance for Biodiversity Conservation:

- The discovery of *Stenothoe lowryi* has several implications:
  - » Expands the known geographical distribution of the species.
  - » Enhances understanding of marine biodiversity in the Bay of Bengal.
  - » Highlights the importance of coastal ecosystem research and conservation.
  - » Shows that many marine organisms along India's coastline remain scientifically unexplored.

### Conclusion:

The identification of *Stenothoe lowryi* in Indian waters marks an important milestone in marine biodiversity research. It demonstrates the ecological richness of India's coastal regions and underscores the need for continued scientific studies and conservation of marine ecosystems. Such discoveries contribute to a deeper understanding of marine life, ecological balance, and biodiversity conservation in the Indian Ocean region.

## 200 Million Year Old Two-Legged Reptile Discovery in United States

### Context:

Scientists have recently identified a new ancient reptile species named *Sonselasuchus cedrus*, which lived around 225–201 million years ago during the Late Triassic period. Fossils of this reptile were discovered in Petrified Forest National Park, a region famous for its rich fossil deposits in the United States. This finding is important because it sheds light on the evolutionary diversity of reptiles that lived alongside early dinosaurs and provides new insights into the evolutionary history of

crocodile-line reptiles.

### Unique Physical Characteristics:

- Researchers have identified several distinctive features of *Sonselasuchus cedrus*:
  - » **Height:** Around 25 inches (about 63 cm) tall.
  - » **Bipedal locomotion:** Adults walked on two legs.
  - » **Toothless beak:** Instead of teeth, the animal likely had a sharp beak.
  - » **Large eye sockets:** Suggesting good vision.
  - » **Hollow bones:** A trait commonly seen in bird-like dinosaurs.
- Scientists believe these reptiles began life walking on four legs, but as they matured, their hind limbs grew stronger, allowing them to walk on two legs.

### Classification and Evolutionary Significance:

- *Sonselasuchus cedrus* belongs to a group of reptiles called shuvosaurids, which are part of the Archosauria lineage—a group that includes modern birds and crocodiles as well as many extinct reptiles.
- Interestingly, although shuvosaurids were related to crocodylian ancestors, they had a bird-like body structure similar to ostrich-like dinosaurs known as Ornithomimids. These similarities are considered an example of Convergent Evolution, where unrelated organisms develop similar traits because they adapt to similar ecological roles.

### About the Late Triassic Period:

- The Late Triassic period (about 237–201 million years ago) was a crucial stage in Earth's evolutionary history. During this time:
  - » Early dinosaurs began to diversify.
  - » Many archosaurs evolved different body forms.
  - » Ecosystems were dominated by reptiles before the rise of dinosaurs.
- The discovery of *Sonselasuchus cedrus* shows that crocodile-line reptiles

experimented with diverse body plans, including bipedal locomotion.



### Scientific Significance:

- This discovery has several important implications:
  - » **Understanding reptile evolution:** It reveals unexpected diversity in crocodile-line archosaurs.
  - » **Evidence of convergent evolution:** Traits similar to dinosaur species evolved independently in different reptile groups.
  - » **Insights into Triassic ecosystems:** It shows that multiple reptile lineages adapted to similar ecological niches.

### Conclusion:

The discovery of *Sonselasuchus cedrus* provides valuable evidence about the complex evolutionary history of archosaurs during the Triassic period. It highlights how ancient reptile groups developed unique adaptations such as bipedalism and toothless beaks—traits often associated with dinosaurs. Such findings enhance our understanding of prehistoric ecosystems and demonstrate that many evolutionary experiments occurred long before the dominance of dinosaurs.

## An Emerging Cryospheric Threat in the Himalaya

### Context:

A recent study by scientists from the Indian Space Research Organisation, published in

the journal NPJ Natural Hazards, has revealed that exposed ice patches on melting Himalayan glaciers may pose a greater disaster risk than previously understood.

### About the study:

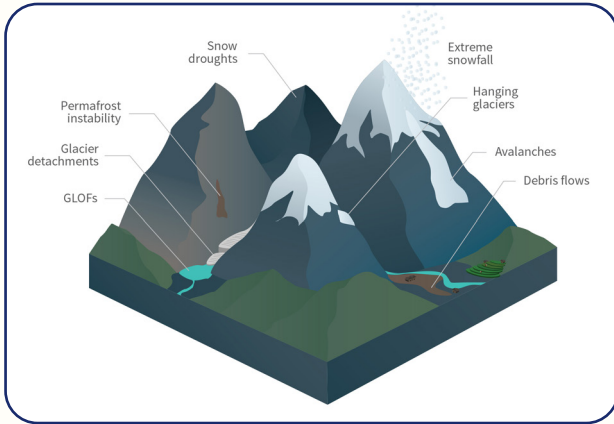
- The study examined the August 5, 2025 flash flood in Dharali village in Uttarakhand, which caused severe destruction and loss of lives, and identified the collapse of an ice patch on the Srikanta Glacier as the primary trigger of the event.

### The Dharali Flash Flood and Its Cause:

- Initially, the disaster in Dharali was attributed to a cloudburst or heavy rainfall. However, satellite data and terrain analysis revealed that the flood was triggered when a large exposed ice patch collapsed in the nivation zone of the glacier, releasing ice, meltwater and debris into the Khir Gad stream, which flows into the Bhagirathi River.
- The collapsing ice mass, estimated at around 69 million kilograms descended rapidly from an altitude above 5,000 metres, generating a high-velocity debris flow that devastated downstream settlements.

### About Ice Patches:

- Ice patches are masses of glacial ice that remain preserved beneath layers of seasonal snow and firn (partially compacted snow). Normally, this snow cover acts as an insulating layer that stabilizes the ice.
- However, due to rising temperatures and glacier retreat (deglaciation), these protective layers are thinning, exposing underlying ice patches. Once exposed, the ice becomes more sensitive to temperature fluctuations, rainfall and freeze-thaw cycles. This makes it prone to melting, fragmentation or sudden collapse, which can release water and debris and trigger flash floods.



- the Himalayan region
- » Strengthening disaster preparedness in vulnerable mountain communities

**Conclusion:**

The Dharali flash flood illustrates how subtle changes in the cryosphere can trigger major downstream disasters. The identification of exposed ice patches as a new hazard indicator underscores the need for improved glacier monitoring and climate-resilient disaster management strategies in the fragile Himalayan ecosystem.

**Significance of Satellite Monitoring:**

- A major implication of the research is the importance of satellite-based glacier monitoring. Scientists used multi-temporal satellite imagery, digital elevation models and field observations to detect exposed ice patches weeks before the flood occurred. Such observations can act as early warning signals for potential disasters in remote Himalayan regions.

**Broader Implications:**

- The findings highlight a broader challenge associated with climate change and glacier retreat. Traditionally, glacial hazards in the Himalaya have focused on Glacial Lake Outburst Floods (GLOFs). However, the Dharali event demonstrates that smaller and less visible instabilities, such as collapsing ice patches can also trigger catastrophic floods.
- As glaciers continue to shrink due to global warming, such cryo-hydrological hazards may become more frequent across the Himalayan region.

**Way Forward:**

- To reduce future disaster risks, experts recommend:
  - » Continuous satellite monitoring of glaciers and nivation zones
  - » Development of early-warning systems for cryospheric hazards
  - » Integrated glacier hazard mapping in

**Cauvery Basin to Face Water Decline: Study Warns of Dry Spell by 2050**

**Context:**

A study by IIT Gandhinagar published in Earth’s Future warns that the Cauvery River basin may witness a 3.5% decline in water availability between 2026 and 2050, even as most Indian rivers are expected to see increased flows due to climate change.

**About Cauvery Basin:**

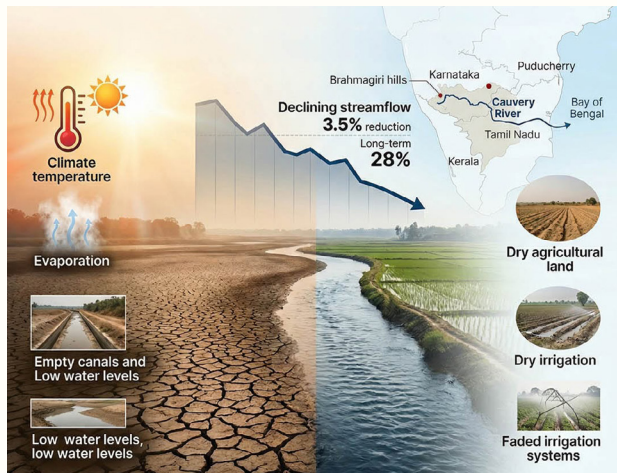
- The Cauvery basin is one of the most important river basins in southern India, originating at Talakaveri in the Western Ghats and flowing through Karnataka, Tamil Nadu, and parts of Kerala before draining into the Bay of Bengal.
  - » **Basin area:** ~81,155 sq km
  - » **Major tributaries:** Hemavati, Kabini, Bhavani, Amaravati
  - » **Key dams:** Krishnarajasagar Dam and Mettur Dam
  - » Supports irrigation, drinking water, and hydropower
  - » Forms the fertile Cauvery delta, known as the “rice bowl” of Tamil Nadu

**Key Findings of the Study:**

- The study notes a historical decline of 28% in streamflow (1951–2012) and projects

further reduction despite rising rainfall trends nationally.

- Using constrained climate models under CMIP6, researchers found that while rivers like the Ganga River may experience increased flows, the Cauvery basin will likely face water shortages in the near and mid-term.



### Implications for India:

- The findings have serious implications for water security and inter-state relations. The Cauvery river has a long history of disputes between Karnataka and Tamil Nadu, leading to the establishment of the Cauvery Water Disputes Tribunal and the Supreme Court of India verdict in 2018, which allocated water shares. Declining water availability could intensify such conflicts, especially during drought years.
- Further, the basin supports agriculture, drinking water supply, and livelihoods in southern India. Reduced flows may impact crop productivity, urban water supply (e.g., Bengaluru), and ecological balance.
- The study also revives discussions on river interlinking projects, such as the proposed Godavari-Cauvery Link Project, though such solutions remain debated due to ecological and economic concerns.

### Challenges Highlighted in Study:

- Regional disparity in climate impacts

- Uncertainty in rainfall projections
- Increasing demand for limited water resources
- Existing interstate disputes and governance issues

### Way Forward:

India must adopt a multi-pronged strategy to address emerging water stress in the Cauvery basin. This includes improving water-use efficiency in agriculture, promoting rainwater harvesting, strengthening basin-level water governance, and enhancing climate-resilient infrastructure. Additionally, scientific advancements in climate modelling and data-driven policymaking are crucial for better planning.

### Conclusion:

The projected decline in the Cauvery basin’s water availability underscores the uneven impacts of climate change across regions. It highlights the urgent need for cooperative federalism, sustainable water management, and climate adaptation strategies to ensure long-term water security and prevent future conflicts.

## India’s New Climate Targets 2035

### Context:

Recently, the Government of India approved the update of its Nationally Determined Contributions (NDC) for the period 2031–2035. This step further strengthens India’s international commitments under the Paris Agreement and marks an important milestone toward achieving the vision of ‘net-zero’ emissions by 2070.

### Key Updated Targets (By 2035):

India’s revised NDC focuses on three major pillars, balancing the country’s energy security with environmental sustainability:

- Non-fossil fuel-based capacity:** India has set

a target to derive 60% of its total installed electricity capacity from non-fossil sources (solar, wind, hydropower, nuclear, and bio-energy) by 2035. This is a significant increase from the earlier target of 50% by 2030. Notably, India achieved its previous 2030 target five years ahead of schedule, in 2025.

- **Reduction in emission intensity:** India has pledged to reduce the emissions intensity of its GDP by 47% compared to 2005 levels.
- This reflects India’s leadership in decoupling economic growth from carbon emissions at the global level.
- **Expansion of carbon sink:** The target for creating additional carbon sinks through forest and tree cover has been increased to 3.5–4 billion tonnes of CO<sub>2</sub> equivalent. This highlights India’s growing emphasis on ecosystem restoration and large-scale afforestation.

households.

- » **National Green Hydrogen Mission:** To make India a global hub for green hydrogen.
- » **Energy Storage Mission:** Focus on battery storage and pumped hydro projects to address the intermittency of solar and wind energy.
- » **Expansion of Nuclear Energy:** Increasing nuclear capacity to ensure a stable ‘base load’ of clean energy.

**Challenges:**


- **Gap between capacity and generation:** While India has increased its non-fossil capacity target to 60%, coal still accounts for 70–75% of actual electricity generation. Renewable energy (solar/wind) is not always available, leading to continued dependence on coal for base load requirements.
- **Grid stability and storage:** The intermittency of renewable energy makes grid management difficult. This necessitates large-scale battery storage (BESS) and pumped hydro projects, which are currently quite expensive.
- **Financial constraints:** Achieving the 2035 targets will require substantial investment. Climate finance from developed countries remains significantly below expectations.

**Conclusion:**

India’s new targets submitted to the UNFCCC not only reflect its commitment to climate justice but also align the vision of “Developed India @2047” with green growth. Despite being a developing country, this step by India will increase pressure on developed nations to fulfill their historical responsibilities and provide adequate climate finance to developing countries.


**India’s 2035 Green Blueprint: Growth Without Carbon**

India’s success depends on transforming development into an opportunity for sustainable leadership.




**47% Reduction in Emission Intensity**

India has committed to this significant reduction target by 2035 as part of its enhanced climate contributions.




**60% Non-Fossil Power Capacity**

The nation aims for over half of its power capacity to come from non-fossil sources within the next decade.




**Already Exceeding Early Climate Benchmarks**


Strong policy momentum has allowed India to outpace its initial non-fossil capacity targets.




Balance required to ensure growth does not counteract climate mitigation efforts.



**Sustainability Goals**



**Infrastructure Expansion (e.g., UDAN 2.0)**



**Aligning Growth with Green Tech**

Future success requires synchronizing development with innovations like electric aviation and energy storage.

**Key Government Initiatives for Implementation:**

- To achieve these ambitious targets, the government has launched several mission-mode projects:
  - » **PM Surya Ghar:** Muft Bijli Yojana: Aims to install rooftop solar panels in 1 crore

**Euthalia Zubeengargi: New Butterfly Species Found in Arunachal Pradesh**

**Context:**

Recently, researchers discovered a rare and new species of butterfly in the Basar region of Lepa Rada district in Arunachal Pradesh. This species has been scientifically named 'Euthalia zubeengargi' in tribute to Assam's renowned singer and nature enthusiast Zubeen Garg. The discovery has been published in the scientific journal Entomon.

### Classification and Features:

- **Scientific Name:** Euthalia zubeengargi (Common name: Basar Duke).
- **Physical Structure:** It belongs to the 'duke' group of butterflies. Its wings are deep olive-brown, with distinctive white spots and markings.
- **Sexual Dimorphism:** This species exhibits clear differences in coloration and pattern between males and females.
- **Behavior:** These butterflies are known for mud-puddling, where they obtain essential minerals and nutrients from moist soil or stream edges.
- **Significance of Discovery:** The discovery of Euthalia zubeengargi highlights that the Eastern Himalayan region continues to host many undocumented species, emphasizing the urgent need for scientific exploration and biodiversity documentation.

### Challenges:

- **Habitat Loss:** Practices such as shifting cultivation (Jhum cultivation) and infrastructure development (especially road construction) are fragmenting the natural habitats of these butterflies.
- **Climate Change:** Even slight variations in temperature can disrupt their reproductive cycles and threaten their survival.
- **Taxonomic Gaps:** Many micro-species of butterflies remain unidentified, making it difficult to formulate targeted conservation policies.

### Arunachal Pradesh: A Biodiversity Hotspot

- Arunachal Pradesh is recognized as a biodiversity hotspot in India.
  - » **Butterfly Diversity:** Nearly 50% of India's

butterfly species are found in Northeast India, particularly in Arunachal Pradesh.

- » **State Butterfly:** Recently, the state declared Kaiser-i-Hind as its state butterfly, marking a significant step toward conservation awareness.



### Conclusion:

This discovery is not merely the identification of a new species but also an opportunity to promote eco-tourism and strengthen local conservation efforts. Naming the species after a cultural icon like Zubeen Garg fosters an emotional connection among the public toward environmental conservation. Overall, the discovery reinforces the ecological significance of the Eastern Himalayas and underscores the need for sustained research and conservation initiatives.

## Aghanashini-Vedavathi River-Linking Project

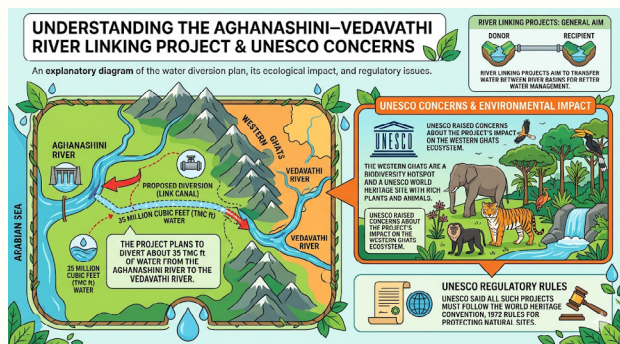
### Context:

The UNESCO has recently raised concerns regarding India's proposed Aghanashini-Vedavathi river-linking project in Karnataka. The organization has urged India to strictly adhere to World Heritage conservation norms, as

the project could potentially impact ecologically sensitive regions, including areas associated with the Western Ghats World Heritage Site.

### About the Aghanashini-Vedavathi River-Linking Project:

- The project proposes to divert approximately 35 TMC ft of water from the Aghanashini River to the Vedavathi River. Its primary objectives include drought mitigation and improving irrigation and drinking water supply in water-scarce regions. The initiative forms part of India’s broader river interlinking programme aimed at optimizing water distribution across regions.
- The Aghanashini River is considered a pristine, free-flowing river known for its rich estuarine ecosystems and minimal human interference. In contrast, the Vedavathi River, a tributary of the Krishna River, flows through drought-prone areas and faces seasonal water shortages. Importantly, the project region overlaps with the Western Ghats, which significantly raises ecological concerns.



### UNESCO’s Observations:

- UNESCO has emphasized strict compliance with the World Heritage Convention, highlighting that development projects must follow sustainable practices and avoid disturbing ecological balance. It reiterated that member states bear the responsibility of protecting heritage sites.
- The organization also expressed concern about ecologically fragile areas such as the

Western Ghats, one of the world’s most important biodiversity hotspots. It stressed that any intervention must not adversely affect natural hydrology or essential ecosystem services.

### Significance of the Observations:

- The observations have major implications for India, particularly in balancing development needs with environmental conservation. They bring attention to the persistent conflict between infrastructure expansion and ecological sustainability, especially in sensitive regions.
- UNESCO’s intervention reflects growing international scrutiny of environmental governance. It also underscores the need for robust Environmental Impact Assessments (EIA) and sustainable river basin planning to ensure that development does not compromise ecological integrity.

### About UNESCO:

- UNESCO was established in 1945 and is headquartered in Paris, France. Its core objective is to promote education, science, culture and communication while fostering peace through international cooperation.

### World Heritage Convention, 1972:

- Adopted on 16 November 1972 in Paris and enforced in 1975, this international treaty aims to protect cultural and natural heritage of “Outstanding Universal Value (OUV).” It has nearly universal membership with around 196 countries.

### World Heritage Committee:

- Constituted under UNESCO, the committee consists of 21 member countries. It selects World Heritage Sites, monitors conservation efforts, and provides financial and technical assistance.

### India & World Heritage Convention:

- India ratified the convention in 1977 and hosts several cultural and natural heritage sites, including the Taj Mahal and the

Western Ghats.

### Conclusion:

UNESCO's advisory on the Aghanashini-Vedavathi project highlights the importance of aligning development initiatives with global conservation standards. It serves as a crucial example for India in addressing the challenge of balancing economic growth with the preservation of ecologically fragile regions like the Western Ghats, reinforcing the need for sustainable and responsible development.

## Jungle Cat (*Felis chaus*) Survival Crisis: Conservation Challenges & Solutions

### Context:

Recently, wildlife experts and researchers have expressed concern over the status of the Jungle Cat. According to research of the University of Illinois, its classification as 'Least Concern' on the IUCN Red List has created a misconception that the species is secure. In reality, its population is continuously declining.

### Jungle Cat: Key Features

- The Jungle Cat, scientifically known as *Felis chaus*, is one of the most widespread small cat species found in India.
  - » **Habitat:** It is not restricted to forests; it adapts well to grasslands, wetlands, and even arid regions.
  - » **Distribution:** It is found across Asia, with a significant population in India and Nepal.
  - » **Behavior:** It is highly agile and primarily preys on small mammals, birds, and occasionally reptiles.

### Conservation Status and Legal Protection:

- India has strict wildlife protection laws, under which the Jungle Cat is also protected:
  - » **Wildlife (Protection) Act, 1972:** It is listed under Schedule II, making hunting or trade completely illegal and punishable

by strict penalties.

- » **IUCN Red List:** Currently categorized as 'Least Concern'.
- » **CITES:** Listed under Appendix II.

### Major Challenges:

Despite being the most common small cat in India, the Jungle Cat faces several serious threats:

- **Habitat Loss:** The natural habitats of the Jungle Cat, such as wetlands, grasslands, and scrublands, are rapidly being destroyed due to urbanization, industrialization, and agricultural expansion, leading to shrinking living and hunting areas.
- **Scientific Neglect:** Conservation efforts tend to prioritize large charismatic species like tigers and leopards, resulting in inadequate research and policy focus on small cats, thereby overlooking their actual status.
- **Human-Wildlife Conflict:** In rural areas, Jungle Cats are often considered pests because they prey on poultry and small livestock, leading to their killing and a decline in their population.
- **Road Accidents and Habitat Fragmentation:** The rapid expansion of road networks and highways is fragmenting their habitats, hindering movement and increasing mortality due to road accidents.



### Way Forward:

For effective conservation of this species, it is essential to accurately map their habitats to better understand their actual distribution and status. At the same time, raising awareness among local communities about their ecological importance, such as their role in controlling rodent populations is crucial to ensure public participation in conservation. Policymakers must go beyond the 'Least Concern' tag and develop dedicated funds and conservation programs to strengthen long-term conservation efforts.

**Conclusion:**

The declining population of the Jungle Cat highlights that mere 'wide distribution' does not guarantee species security. Despite being categorized as 'Least Concern', it faces serious threats, underscoring the need to strengthen conservation efforts, scientific research, and policy prioritization for small carnivores.

**World Air Quality Report 2025**

**Context:**

According to the recently published World Air Quality Report 2025, India is the sixth most polluted country in the world, even though its PM2.5 levels have declined to a three-year low. This reflects a mixed trend where, on one side, air quality indicators are improving, while on the other side, pollution levels still remain significantly high.

**About the Report:**

- This report is released annually by IQAir, a Switzerland-based air purification technology company.
- It provides a comprehensive global assessment of air quality based on PM2.5 particulate matter.
- The 2025 edition includes more countries, particularly those where pollution had previously not been monitored.
- Its coverage has expanded from 134 countries (7,812 cities) in 2023 to 143

countries (9,446 cities) in 2025, making it one of the most extensive global datasets on air pollution.

**Key Findings:**

- **India's Air Quality Trends:**
  - » India's population-weighted average PM2.5 level in 2025 stood at 48.9 µg/m³. This represents a 3% decline from 2024 (50.6 µg/m³) and a 10% decline from 2023 (54.4 µg/m³). However, despite this improvement, the levels remain significantly above safe limits.
- **Global Ranking Position:**
  - » In 2025, India ranks sixth, while the top three most polluted countries are Pakistan (67.3 µg/m³), Bangladesh (66.1 µg/m³), and Tajikistan (57.3 µg/m³).
  - » India's ranking was third in 2023, fifth in 2024, and sixth in 2025.



- **Urban Pollution Scenario:**
  - » New Delhi recorded a PM2.5 level of 82.2 µg/m³ in 2025, which is the lowest in three years and 8% lower than in 2024. However, it remains the most polluted capital city in the world.
  - » Loni (Ghaziabad, Uttar Pradesh) was the most polluted city in India in 2025.
- **Previous trends:**

- » **2023:** Begusarai (Bihar) was the most polluted city in the world
- » **2024:** Byrnihat (Assam–Meghalaya border) topped the list
- **India's Share in Global Pollution:**
  - » In 2024, 74 out of the world's 100 most polluted cities were in India, showing an improvement from 83 in 2023.
  - » According to the 2025 report, 17 out of the world's 20 most polluted cities are located in the Central and South Asia region, with the majority in India and Pakistan.

### India's Air Pollution Management System:

- **Policy and Monitoring Challenges:**
  - » According to the report, India's primary focus has been on PM10, whereas PM2.5 is more harmful.
  - » Weak enforcement of emission norms for vehicles and industries continues to impact air quality.
  - » Relaxation in sulfur emission standards for coal-based power plants may also contribute to increased pollution.
- **Evaluation of National Clean Air Programme (NCAP):**
  - » Under the National Clean Air Programme:
    - 64% of funds have been allocated to road dust control (such as water sprinkling and sweeping)
    - 15% to biomass burning
    - 13% to vehicular emissions
    - Only 1% to industrial pollution
  - » This indicates a disproportionate emphasis on dust control, while major pollution sources receive relatively less priority.

### Conclusion:

The World Air Quality Report 2025 presents a balanced picture of India's air quality. While there are signs of improvement in PM2.5 levels, structural challenges such as weak enforcement, skewed policy priorities, and urban pollution still persist. India needs to strengthen its regulatory framework, prioritize

major pollution sources, and align its policies with global standards to achieve long-term improvement.

## Solid Waste Management (SWM) Rules, 2026

### Context:

Recently, the Ministry of Environment, Forest and Climate Change (MoEFCC) has notified the 'Solid Waste Management Rules, 2026'. These rules will come into effect from April 1, 2026, and will replace the existing Solid Waste Management (SWM) Rules, 2016 framework. This step marks a significant shift towards strengthening India's commitment to 'Zero Waste' and a 'Circular Economy'.

### Key Features of SWM Rules, 2026:

- **New Segregation Model:** Earlier rules categorized waste into three types, but under the 2026 rules, it will now be mandatory to segregate waste into four categories:
  - » Wet waste (Bio-degradable)
  - » Dry waste (Non-biodegradable/Recyclable)
  - » Sanitary waste
  - » Special care waste
  - » This multi-level segregation will help in scientific waste management, improve recycling efficiency, and reduce dependence on landfills.
- **Digital Monitoring and Central Portal:** To ensure accountability, the Central Pollution Control Board (CPCB) will launch a centralized online portal. The entire process, from waste generation to its final disposal, will be digitally tracked. Real-time data monitoring will replace manual reporting.
- **Extended Bulk Waste Generator Responsibility (EBWGR):** Entities generating more than 100 kg of waste per day or occupying an area larger than 20,000 square meters will be classified as 'bulk waste generators'. They will be required to process wet waste within their premises or fulfill their responsibility

through EBWGR certificates.

- **Strict Restrictions on Landfills:** The new rules restrict the use of landfills only to 'inert' and non-recyclable waste. The target is to reduce waste going to landfills by up to 80% by 2030. This reflects a transition from a 'dumping-based model' to a 'processing-based model'.
- **Industrial Responsibility and Refuse Derived Fuel (RDF):** Industries such as cement and power will be mandated to use Refuse Derived Fuel (RDF). Over the next six years, industries must replace 15% of their fossil fuel consumption with RDF.

segregation at source, which remains limited.

- **Financial and Administrative Constraints:**
  - » Urban Local Bodies (ULBs) have limited financial resources
  - » Gap between policy formulation and implementation
- **Integration of Informal Sector:** In India, rag pickers form a large informal network, which still needs to be integrated into the formal system.
- **Technological and Data Gaps:** Ensuring data quality and technological capability will be crucial for the success of the digital portal.

**Conclusion:**

The Solid Waste Management Rules, 2026 are not merely about cleanliness but are also a part of India's fight against climate change. With the principle of 'Waste-to-Wealth', these rules can play a significant role in achieving Sustainable Development Goals (SDG 11 and 12). Effective implementation will require better coordination among the central, state, and local governments.

**Radiative Forcing-based Accounting (RFA)**

**Context:**

A recent study published in the journal Environmental Research Letters has questioned the traditional framework of climate policy that evaluates all greenhouse gases (GHGs) using a single metric. The study proposes a new framework called Radiative Forcing-based Accounting (RFA). Experts believe that the current Global Warming Potential (GWP) method does not accurately represent the impact of short-lived gases, leading to distortions in carbon markets. The study raises a fundamental question: "Are we even measuring climate change correctly?"

**Current Metric:**

- For decades, climate policies have used

**Challenges:**

- **Lack of Infrastructure:** Smaller urban local bodies lack adequate resources and technical capacity for four-level segregation and processing.
- **Behavioural Change Challenge:** Active public participation is essential for waste

“carbon dioxide equivalent” (CO<sub>2</sub>e). For this, the Global Warming Potential (GWP-100) is applied, which compares the warming impact of a gas over a 100-year period relative to carbon dioxide equivalent (CO<sub>2</sub>e).

- Carbon dioxide equivalent (CO<sub>2</sub>e) is a common unit used to measure the global warming impact of different greenhouse gases (such as methane, nitrous oxide).
- CO<sub>2</sub> remains in the atmosphere for centuries, whereas gases like methane dissipate in about 12 years, but they absorb much more heat compared to CO<sub>2</sub>. Methane can have approximately 80 times more warming impact than CO<sub>2</sub> over a 20-year period.
- The current calculation method underestimates the immediate impact of short-lived gases. As a result, projects that can slow warming quickly (such as methane emission reduction) receive less incentive.

### Radiative Forcing-based Accounting (RFA):

- The new study proposes an alternative measurement approach called Radiative Forcing-based Accounting (RFA). RFA is a new framework that, instead of focusing only on the quantity of gases, measures how much additional energy (heat) a gas is trapping in the Earth’s atmosphere in “real-time.” This is referred to as “radiative forcing.”

### Key Advantages of RFA:

- **Accurate Assessment:** It clearly distinguishes between the lifetime of gases and their warming intensity.
- **Correct Valuation of Carbon Credits:** Currently, projects that reduce short-lived gases receive fewer carbon credits. With the implementation of RFA, the value of such projects will increase, boosting investment in “quick-fix” solutions like methane reduction.
- **Achieving Temperature Targets:** To meet the 1.5°C target of the Paris Agreement, it is essential to curb short-term warming immediately. RFA helps policymakers

identify which emissions reductions would be most effective.

### Impact on Carbon Markets:

- Carbon markets operate on the principle of “offsetting.” If a company reduces 1 ton of methane, the credits it receives are currently based on the 100-year CO<sub>2</sub> average. RFA could transform this approach:
  - » It will promote technologies that focus on short-lived pollutants (such as hydrofluorocarbons and methane).
  - » It will help countries make their “Nationally Determined Contributions (NDCs)” strategies more scientific and effective.

### Challenges:

- Implementing RFA is not easy. Replacing the globally accepted standard (GWP-100) may create complexities in international negotiations and agreements. Additionally, it will require more advanced monitoring systems for data collection and calculation.

### Conclusion:

Time is the most critical factor in the fight against climate change. If the measurement method does not accurately reflect the real impact, policy-making can become misleading. Therefore, it is essential to incorporate scientific accuracy and time-based impacts into future climate strategies. Innovative frameworks like RFA will not only promote science-based policymaking but also make carbon markets more transparent and effective.

# Science & Technology

## HPV Vaccination Campaign in India: A Decisive Step Towards Preventive Healthcare Policy

### Context:

As a significant public health initiative, India has recently launched a nationwide vaccination campaign against the Human Papillomavirus (HPV). On 28 February 2026, Prime Minister Narendra Modi inaugurated the campaign from Ajmer, Rajasthan. Its primary objective is to prevent serious and life-threatening diseases such as cervical cancer by providing the vaccine to 14-year-old girls.

The campaign has shown remarkable progress in its initial phase. Within just two weeks, approximately 300,000 girls aged 14 have been vaccinated. States such as Madhya Pradesh, Andhra Pradesh, Tamil Nadu, Gujarat, Odisha, and Mizoram have recorded the highest vaccination coverage. This initiative is not merely a health programme but represents a significant shift in India's health policy, from a treatment-centric approach to a prevention-based strategy.

### About HPV:

- In India, cervical cancer is the second most common cancer among women. Every year, around 125,000 new cases are reported, and approximately 75,000 women die due to the disease. Globally, India accounts for nearly one-fifth of the total burden of cervical cancer. This situation is particularly concerning because cervical cancer is largely preventable through effective vaccination and timely screening.
- HPV is a common sexually transmitted infection with multiple types. In most cases, the body's immune system clears the infection within two years. However, in some cases, the infection persists and leads to abnormal cellular changes that may eventually develop into cancer. HPV types 16 and 18 are responsible for nearly 70 percent of cervical cancer cases.
- HPV does not affect only women; it can also cause genital warts, anal cancer, penile cancer, and cancers of the throat and mouth in men.
- Recent studies have also shown that one in three men above the age of 15 is infected with some form of HPV. This highlights that HPV is a widespread public health challenge and is not limited to a single gender.

### India's Vaccination Strategy:

- To address this challenge, the Government of India has planned free vaccination targeting 14-year-old girls. This age group has been chosen because most girls are not sexually active at this stage, and vaccination at this age provides more effective and long-lasting immunity.
- The government is using the 'U-WIN' digital platform for vaccination, developed on the lines of the 'Co-WIN' platform used during the COVID-19 pandemic. This platform will help ensure monitoring, registration, and transparency in the vaccination process.

- Currently, the government is using the quadrivalent ‘Gardasil’ vaccine, which provides protection against four major HPV types (6, 11, 16, and 18).
- In the future, the indigenous vaccine ‘Cervavac’, developed by the Serum Institute of India, is likely to be included. This will help reduce costs and promote self-reliance. However, studies regarding its WHO approval and single-dose effectiveness are still ongoing.

**Global Perspective and India’s Position:**

- The World Health Organization has set a target to eliminate cervical cancer as a public health problem by 2030. For this, vaccinating 90 percent of girls before the age of 15 is considered essential.
- Several developed countries such as Australia, the United Kingdom, the United States, Canada, and Germany have adopted gender-neutral HPV vaccination policies by including boys as well. Australia has been a global leader in this regard and is expected to become the first country to nearly eliminate cervical cancer by 2035. A key factor behind this success is the widespread vaccination of boys, which has significantly reduced transmission.

**Importance of Vaccination:**

- HPV vaccination is not just a health intervention but also a broader socio-economic investment.

- » **Disease Prevention:** The vaccine eliminates the root cause of infection, significantly reducing the risk of cancer. A study conducted in Sweden found that women vaccinated before the age of 17 had up to an 88 percent lower risk of cervical cancer.
- » **Economic Benefits:** Cancer treatment imposes a heavy financial burden on both families and the healthcare system. Vaccination can substantially reduce this burden.
- » **Gender Equality and Social Impact:** Improving women’s health has a direct impact on the overall development of families and society. Healthy women are more productive and contribute significantly to social progress.

The infographic provides a comprehensive overview of India's HPV vaccination campaign. It is titled 'INDIA'S HPV VACCINATION CAMPAIGN: A DECISIVE STEP TOWARDS PREVENTIVE HEALTHCARE POLICY' and was launched from Ajmer, Rajasthan by PM Narendra Modi on 28 Feb 2026. The central theme is 'INDIA'S VACCINATION STRATEGY', which includes a 'FREE VACCINATION for 14-YEAR-OLD GIRLS'. The campaign is supported by 'QUADRIVALENT GARDASIL' and the future 'INDIGENOUS CERVAVAC'. A 'DIGITAL MONITORING VIA 'U-WIN' PLATFORM' is used for implementation, with a 'REMARKABLE INITIAL PROGRESS: 300,000 GIRLS VACCINATED IN 2 WEEKS' reported in MP, Andhra Pradesh, TN, Gujarat, Odisha, and Mizoram. The infographic also highlights 'KEY CHALLENGES' such as 'AWARENESS & MYTHS', 'NEED FOR GENDER-NEUTRAL VACCINATION', 'UNCERTAINTY REGARDING INDIGENOUS VACCINE', and 'HEALTH INFRASTRUCTURE & IMPLEMENTATION'. A 'WAY FORWARD' section suggests 'PROMOTE REGULAR SCREENING', 'SCHOOL-BASED HEALTH PROGRAMS', 'CONDUCT AWARENESS CAMPAIGNS', 'ADOPT GENDER-NEUTRAL POLICY', and 'ENCOURAGE RESEARCH'. The infographic also includes a 'GLOBAL PERSPECTIVE & IMPORTANCE' section, noting that WHO targets the elimination of cervical cancer by 2030 (90% girls vaccinated before 15) and that several countries (Australia, UK, USA, Canada, Germany) have adopted gender-neutral policies. It also lists socio-economic benefits of HPV vaccination, including disease prevention, economic benefits, gender equality & social impact, and herd immunity.

- » **Herd Immunity:** When a large proportion of the population is vaccinated, the spread of infection naturally declines, indirectly protecting men and other groups as well.

**Key Challenges:**

- **Awareness and Myths:** There are many misconceptions in society regarding HPV and its vaccines. Many people associate it only with sexual behaviour, leading to

hesitation in vaccination.

- **Need for Gender-Neutral Vaccination:** The current programme focuses only on girls, whereas scientific evidence shows that men can be both carriers and victims of the infection. Therefore, in the long term, boys should also be included.
- **Uncertainty Regarding Indigenous Vaccine:** Although 'Cervavac' is a significant achievement, studies regarding its global recognition and effectiveness are still ongoing. These aspects need clarity before its widespread use.
- **Health Infrastructure and Implementation:** Limited healthcare access and low digital literacy in rural and remote areas may hinder effective implementation of the campaign.

### Way Forward:

- India must develop this initiative into a comprehensive health strategy. The following steps can be taken:
  - » Promote regular screening for cervical cancer alongside vaccination.

- » Expand outreach to adolescent girls through school-based health programmes.
- » Conduct awareness campaigns to eliminate myths and misconceptions.
- » Adopt a gender-neutral vaccination policy in the future.
- » Encourage research and development of indigenous vaccines.

### Conclusion:

The HPV vaccination campaign is a transformative initiative in India's healthcare sector, with the potential to save millions of lives. It will not only help in preventing cancer but also contribute to building a healthier and more empowered society. If implemented effectively and supported widely by the public, this initiative can enable India to safeguard the health of its citizens and set a global example of how a developing country can achieve major public health goals through visionary policies despite limited resources.

# Short Issues

## BEL ties up with Bellatrix Aerospace to develop satellite systems for VLEO operations

### Context:

Recently, India's defence public sector enterprise Bharat Electronics Limited (BEL) has signed a Memorandum of Understanding (MoU) with Bengaluru-based space-technology startup Bellatrix Aerospace to jointly design, develop, and manufacture satellite systems and payloads for Very Low Earth Orbit (VLEO) operations.

### About Very Low Earth Orbit (VLEO):

- Very Low Earth Orbit (VLEO) refers to satellites operating at altitudes

approximately between 150 km and 450 km above Earth.

- This orbit lies below conventional Low Earth Orbit (LEO) satellites, which usually operate between 500 km and 2,000 km.

### Key Characteristics:

- **Atmospheric drag:** Satellites in VLEO encounter thin atmospheric particles, which slow them down and require continuous propulsion to maintain orbit.
- **Advanced propulsion systems:** Electric or green propulsion technologies are used to counter drag and maintain station-keeping.
- **Closer proximity to Earth:** Being closer to the planet enables higher-quality observations and faster communication signals.

## Advantages of VLEO Satellite Systems:

- **High-Resolution Earth Observation:** Satellites in VLEO can capture very high-resolution images, enabling improved monitoring for:
  - » Border surveillance
  - » Disaster management
  - » Agriculture monitoring
- **Ultra-Low Communication Latency:** Shorter distance to ground stations allows faster data transmission, beneficial for:
  - » Real-time communications
  - » Defence operations
  - » Broadband satellite networks.
- **Lower Launch Costs:** Lower orbital altitude means less energy required for deployment, potentially reducing launch costs.
- **Reduced Space Debris:** VLEO orbits are sometimes called “self-cleaning orbits.” If a satellite fails, atmospheric drag causes it to re-enter and burn up quickly, minimizing long-term space debris.

## About the Organizations:

- **Bharat Electronics Limited (BEL):**
  - » A Navratna Defence Public Sector Undertaking (PSU) under the Ministry of Defence.
  - » Specializes in advanced electronics, radars, communication systems, and defence equipment.
  - » Increasingly expanding into space and satellite technologies.
- **Bellatrix Aerospace:**
  - » A Bengaluru-based deep-tech space startup founded in 2015.
  - » Focuses on satellite propulsion systems and in-orbit mobility solutions.
  - » Known for developing electric and green propulsion technologies for small satellites.

## Significance for India:

- The partnership is strategically important for India’s space ecosystem.
  - » **Boost to Aatmanirbhar Bharat in space technology:** Enhances indigenous

capabilities in satellite manufacturing and propulsion.

- » **Strengthening defence and strategic capabilities:** High-resolution surveillance satellites can support border monitoring and national security.
- » **Development of next-generation satellite technologies:** Positions India in the emerging VLEO satellite market, a rapidly growing sector globally.
- » **Public-private collaboration in space:** Reflects the growing synergy between PSUs and space startups following reforms in India’s space sector.

## Conclusion:

The collaboration between Bharat Electronics Limited and Bellatrix Aerospace marks an important step in advancing India’s capabilities in Very Low Earth Orbit satellite technology. By combining BEL’s defence electronics expertise with Bellatrix’s propulsion innovations, the partnership could help India develop cost-effective, high-performance satellite platforms for defence, communication, and Earth-observation missions.

## Use White Phosphorus in Lebanon

### Context:

Recently, Human Rights Watch (HRW) accused Israel of using white phosphorus munitions during military operations in southern Lebanon.

### About White Phosphorus:

- White phosphorus (WP) is a highly reactive, waxy, and toxic chemical substance that ignites spontaneously on contact with oxygen, producing intense heat and dense white smoke. It burns at temperatures ranging from 800°C to over 1000°C and continues burning until deprived of oxygen, making it extremely difficult to extinguish.
- White phosphorus poses severe health hazards. It causes deep chemical and

thermal burns that can penetrate to the bone, and particles embedded in the body may reignite when exposed to air.

- Exposure can also lead to multi-organ damage, affecting the liver, kidneys, and heart, while inhalation of its smoke irritates the respiratory system and eyes.
- Even small burns can become fatal due to systemic toxicity. Its use in conflict zones can also ignite fires in civilian areas, damaging infrastructure, crops, and ecosystems.



### Uses of White Phosphorus:

- **Military Uses:**
  - » Creation of smokescreens to conceal troop movement
  - » Illumination of battlefields
  - » Marking targets
  - » Used as an incendiary agent to burn infrastructure
  - » Its ability to produce dense smoke and intense heat makes it tactically significant.
- **Industrial Uses:**
  - » Production of fertilizers and phosphoric acid

- » Use in detergents, chemicals, and rodenticides

### Legal Status under International Law:

- White phosphorus itself is not completely banned under international law. It can be used for legitimate military purposes such as smoke generation or illumination.
- However, international humanitarian law restricts its use in populated areas. Protocol III of the Convention on Certain Conventional Weapons (CCW) prohibits the use of incendiary weapons against military targets located among civilians.
- Human Rights Watch argues that firing white phosphorus shells over residential areas could violate these legal norms because the weapon's indiscriminate effects endanger civilians and civilian infrastructure.

### Conclusion:

The allegations by Human Rights Watch regarding Israel's use of white phosphorus in Lebanon highlight the complex intersection of modern warfare, international law, and humanitarian protection. While white phosphorus has legitimate military applications, its deployment in populated areas can pose serious risks to civilians and potentially violate international norms. The controversy underscores the need for stronger adherence to international humanitarian law and accountability mechanisms in contemporary conflicts.

**Supreme Court rejects plea to make NAT test mandatory in blood banks**

### Context:

Recently, the Supreme Court of India refused to entertain a Public Interest Litigation (PIL) seeking to make Nucleic Acid Amplification Testing (NAT) mandatory in all blood banks across India.

## Background of the Case:

- The PIL was filed by the NGO Sarvesham Mangalam Foundation. It sought directions to:
  - » Make NAT testing compulsory in all blood banks.
  - » Recognise the “Right to Safe Blood” as part of Article 21 (Right to Life).
  - » The plea argued that current screening methods such as ELISA may fail to detect infections at an early stage.

## What did the Supreme Court say?

- A bench led by Chief Justice Surya Kant declined the plea and made several observations.
  - » **Policy decisions require expert assessment:** The Court observed that determining whether NAT should be mandatory involves technical medical expertise and policy considerations, which courts are not equipped to decide.
  - » **Financial implications:** The bench noted that NAT testing is more expensive, and making it compulsory nationwide could impose a significant financial burden on states.
  - » **Role of executive authorities:** The Court allowed the petitioner to submit a representation to the Ministry of Health and Family Welfare and state health departments, which can consult domain experts and decide the matter at the policy level.

## About Nucleic Acid Testing (NAT):

- Nucleic Acid Testing (NAT) is a molecular diagnostic technique that detects the genetic material (DNA or RNA) of pathogens in blood samples.
- **Key Features:**
  - » Detects infections at an early stage, even before antibodies are produced.
  - » Used to identify viruses such as:
    - HIV
    - Hepatitis B

➤ Hepatitis C

- » Helps reduce the “window period” during which infections may go undetected.

## NAT vs Conventional Tests:

Aspect	NAT	ELISA
Detection method	Detects viral DNA/RNA	Detects antibodies
Window period	Shorter	Longer
Accuracy	Higher	Moderate
Cost	Expensive	Cheaper

## Blood Safety Framework in India:

- **Legal and Policy Framework:**
  - » Drugs and Cosmetics Act, 1940 – Regulates blood banks.
  - » National Blood Policy (2002) – Aims to ensure a safe and adequate blood supply.
  - » National AIDS Control Organisation (NACO) guidelines for blood screening.
- **Current Screening Methods:** Most blood banks currently rely on:
  - » ELISA testing
  - » Rapid antibody tests
  - » NAT testing is available only in limited hospitals and advanced blood banks due to cost and infrastructure constraints.

## Conclusion:

The Supreme Court’s decision reflects judicial restraint in technical policy matters while highlighting the need for expert-driven decisions in public health. Although NAT testing can significantly enhance blood safety, its nationwide implementation requires careful evaluation of costs, infrastructure and public health priorities.

**ISRO Successfully Tests CE20  
Cryogenic Engine**

## Context:

Recently, the Indian Space Research Organisation (ISRO) successfully conducted a

sea-level hot test of the CE20 cryogenic engine at the ISRO Propulsion Complex, Mahendragiri (Tamil Nadu). The engine operated for 165 seconds and generated about 22 tonnes of thrust, demonstrating improved capability for India’s heavy-lift rockets.

**About the CE20 Cryogenic Engine:**

- CE20 is India’s most powerful indigenous cryogenic rocket engine.
- It powers the upper cryogenic stage of the LVM3 launch vehicle (formerly GSLV Mk-III).
- The engine uses liquid hydrogen and liquid oxygen as propellants.
- It provides the final thrust required to place satellites or spacecraft into orbit.

upgraded engine will improve the payload capacity of the LVM3 heavy-lift rocket, enabling India to launch heavier satellites and undertake more ambitious deep-space missions.

- **Boost to the Gaganyaan Mission:** The CE20 engine powers the upper stage of LVM3, the launch vehicle selected for India’s human spaceflight mission, Gaganyaan.
- **Strengthening Indigenous Cryogenic Technology:** Cryogenic engines are among the most complex rocket technologies. Successful testing strengthens India’s self-reliance in advanced space propulsion systems.

**Future Space Missions:**

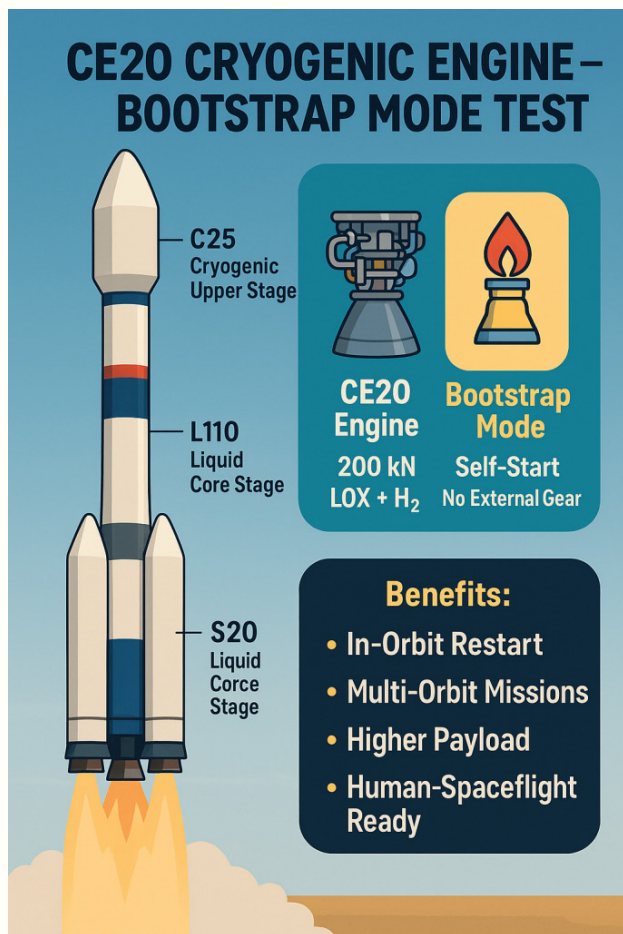
- Higher-thrust engines will support:
  - » Heavy satellite launches
  - » Interplanetary missions
  - » Human spaceflight programmes

**About the LVM3 Rocket:**

- The Launch Vehicle Mark-3 (LVM3), earlier known as GSLV Mk-III is India’s heaviest operational launch vehicle, developed by ISRO.
- **Key features:**
  - » Three-stage rocket (two solid boosters, liquid core stage, cryogenic upper stage)
  - » Payload capacity:
    - ~10,000 kg to Low Earth Orbit (LEO)
    - ~4,200 kg to Geosynchronous Transfer Orbit (GTO)
  - » The CE20 engine powers the cryogenic third stage (C25) of the rocket, providing the final thrust required to place satellites or spacecraft into orbit.

**About ISRO:**

- The Indian Space Research Organisation (ISRO) is India’s national space agency, established in 1969, and functions under the Department of Space.
- **Key features:**
  - » Headquarters: Bengaluru, Karnataka
  - » Responsible for space exploration,



**Importance of the Test:**

- **Enhancing LVM3 Rocket Capability:** The

satellite launches, and space technology development

- » Known for cost-effective missions such as Chandrayaan-1, Chandrayaan-3, and the Mars Orbiter Mission (Mangalyaan)
- » Operates major launch vehicles including PSLV, GSLV, and LVM3

### Conclusion:

The successful ground test of the CE20 cryogenic engine producing 22 tonnes of thrust marks a significant milestone for India's space programme. By enhancing the capability of the LVM3 rocket, the test will strengthen India's ambitions in human spaceflight, heavy satellite launches, and deep-space exploration.

## Atomic Clock Failure and Challenges for India's Navigation System

### Context:

Recently, India's indigenous satellite navigation system NavIC has faced a major setback due to failure of the IRNSS-1F satellite's atomic clock, has reduced the number of fully operational satellites in the constellation to just three, below the minimum required for navigation services.

### Why Atomic Clocks Matter:

- Atomic clocks are the core technology behind satellite navigation systems.
- They:
  - » Provide ultra-precise timing signals
  - » Allow receivers on Earth to calculate distance from satellites
  - » Enable accurate positioning and navigation.
  - » Without accurate timing signals, satellites cannot provide reliable navigation services.

### About NavIC:

- NavIC (Navigation with Indian Constellation), also known as the Indian Regional Navigation Satellite System (IRNSS), is

India's indigenous satellite navigation system developed by ISRO.

- It was designed to provide accurate positioning and timing services over India and regions up to about 1,500 km beyond its borders.
- **Key Features:**
  - » Developed by the Indian Space Research Organisation (ISRO)
  - » Regional alternative to global systems like:
    - GPS (USA)
    - GLONASS (Russia)
    - Galileo (EU)
    - BeiDou (China)
  - » Designed constellation: 7 satellites
    - 3 geostationary satellites (GEO)
    - 4 geosynchronous satellites (GSO)
  - » Accuracy: around 5 meters over India.

### Strategic Importance of NavIC:

- Navigation systems are critical strategic infrastructure. NavIC reduces India's dependence on foreign systems like GPS, especially during geopolitical conflicts.
- **Military Applications**
  - » Indian Armed Forces
  - » Missile guidance
  - » Secure navigation in conflict zones
- **Civilian Applications**
  - » Disaster management
  - » Maritime navigation
  - » Aviation
  - » Vehicle tracking
  - » Smartphones and logistics systems.
- **National Security**
  - » Navigation systems are crucial for border surveillance, naval operations, and disaster response.

### Structural Challenges:

- The NavIC programme faces several structural challenges:
  - » **Aging Satellites:** Many first-generation IRNSS satellites launched between 2013–2016 are nearing or exceeding their design life of around ten years.

- » **Atomic Clock Failures:** Multiple satellites have experienced clock failures, weakening the reliability of the constellation.
- » **Limited Constellation Size:** Unlike global navigation systems such as GPS or Galileo, NavIC has a smaller regional constellation, making it more vulnerable to satellite failures.

### Steps Being Taken by ISRO:

- To strengthen NavIC, ISRO has initiated several measures:
  - » **Second-generation satellites (NVS series):** New satellites with improved atomic clocks.
  - » **Additional Launch Plan:** Strengthening the constellation by launching NVS-03, NVS-04, and NVS-05 satellites.
  - » **Integration with smartphones:** The government has mandated NavIC compatibility in some devices to increase adoption.
  - » **Improved atomic clock technology:** New satellites use more reliable clock systems.

### Conclusion:

The recent setbacks do not signify the collapse of India’s navigation ambitions but highlight the need for continuous satellite replenishment and technological resilience. Strengthening NavIC will remain vital for India’s strategic autonomy and emerging space capabilities in the coming decades.

## New Particle Discovery at the Large Hadron Collider

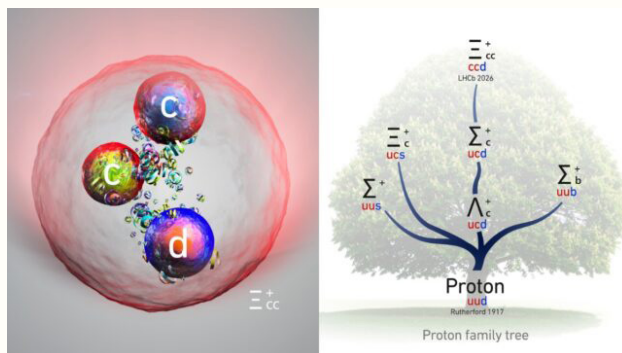
### Context:

The CERN’s Large Hadron Collider has recently discovered a new subatomic particle named Xi-cc-plus, marking the 80th particle identified at the world’s most powerful particle accelerator. This discovery has been made by the LHCb (Large Hadron Collider beauty) experiment after

recent upgrades to the detector.

### Understanding the Science behind the particle:

- All matter is composed of atoms, whose nuclei contain protons and neutrons. These, in turn, are made of smaller particles called quarks, which are the fundamental constituents of matter. Quarks exist in six types or “flavours”: up, down, charm, strange, top, and bottom.
- Particles made of three quarks are called baryons. Protons and neutrons are the most familiar baryons, composed of combinations of up and down quarks.
- The newly discovered Xi-cc-plus particle is unusual because:
  - » It contains two charm quarks and one down quark
  - » It is about four times heavier than a proton
  - » It is highly unstable and exists only for a very short duration
- Such particles are extremely difficult to detect because they decay almost instantly after being created in high-energy collisions.
- The particle is significant because it is a “doubly charmed baryon”, containing two heavy “charm” quarks and one lighter quark. Scientists believe that studying this particle will deepen our understanding of quantum mechanics and the strong nuclear force, which binds matter together.



### About Large Hadron Collider:

- The Large Hadron Collider is the world’s

largest and most powerful particle accelerator, consisting of a 27-kilometre underground ring located beneath the France–Switzerland border.

- It works by accelerating particles, usually protons to near the speed of light and then colliding them. These collisions recreate conditions similar to those just after the Big Bang, allowing scientists to observe rare and exotic particles.
- Key features of the LHC's functioning include:
  - » High-energy collisions that produce short-lived particles
  - » Detection of decay products to reconstruct original particles
  - » Advanced detectors like LHCb, designed to study rare particles and interactions

### Conclusion:

The discovery of the Xi-cc-plus particle at the Large Hadron Collider marks a significant milestone in humanity's quest to understand the fundamental nature of matter. It highlights how even a small variation in particle composition such as replacing one quark, can lead to profound differences in behavior, revealing the complexity of the quantum world.

## Dimethyl Ether (DME) Technology in India

### Context:

Recently, The CSIR-National Chemical Laboratory has announced plans to scale up Dimethyl Ether (DME) technology to industrial level in collaboration with industry partners. This initiative aims to promote cleaner alternative fuels and reduce dependence on conventional LPG.

### About DME Technology:

- Dimethyl Ether (DME) is a clean-burning synthetic fuel developed by CSIR-National Chemical Laboratory as a potential substitute for LPG. It shares similar

physical properties with LPG, allowing it to be stored and transported using existing infrastructure.

- The technology involves converting methanol into DME using an indigenously developed catalyst and optimized process design. It operates at moderate pressure (~10 bar), enabling direct filling into LPG cylinders. The process has already been tested at a semi-pilot scale of around 250 kg per day, with plans for further scaling.
- DME can be produced from diverse feedstocks such as coal, biomass, natural gas, and even captured carbon dioxide, making it a flexible and future-ready fuel.

### CSIR Innovations Can Help India Move Beyond LPG

India consumes around 31.3 million metric tonnes of LPG annually, with 60-67% imported, underscoring the need for indigenous energy solutions. CSIR's DME innovations offer a pathway towards cleaner and more secure energy.

**What is DME?**

Dimethyl Ether (DME) is a clean burning fuel that can serve as a near-perfect substitute for LPG in cooking and other energy applications.



**Why India Needs DME**

India's heavy dependence on imported LPG highlights the need for secure, indigenous fuel alternatives.

CSIR-NCL Innovation

CSIR-NCL has developed advanced catalysts to efficiently produce DME from methanol for scalable domestic production.

IIT's Waste to Wealth Model

CSIR-IIT is converting industrial CO<sub>2</sub> emissions into clean DME fuel using Carbon Capture and Utilisation (CCU).

Industry Partnership

IIT and BHEL are building a pilot facility to demonstrate carbon-to-DME conversion technology.

### Significance for India:

- DME holds immense potential in addressing India's energy challenges. It can be blended with LPG, up to 20% as per standards, while even 8% blending requires no modification in existing stoves or cylinders.
- This blending can significantly reduce LPG imports and save foreign exchange. Estimates suggest that replacing just 8% of LPG consumption could save around Rs.9,500 crore annually.

- Moreover, domestic production of DME aligns with the goals of Atmanirbhar Bharat, enhances energy security, and reduces dependence on volatile global markets. It also supports diversification of India's energy mix and reduces risks arising from geopolitical tensions.

### Advantages of DME:

- DME offers several environmental, economic, and operational advantages. It is a clean-burning fuel that produces lower emissions of particulate matter and harmful gases, thereby contributing to improved air quality.
- It is compatible with existing LPG infrastructure, requiring minimal modifications, which reduces transition costs. Additionally, its production from domestic resources such as coal and biomass promotes resource utilisation and supports rural and industrial development.
- Beyond cooking fuel, DME has applications in transportation and the chemical industry, enhancing its overall utility. Its cleaner combustion also helps reduce environmental and health-related costs.

### Challenges:

- Despite its promise, DME faces certain challenges. India currently depends on imported methanol, which may limit short-term benefits. Large-scale production infrastructure is still under development, and cost competitiveness depends on the availability of affordable domestic feedstock.
- To realise its full potential, India needs to promote domestic methanol production through coal gasification, biomass utilisation, and carbon capture technologies. Scaling up pilot projects to commercial levels, introducing clear policy frameworks for blending, and encouraging public-private partnerships will be essential.

### Conclusion:

DME technology developed by CSIR-National

Chemical Laboratory represents a significant step towards reducing India's LPG import dependence and enhancing energy security. With appropriate policy support, technological scaling, and domestic resource utilisation, DME can emerge as a sustainable and cost-effective alternative, strengthening India's long-term energy resilience.

## Extracellular RNA (exRNA) in Drinking Water

### Context:

A recent study published in the prestigious journal Clean Water has presented a new perspective on water safety. Scientists have found that even after the process of disinfection, bacterial extracellular RNA (exRNA) remains present in drinking water. This discovery not only helps in identifying bacteria but also reveals the survival strategies they were using just before death.

### What is Extracellular RNA (exRNA):

- RNA is usually found inside living cells and is responsible for protein synthesis. When a bacterium is damaged or dies, it releases its genetic material (RNA) into the surrounding environment, which is called 'extracellular RNA'.
- Earlier, it was believed that this RNA gets destroyed immediately during disinfection, but new research has proven that it can persist in water.

### Key Findings of the Study:

- Biological 'Black Box':** Researchers have compared exRNA to an aircraft's 'black box'. Just as a black box records activities before an accident, exRNA reveals what activities bacteria were performing before death.
- Survival Strategy:** Analysis of RNA showed which genes bacteria activated to protect themselves against disinfectants (such as chlorine or UV light).
- Development of Better Disinfectants:** By

understanding these strategies, scientists can now design targeted disinfectants that can directly break these bacterial defense mechanisms.

### Importance and Need:

- Currently, water purity is assessed using the 'cultural method', where it is observed whether bacteria grow in a petri dish or not. However, many bacteria enter a 'Viable But Non-Culturable (VBNC)' state, meaning they are alive but not detectable through conventional methods.

**Extracellular RNA (exRNA) in Drinking Water**  
A New Revolution in Water Treatment Technology

**What is exRNA?**

- RNA released by dying bacteria into water
- Persists even after disinfection

**Key Findings:**

- Biological "Black Box"**: Reveals bacterial activity before death
- Survival Strategy**: Shows defense genes activated
- Better Disinfectants**: Designs to overcome bacterial defenses

**Benefits of exRNA Technology**

- Detects Hidden Bacteria**: Identifies VBNC State
- Fights AMR**: Tracks Resistance Development
- Improves Public Health**: Prevents Waterborne Diseases

**Limitations of Chlorination**

- Resistant Microorganisms**: Cryptosporidium & Other Parasites
- Harmful By-products (DBPs)**: Carcinogenic Compounds (THMs)

**Towards Advanced Water Safety**  
From Reactive to Proactive Water Treatment

### Benefits of exRNA Technology:

- Accuracy**: This technique can determine which bacteria are truly dead and which are merely in a dormant state.
- Antimicrobial Resistance (AMR)**: It helps in understanding how bacteria develop

resistance to chemicals, which is crucial for preventing future pandemics.

- Public Health**: By identifying hidden microorganisms in urban water supply systems, water-borne diseases (Cholera, Typhoid, etc.) can be prevented more effectively.

### Limitations of Chlorination:

- Chlorine is the most common method of water treatment, but it has certain limitations:
  - Resistant Microorganisms**: Some parasites, such as Cryptosporidium, are highly resistant to chlorine and do not die at normal concentrations.
  - Harmful By-products (DBPs)**: When chlorine reacts with organic matter in water (such as leaves or soil), it can produce carcinogenic compounds like trihalomethanes (THMs).

### Conclusion:

This research indicates a shift in water treatment from a 'reactive' approach to a 'proactive' approach. By understanding the final defense mechanisms of microorganisms, water purification systems can be made more advanced, safe, and efficient.

6

# Economy

## India's Bioeconomy: An Integrated Development Model of Science, Policy and Market

### Context:

The India Bioeconomy Report (IBER) 2026 was recently released at the Biotechnology Industry Research Assistance Council (BIRAC).

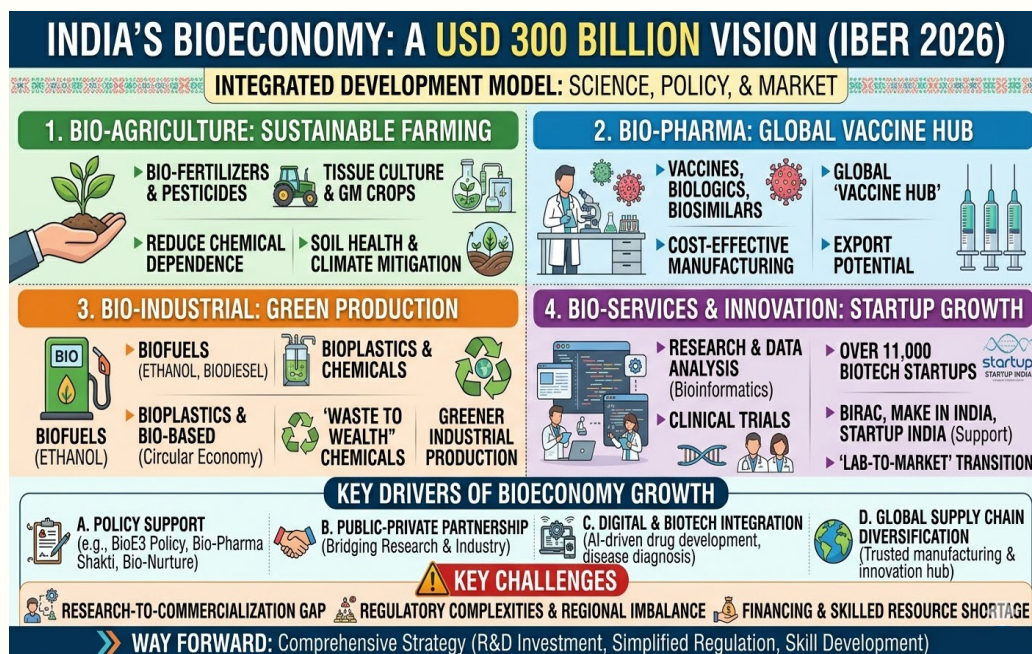
According to the report, India's bioeconomy has grown from approximately USD 10 billion in 2014 to a record USD 195.3 billion in 2025.

The sector has expanded at a compound annual growth rate (CAGR) of around 18 percent and currently contributes about 4.8 percent to the national GDP. In recent years, India has accorded strategic priority to the biotechnology sector through

initiatives such as the BioE3 Policy (2024), the National Research and Development (RDI) Scheme, and the Startup India initiative. Additionally, post the COVID-19 pandemic, diversification of global supply chains and vaccine self-reliance have further elevated the bioeconomy as a strategic sector.

### Bioeconomy and its Significance:

- The bioeconomy refers to an economic system in which biological resources, biotechnology, and innovation are utilized to generate products, services, and energy. It represents a shift from traditional industrial economies toward a knowledge-



based, environmentally sustainable, and resource-efficient model.

- In the global context, this concept is closely aligned with the United Nations Sustainable Development Goals (SDGs), particularly SDG-2 (Zero Hunger), SDG-3 (Health), and SDG-13 (Climate Action). For India, it serves

not only as a driver of economic growth but also as a means to achieve social welfare and environmental sustainability.

### **Structure of India's Bioeconomy:**

India's achievement of reaching a USD 195 billion bioeconomy is not merely a statistical milestone but reflects a broader structural transformation in scientific capability, policy support, innovation ecosystem, and global competitiveness.

- **Sectoral Composition:** India's bioeconomy has a multi-dimensional structure comprising various sub-sectors:
  - » **BioPharma:** This is the most prominent and fastest-growing component of the bioeconomy. It includes vaccines, biologics, biosimilars, and diagnostic products. During the COVID-19 pandemic, India established itself as a global "vaccine hub," significantly enhancing its credibility and export potential. Its cost-effective manufacturing model makes it globally competitive.
  - » **BioAgri:** Bio-based agriculture is crucial for India's food security and sustainable farming. It includes bio-fertilizers, bio-pesticides, tissue culture, and genetically modified (GM) crops. This sector helps reduce dependence on chemical fertilizers, improves soil health, and mitigates the impacts of climate change.
  - » **BioIndustrial:** This sector plays a vital role in making industrial production greener and more sustainable. It includes biofuels (such as ethanol and biodiesel), bioplastics, and bio-based chemicals. Under the "Waste to Wealth" concept, agricultural residues and organic waste are used to produce energy and products, promoting a circular economy.
  - » **BioServices and Research:** This sector includes services such as research, data analysis, bioinformatics, clinical trials,

and contract research. India's skilled human resources and cost-effective services are positioning it as a global R&D hub.

- **Startups and Innovation:**
  - » India's emerging startup ecosystem plays a crucial role in the growth of the bioeconomy. Currently, over 11,000 biotech startups are active across sectors such as healthcare, agriculture, environment, and industrial biotechnology.
  - » Government initiatives such as the Biotechnology Industry Research Assistance Council (BIRAC), Startup India, and Make in India provide financial support, mentorship, and infrastructure to these startups.
  - » Additionally, bio-incubators, bio-clusters, and collaboration with research institutions have accelerated the "lab-to-market" transition of innovations. This shift indicates that the bioeconomy is no longer confined to the public sector but has become a major domain of private investment and entrepreneurship.
- **Contribution to GDP and Employment:**
  - » India's bioeconomy currently contributes approximately 4–5 percent to the country's GDP, with strong potential for further growth. This sector is more value-driven and knowledge-intensive compared to traditional industries.
  - » In terms of employment, it generates high-skill jobs such as scientists, researchers, bioengineers, data analysts, and technical experts. Indirectly, it also creates employment opportunities in agriculture, manufacturing, and services.
  - » Particularly in rural areas, bio-agriculture and biofuel industries contribute to local employment generation and income enhancement, thereby promoting inclusive growth.

### **Key Drivers of Bioeconomy Growth:**

The rapid expansion of India's bioeconomy is driven by several structural and policy-related factors that have positioned it as an emerging strategic sector.

- **Policy Support and Institutional Framework:** Government policies form the foundation of this sector:
  - » **BioE3 Policy:** Aims to promote bio-manufacturing and balance Economy, Environment, and Employment.
  - » **Bio-Pharma Shakti:** Announced in the Union Budget 2026–27, this initiative aims to position India as a global bio-manufacturing hub, focusing on domestic production and export of drugs, vaccines, and biotherapeutics.
  - » **BIRAC:** Provides funding and infrastructure for strategic research and innovation, having supported over 11,800 startups.
  - » **Bio-Nurture and Bio-RIDE:**
    - **Bio-RIDE:** Integrates research, innovation, and entrepreneurship.
    - **Bio-Nurture:** Strengthens supply chains for bio-manufacturing raw materials.
  - » **Bio-Sarathi Portal:** A digital platform connecting startups and researchers with global experts, mentors, and investors.
  - » **Gati Shakti and National Logistics Policy:** Provide logistical support to biotech parks and SEZs to ensure smooth and cost-effective movement of products.
- **Public-Private Partnership (PPP):** The PPP model has significantly bridged the gap between research and industry, enabling faster commercialization of new technologies. This collaboration has been particularly effective in biopharma, agricultural biotechnology, and biofuel sectors.
- **Integration of Digital and Biotechnology:** The integration of digital technologies such as Artificial Intelligence (AI), bioinformatics, and genomics has revolutionized this sector.

Bio-AI-based research has accelerated drug development, disease diagnosis, and agricultural innovation, improving both efficiency and accuracy.

- **Global Demand and Supply Chain Reconfiguration:** Post-COVID-19, there has been an increased need for diversified and reliable global supply chains. In this context, India has emerged as a trusted manufacturing and innovation hub, especially in vaccines, generic drugs, and bio-products.

### Key Challenges of the Bioeconomy:

- Despite rapid growth, India's bioeconomy faces several structural and institutional challenges:
  - » **Gap between Research and Commercialization:** Translating laboratory innovations into large-scale production and market-ready products remains challenging due to insufficient infrastructure, testing facilities, and industry collaboration.
  - » **Lack of Financing and Investment:** Biotechnology involves high risk and long gestation periods, limiting private investment. Startups require sustained financial support.
  - » **Regulatory Complexities:** Issues related to gene editing, biosafety, ethics, and data security complicate policymaking. Multi-layered and slow approval processes hinder innovation.
  - » **Regional Imbalance:** The biotech industry is concentrated in cities like Bengaluru, Hyderabad, and Pune, limiting equitable distribution of opportunities in Tier-2 cities and rural areas.
  - » **Shortage of Skilled Human Resources:** There is a growing demand for highly skilled professionals, but the supply of industry-ready talent remains inadequate.
- Globally, the United States, Europe, and China are leaders in the bioeconomy. India must strengthen its position through

innovation, cost competitiveness, and human capital.

- Achieving the target of a USD 300 billion bioeconomy by 2030 can establish India as a global biotechnology hub, provided there is a balanced approach to policy and investment.

### Way Forward:

- A comprehensive strategy is required for the robust and sustainable development of the bioeconomy, integrating policy, institutional, and global dimensions.
- Both the government and private sector must increase investment in research and development (R&D) to accelerate innovation. Regulatory processes need to be simplified, expedited, and made transparent to avoid delays in product approvals.
- Skill development programs in biotechnology should be strengthened to create industry-

ready human resources. Additionally, developing biotech hubs in Tier-2 and Tier-3 cities will ensure regional balance. Finally, international collaboration can enhance access to advanced technologies and global markets.

### Conclusion:

The expansion of India's bioeconomy signifies a new paradigm of economic development where innovation, research, and human capital become key drivers of growth. However, to make this growth sustainable and inclusive, policymaking must emphasize balance, transparency, and a long-term vision. If India succeeds in harmonizing research, investment, regulation, and social acceptance, the bioeconomy will not only drive economic growth but also play a decisive role in building a green, self-reliant, and knowledge-based India.

# Short Issues

## CBDC-based Food Subsidy Distribution Pilot Project Launched

### Context:

Recently, The Government of India has launched a Central Bank Digital Currency (CBDC)-based Digital Food Currency pilot for Direct Benefit Transfer (DBT) under the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) in Puducherry. The initiative marks a major step in digitising the delivery of food subsidies using emerging financial technologies.

### Details of the Puducherry CBDC Pilot:

- Under the pilot launched, the Government will transfer food subsidy entitlements directly into beneficiaries' CBDC wallets as programmable digital tokens (₹). These tokens are:

- » Issued by the Reserve Bank of India.
- » Credited straight to beneficiaries' digital wallets under the Direct Benefit Transfer (DBT) framework.
- » Redeemable only for purchasing entitled foodgrains and related items at authorised Fair Price Shops and merchant outlets.
- » Purpose-bound — designed so that the subsidy cannot be diverted for other uses.

### Significance and Expected Impact:

- **Strengthened Transparency:** Programmable tokens make it easier to track the flow and use of subsidy in real time.
- **Reduced Leakages:** By ensuring purpose-bound usage, the system limits diversion of benefits.
- **Improved Delivery Efficiency:** Direct digital transfers cut out intermediaries and reduce

delays.

- **Digital Empowerment:** The pilot augments India's digital governance agenda, bringing beneficiaries into formal digital payment ecosystems.

### About Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY):

- Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) is a government food security welfare scheme introduced in March 2020 as part of an emergency relief package during the COVID-19 pandemic.
- Administered by the Department of Food and Public Distribution under PDS system, it is one of the largest food security programmes globally, benefiting over 81 crore people (about 57 % of India's population).

### About the Public Distribution System:

- The Public Distribution System (PDS) is India's flagship food security mechanism aimed at providing essential foodgrains at subsidised prices to eligible households across the country.
- Under the PDS, beneficiaries holding ration cards procure foodgrains such as wheat, rice, and millets from authorised Fair Price Shops (FPS) at government-determined prices. PDS is administered under the National Food Security Act and seeks to prevent hunger, ensure nutrition, and support vulnerable populations.
- Traditionally, food grains and subsidies were delivered through physical distribution networks. Over time, reforms like Aadhaar-enabled authentication, ration card portability (ONORC), and e-POS machines have been introduced to improve transparency and reduce leakages in the system.

### What Is CBDC ?

- Central Bank Digital Currency (CBDC) refers to the digital form of a country's fiat currency — issued and regulated by the nation's central bank. In India, the CBDC is

known as the Digital Rupee (₹).

- Unlike private cryptocurrencies, a CBDC is legal tender backed by the Reserve Bank of India (RBI) and holds the same value as physical currency. It is designed to combine the trust and stability of central bank money with the convenience and efficiency of digital transactions.

### Conclusion:

The pilot is being executed in collaboration with the Government of Puducherry, RBI, Public Financial Management System (PFMS) and Canara Bank as the banking partner. After evaluating results from Puducherry, authorities plan phased expansion to other Union Territories and states, reinforcing the government's commitment to technology-led welfare reform.

## India's First Semiconductor Plant: ISM & Micron ATMP

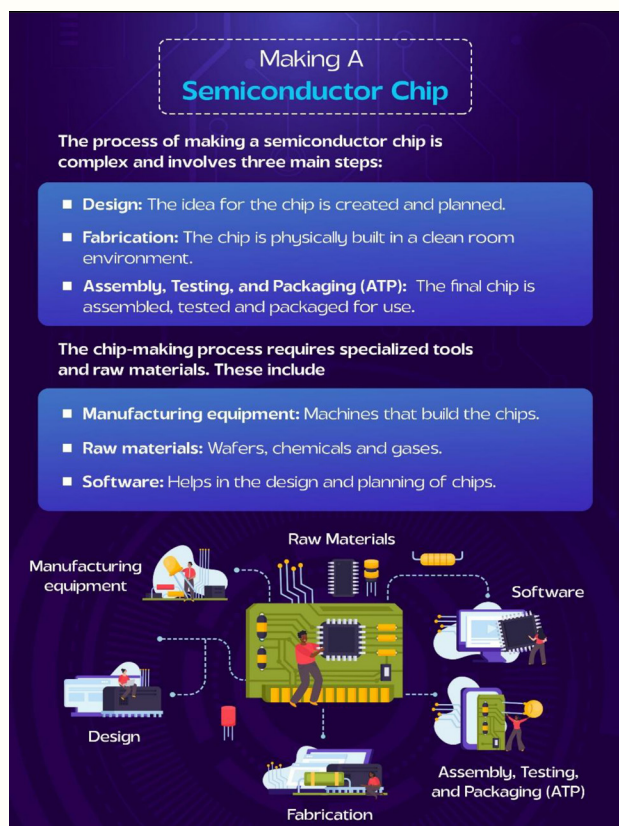
### Context:

On 28 February 2026, PM Modi inaugurated India's first large-scale semiconductor fabrication-related plant in Sanand, Gujarat under the India Semiconductor Mission. The project, an ATMP (Assembly, Testing, Marking and Packaging) semiconductor facility by Micron Semiconductor Technology India is backed by an investment of Rs.22,516 crore and is expected to generate around 5,000 direct jobs once fully operational.

### About Semiconductors and Their Uses:

- Semiconductors are materials, typically silicon whose electrical conductivity lies between that of conductors and insulators. These properties make them ideal for controlling electrical signals in electronic devices.
- They form the heart of modern electronics, including microprocessors, memory chips (DRAM, NAND), sensors, power electronics, and integrated circuits (ICs) used in

smartphones, laptops, automobiles, defence systems, renewable energy systems, data centres and artificial intelligence (AI) platforms.



### About India Semiconductor Mission (ISM):

- The India Semiconductor Mission is a government-led programme aimed at building a robust semiconductor and display ecosystem in India to reduce dependency on imports, foster innovation, and establish India as a global hub for electronics manufacturing and design.
- **Key features of the Mission include:**
  - » Fiscal and policy support for chip fabrication plants, packaging units, and design centres, including up to 50 % of project costs on a pari-passu basis for fabs.
  - » Incentives to attract global and domestic investments across the semiconductor value chain, from wafer fabrication to advanced packaging and testing.

- » Development of design capabilities, research and development centres, and skilled semiconductor talent within the country.
- » Collaboration with international firms and partners to integrate India into global semiconductor supply chains.
- » The mission, supported by an approximate outlay of Rs.76,000 crore, reflects the Government's ambition to position India as a trusted global semiconductor partner and to scale up domestic manufacturing in this critical sector.

### Strategic Importance of the Sanand Facility:

- The Micron ATMP plant at Sanand will convert advanced DRAM and NAND wafers into finished products such as memory modules and solid-state drives (SSDs) — key components for computing, AI workloads, and data storage.
- Although the Sanand unit focuses on packaging and assembly, it serves as a gateway to larger semiconductor ambitions, complementing other projects under the ISM ecosystem.
- India's semiconductor push also includes emerging fabrication and chip design facilities across states such as Uttar Pradesh, Gujarat and others, fostering job creation, technology development and supply chain resilience.

### Conclusion:

India's push for domestic semiconductor manufacturing via ISM aims for technological self-reliance, driving growth in AI, 5G, and defense. By reducing import reliance and establishing a full, indigenous ecosystem, India is boosting startups and securing long-term capabilities in design, fabrication, and packaging.

**India's Semiconductor Market Growth**

### Context:

Recently, a report released by Deloitte noted that India's semiconductor market will increase from about \$45–50 billion today to \$300 billion by 2035. It may reach around \$120 billion by 2030. This shows that India is becoming important in the global technology sector.

### About Semiconductor:

- A semiconductor is a material like silicon that is used to make electronic chips. These chips are the “brain” of modern devices. They are used in mobile phones, computers, cars, and many other machines. Without semiconductors, modern technology cannot function.
- They are also important for new technologies like Artificial Intelligence (AI), electric vehicles, and data centres. Because of this, semiconductors are considered very important for economic growth and national security.

**INDIA'S SEMICON MARKET SET TO HIT \$300 BILLION BY 2035**

Market projected to grow from \$45–\$50 billion to \$120 billion by 2030, **reaching \$300 billion by 2035**

**Over 60% of India's semiconductor demand to be met through domestic production by 2035**

### Growth Drivers and Government Initiatives:

- The demand for semiconductors in India is increasing because of the growth of AI, smartphones, electric vehicles, and digital services. Globally, semiconductor demand

is also rising due to AI and data centres.

- The Government of India has taken many steps to develop this sector. The India Semiconductor Mission (ISM) was launched to build a complete ecosystem, including the design, manufacturing, and testing of chips.
- The government is also providing financial support and incentives to companies to set up chip factories. A new phase, India Semiconductor Mission 2.0, aims to further strengthen the industry through large investments and better supply chains.
- At present, India imports more than 90% of its semiconductor needs, but this is expected to change in the coming years. By 2035, India may produce around 60% of its own demand.

### Challenges:

- Despite high growth potential, the semiconductor sector faces many challenges. It requires very high investment, advanced technology, and skilled workers.
- India also faces strong competition from countries like Taiwan and the USA. There is also a shortage of skilled manpower and gaps in infrastructure.

### Way Forward:

To overcome these challenges, India needs to focus on skill development, research and development, and better infrastructure. Strong coordination between the central and state governments is also necessary. India has a great opportunity to become a global semiconductor hub. With proper policies and implementation, India can reduce imports and become self-reliant in this important sector.

## State of Working India 2026 Report

### Context:

India's demographic dividend faces mounting pressure as employment generation lags behind

rising education levels. The State of Working India 2026 report by Azim Premji University reveals that less than 7% of male graduates secure a permanent salaried job within a year, and only 3.7% access white-collar jobs, highlighting deep structural issues in the labour market.

### What is Unemployment?

- Unemployment refers to a situation where individuals who are willing and able to work at prevailing wages are unable to find jobs. It is commonly measured as the percentage of the labour force that is jobless but actively seeking employment.
- In India, unemployment data is primarily captured through the Periodic Labour Force Survey (PLFS).
- The labour force consists of individuals aged 15 years and above (up to 64 years) who are either employed or actively seeking work.

### Key Findings of the Report:

- Only <7% of male graduates obtain permanent salaried jobs within a year.
- Access to white-collar jobs is even lower at 3.7%.
- Among Class 12 pass males:
  - » 4% secure salaried jobs
  - » 1.5% enter white-collar work
- Around 40% of young graduates remain unemployed, reflecting persistent labour market stress.
- Further, data from the Periodic Labour Force Survey (PLFS) shows that youth unemployment (15–29 years) is nearly three times the overall rate, indicating a disproportionate burden on young job seekers.

### Nature of the Problem:

- **Structural Mismatch:** Rapid expansion of higher education has not been matched by adequate job creation or skill alignment.
- **Persistent Graduate Unemployment:** Graduate unemployment has remained high over decades, especially among youth.
- **Waiting Unemployment:** Youth delay

employment due to:

- » Preparation for government jobs
- » Pursuit of higher education or skill development
- **Informalisation:** Many graduates enter low-quality, informal, or gig jobs lacking security.

### Economic and Social Implications:

- **Demographic Dividend at Risk:** A large youth population may become a liability.
- **Rising Inequality:** Educated unemployment creates a class of “qualified but jobless.”
- **Declining Returns to Education:** Wage growth for graduates has slowed in recent years.
- **Social Frustration:** Increased competition for limited formal jobs.

### Reasons Behind the Crisis:

- Oversupply of graduates versus limited quality jobs
- Weak manufacturing sector
- Skill gaps and poor vocational training
- Technological changes reducing entry-level jobs

### Way Forward:

- Promote labour-intensive manufacturing and MSMEs
- Strengthen skill development and apprenticeship systems
- Improve industry-academia linkages
- Shift focus from degrees to employable skills
- Enhance formal job creation with social security

### Conclusion:

The findings reveal a structural crisis in India’s labour market, where education is no longer a guarantee of employment. Addressing this requires a paradigm shift towards skill-oriented growth, improved job quality, and inclusive labour policies to effectively harness India’s demographic potential.

## BHAVYA Scheme

### Context:

Recently, The Union Cabinet in March 2026 approved the Bharat Audyogik Vikas Yojna (BHAVYA) with an outlay of Rs.33,660 crore. BHAVYA scheme aims to establish 100 plug-and-play industrial parks across India to boost manufacturing, improve investment climate, and enhance ease of doing business.

### About the BHAVYA Scheme:

- Bharat Audyogik Vikas Yojna (BHAVYA) is a centrally sponsored industrial infrastructure scheme designed to develop world-class industrial parks with ready-to-use facilities. It is implemented by the National Industrial Corridor Development Corporation under the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.
- The scheme focuses on accelerating manufacturing-led growth, promoting cluster-based development, and strengthening domestic supply chains by providing pre-approved infrastructure and reducing procedural delays.

**BHAVYA SCHEME: BHARAT AUDYOGIK VIKAS YOJNA**  
CENTRAL SCHEME APPROVED: MARCH 2026

**ABOUT THE SCHEME**

- Centrally Sponsored Industrial Infrastructure Scheme
- Develop World-Class Ready-to-use Industrial Parks
- Accelerate Mfg-led Growth & Cluster Development
- Implement: NICDC under DPIIT, Min of Commerce & Industry

**KEY FEATURES**

- 100 Industrial Parks (100-1000 acres) in all states/UTs
- "Plug-and-Play" (Pre-cleared land, utilities, approvals, quick start)
- Single-Window Clearance & Pre-approved compliances (Ease of doing business)

**FINANCIAL SUPPORT**

- Up to 41 Cr/acre (Core, Value-Added, Social Infra)
- Up to 25% support for External Connectivity

**INTEGRATED INFRASTRUCTURE**

- Roads & Drainage
- ICT Systems
- Factory Sheds
- Testing Labs
- Warehousing
- Worker Hostels
- Waste Management

**PARK SELECTION**

Challenge-Based Selection Process. Select investment-ready, reform-oriented projects.

**IMPLICATIONS OF THE SCHEME**

- Boost manufacturing as global hub
- Large-scale employment (direct & indirect)
- Attract Domestic & Foreign Investment

ATMANIRBHAR BHARAT (Self-reliance) | SUSTAINABLE DEVELOPMENT (Green energy, Underground utilities) | VIKSIT BHARAT 2047 VISION

IMPLEMENTED BY: NICDC, DPIIT, MINISTRY OF COMMERCE AND INDUSTRY

### Key Features of BHAVYA scheme:

- BHAVYA scheme emphasizes plug-and-play infrastructure where land, utilities and approvals are pre-cleared, enabling industries to start operations quickly.
- It proposes the development of 100 industrial parks ranging from 100 to 1000 acres across all states and union territories.

Financial assistance includes up to Rs.1 crore per acre for core, value-added, and social infrastructure, along with up to 25% support for external connectivity. The parks will have integrated infrastructure including roads, drainage, ICT systems, factory sheds, testing labs, warehousing, and worker housing.

- It also promotes ease of doing business through single-window clearance systems and pre-approved compliances. A challenge-based selection process ensures that only investment-ready and reform-oriented projects are chosen. Additionally, the scheme aligns with PM GatiShakti for multimodal connectivity and emphasizes sustainable development through green energy integration and underground utility corridors.

### Implications of the scheme:

- BHAVYA is expected to significantly boost India's manufacturing sector and strengthen its position as a global manufacturing hub. It will generate large-scale employment opportunities, both direct and indirect, and attract domestic as well as foreign investments by reducing entry barriers. The scheme promotes cluster-based industrialization, thereby improving supply chain efficiency and reducing costs.
- It also contributes to balanced regional development by spreading industrial growth across states. Furthermore, integration with national infrastructure initiatives like PM GatiShakti will enhance logistics efficiency and overall economic productivity.

### Conclusion:

BHAVYA marks a paradigm shift in India's industrial development strategy by moving towards ready-to-use, integrated industrial ecosystems. If implemented effectively, it can play a crucial role in accelerating economic growth, improving competitiveness, and realizing the vision of Atmanirbhar Bharat and Viksit Bharat 2047.

## Credit Guarantee Scheme for Microfinance Institutions-2.0 (CGSMFI-2.0) Launched

### Context:

Recently, the Government of India has introduced the Credit Guarantee Scheme for Microfinance Institutions-2.0 (CGSMFI-2.0). The revamped scheme aims to support microfinance institutions (MFIs) by providing credit guarantee cover, thereby enabling them to extend collateral-free loans to low-income households, particularly in rural and semi-urban areas.

### About Microfinance Institutions (MFIs):

- Microfinance Institutions (MFIs) are financial companies providing small loans, savings, insurance, and money transfers to low-income individuals or groups who lack access to traditional banking.
- They empower small entrepreneurs, particularly in rural areas, by offering financial services, reducing poverty, and boosting financial inclusion, often using models like Joint Liability Groups (JLG) or Self-Help Groups (SHG).
- However, due to recent financial stress in the sector, banks have become cautious in lending to MFIs, especially smaller ones, resulting in reduced credit flow.
- CGSMFI-2.0 seeks to address this issue by incentivising banks and financial institutions to lend to MFIs through a structured risk-sharing mechanism.

### Key Features of CGSMFI-2.0:

- Credit Guarantee Mechanism:** Provides guarantee cover to banks/financial institutions against expected losses on loans extended to NBFC-MFIs/MFIs for on-lending. The scheme provides credit guarantee support through the National Credit Guarantee Trustee Company Limited (NCGTC)
- Eligible Borrowers:** Existing or new small

borrowers as per the RBI's regulatory definition of microfinance

- Guarantee Coverage:**
  - » 80% for small MFIs
  - » 75% for medium MFIs
  - » 70% for large MFIs
- Guarantee Fee:** 0.50% per annum on sanctioned amount (first year) and outstanding amount thereafter
- Validity:** Scheme operational till 30 June 2026 or until guarantees reach Rs.20,000 crore, whichever is earlier



**Government of India**  
**CREDIT GUARANTEE SCHEME FOR MICROFINANCE INSTITUTIONS-2.0 (CGSMFI-2.0)**  
 Supporting Microfinance Institutions  
 Collateral-Free Loans for Low-Income Households

**Key Features:**

- Credit Guarantee Cover by NCGTC**
- Guarantee Coverage:**
  - ✓ 80% Small MFIs
  - ✓ 75% Medium MFIs
  - ✓ 70% Large MFIs
- Guarantee Fee:** ₹ 0.50% Per Annum
- Valid Till:** 30 June 2026 or ₹ 20,000 Crore Cap

**Objectives:**

- Enhance Credit Flow to MFIs
- Support NBFC-MFIs & Small MFIs
- Affordable Credit to Low-Income Households
- Strengthen Financial Inclusion

**Significance & Impact:**

- Financial Inclusion
- Support to Smaller MFIs
- Women Empowerment
- Boost Rural Livelihoods

**Enabling Loans for 36 Lakh Small Borrowers**  
 Reviving & Strengthening the Microfinance Sector

### Objectives:

- To enhance credit flow to the microfinance sector
- To support NBFC-MFIs and smaller MFIs facing funding constraints
- To expand access to affordable credit for low-income households
- To strengthen financial inclusion and

reduce dependence on informal credit

### Significance:

- **Financial Inclusion:** Expands access to formal credit for vulnerable populations
- **Support to MFIs:** Helps smaller MFIs access institutional funding
- **Women Empowerment:** Majority of microfinance borrowers are women, promoting economic participation
- **Economic Growth:** Boosts rural livelihoods, self-employment, and micro-enterprises
- **Risk Mitigation:** Encourages lending institutions to re-enter the MFI segment with reduced risk exposure

### Impact:

- The scheme is expected to significantly improve liquidity in the microfinance sector and enable NBFC-MFIs/MFIs to extend loans to nearly 36 lakh small borrowers, thereby strengthening grassroots-level economic activity.

### Conclusion:

CGSMFI-2.0 represents a targeted intervention to revive and strengthen the microfinance sector. By addressing credit constraints through a guarantee mechanism, the scheme can play a vital role in deepening financial inclusion and supporting inclusive economic growth, provided it is implemented with adequate safeguards and oversight.

## Minimum Support Price (MSP) & Procurement Issues in India

### Context:

Recently, A Parliamentary Standing Committee headed by Kanimozhi Karunanidhi has expressed concern over the persistent gap between estimated and actual procurement of rice and wheat.

### Key findings of the committee:

- Since 2022–23, procurement of wheat and rice has been less than 30% of total

production.

- Wheat procurement stood at 76.71%, 71.35% and 87.29% of estimates for 2023–24, 2024–25 and 2025–26 respectively.
- Several States like Bihar, Gujarat, Punjab, Uttar Pradesh recorded lower-than-target procurement.
- The committee has recommended better procurement planning, real-time monitoring, and improved Centre–State coordination.

### Key Issues Highlighted:

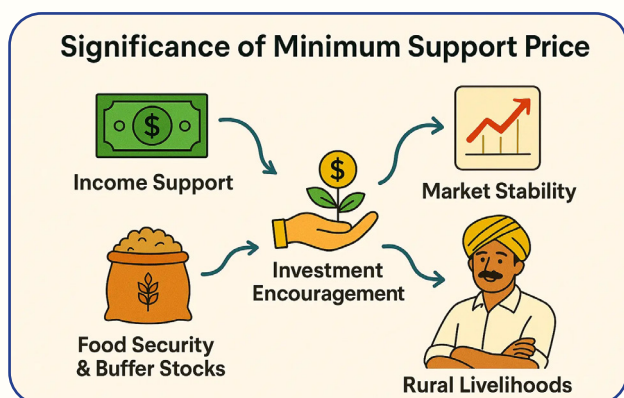
- The gap between estimates and actual procurement of crops indicates inefficient planning and forecasting, weakening food security buffer stocking. Procurement is concentrated in states like Punjab and Haryana, while eastern states like Bihar lag behind.
- Market dynamics play a role, with farmers preferring private buyers when market prices exceed MSP. Infrastructure constraints, such as storage shortages and logistics gaps, further hinder procurement. The focus on wheat and rice leads to cropping imbalance, neglecting other essential crops

### About Minimum Support Price:

- Minimum Support Price (MSP) is a pre-announced price at which the government purchases crops from farmers, acting as a safety net against market fluctuations.
- Announced annually for 23 crops, MSP is based on recommendations from the Commission for Agricultural Costs and Prices, ensuring at least a 50% margin over the cost of production.
- The procurement mechanism involves agencies like the Food Corporation of India (FCI) and state agencies, focusing on crops like wheat and paddy/rice. Procurement is open-ended for these crops, with the government buying all produce meeting quality standards.
- Factors affecting procurement include production levels, market surplus, MSP vs

market price, demand-supply conditions, and private trader participation.

- MSP ensures income security for farmers, prevents distress sales, supports the Public Distribution System (PDS), and maintains food security buffer stocks. For instance, the wheat MSP for 2026-27 is Rs.2,585/quintal, providing stable returns to farmers.



### Committee Recommendations:

- Strengthen procurement planning methodology
- Improve real-time monitoring of production and arrivals
- Enhance coordination with States
- Make procurement system more realistic and responsive

### Way Forward:

- Expand procurement in eastern India (Bihar, Odisha, etc.)
- Promote crop diversification (pulses, oilseeds)
- Improve digital tracking & transparency
- Strengthen storage and logistics infrastructure
- Reform MSP system towards income support + market reforms

### Conclusion:

The declining share of procurement despite high production highlights structural inefficiencies in India's MSP system. Strengthening procurement mechanisms and broadening its regional base is essential for farmer welfare,

food security, and sustainable agriculture.

## Ethanol Blending and India's Energy Security

### Context:

The ongoing Iran–West Asia conflict has triggered a major global energy crisis by disrupting oil supplies, especially through the Strait of Hormuz, which handles nearly 20% of global oil trade. Prime Minister Narendra Modi, speaking in Parliament on the West Asia war, emphasised that India's ramped-up ethanol blending programme over the last decade has helped reduce vulnerabilities arising from imported energy.

### About Ethanol Blending Programme (EBP):

- The Ethanol Blending Programme (EBP), launched in 2003, is a strategic initiative to mix ethanol (a renewable biofuel) with petrol. It aims to:
  - » Reduce dependence on crude oil imports
  - » Lower vehicular emissions
  - » Provide remunerative markets for farmers
- India has achieved a major milestone by reaching 20% blending (E20) nationwide by March 2025, ahead of the 2030 target. Blending has increased sharply from ~1.5% in 2014 to 20% in 2025, with a future target of 27% (E27) by 2030 under the National Policy on Biofuels.

### Significance of Ethanol Blending:

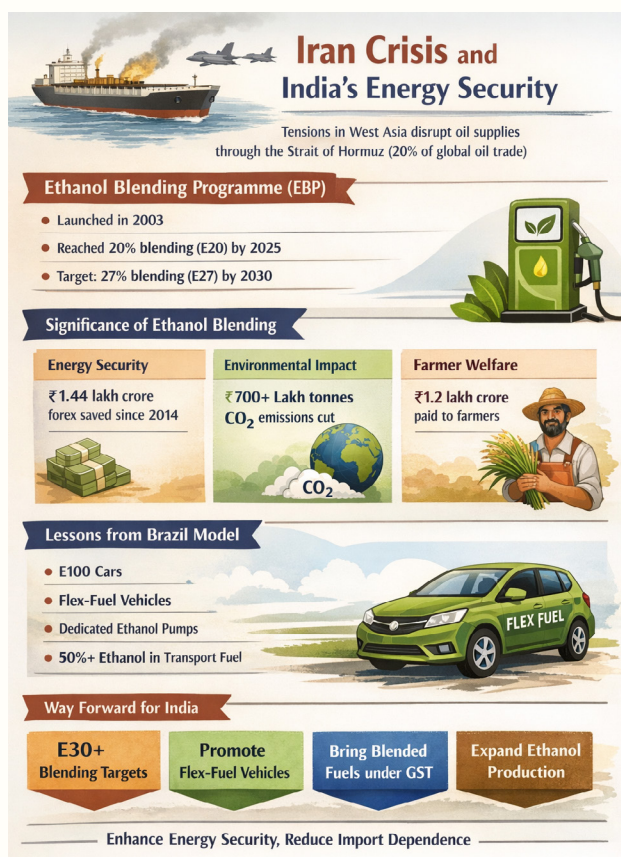
- » **Energy Security:** India imports ~87–88% of crude oil; ethanol blending has saved over Rs.1.44 lakh crore in forex since 2014.
- » **Environmental Impact:** Reduces carbon monoxide emissions by up to 50% and hydrocarbons by 20%, mitigating over 700 lakh tonnes of CO<sub>2</sub> emissions.
- » **Farmer Welfare:** Over Rs.1.2 lakh crore disbursed to farmers; ensures market for sugarcane, maize, and surplus

grains.

- Thus, ethanol blending integrates energy, environment, and agriculture policies.

### Policy Support:

- **National Policy on Biofuels (2018/2022):** Expanded feedstocks (molasses, maize, rice)
- **PM-JI-VAN Yojana:** Promotes 2G ethanol from crop residues
- **Interest Subvention Scheme:** 6% subsidy for distillery expansion
- GST reduction on ethanol (18% to 5%)
- Global Biofuels Alliance (2023) for international cooperation



### Brazil Model: Case Study

- Brazil's experience after the 1970s oil shocks offers a successful template. Under the Proálcool Programme (1975):
  - » Petrol blending with ethanol was mandated (minimum 11%)
  - » By 1979, E100 vehicles running on

hydrous ethanol were introduced

- » By 1985, ethanol production reached ~1,200 crore litres with dedicated fuel pumps
- » In 2003, flex-fuel vehicles enabled use of both petrol and ethanol blends
- By 2024, ethanol constituted over 50% of Brazil's transport fuel mix, with blending levels reaching 27–30%. This demonstrates the effectiveness of sustained policy, infrastructure, and technological innovation.

### India's Progress and Policy Gaps:

- India has significantly scaled up ethanol supply—from negligible levels a decade ago to over 1,000 crore litres, with increasing reliance on grain-based feedstock.
- However, key constraints remain:
  - » Lack of flex-fuel vehicles and conversion infrastructure
  - » Absence of separate dispensing systems (E30, E100)
  - » Taxation distortions (ethanol under GST, petrol outside GST)
  - » Need for coordinated action between government, auto industry, and oil marketing companies
- Addressing these issues is essential for expanding ethanol use beyond current limits.

### Way Forward:

- The Iran war provides a strategic opportunity for India to replicate the Brazil model. Key steps include:
  - » Increasing blending targets from E20 to E30+
  - » Promoting flex-fuel vehicles and retrofitting existing ones
  - » Rationalising taxation by bringing blended fuels under GST
  - » Expanding ethanol infrastructure and production sustainably

### Conclusion:

Global oil shocks, from the 1970s to the present Iran conflict, highlight the urgency of

energy diversification. By accelerating ethanol adoption, India can enhance energy security, reduce import dependence, and build long-term economic resilience.

## Annual Survey of Unincorporated Sector Enterprises (ASUSE) 2025

### Context:

Recently, The Annual Survey of Unincorporated Sector Enterprises (ASUSE) 2025 was released by the Ministry of Statistics and Programme Implementation. The survey highlights robust growth in establishments, employment and Gross Value Added (GVA) in India’s informal non-agricultural sector, indicating strong post-pandemic recovery and resilience.

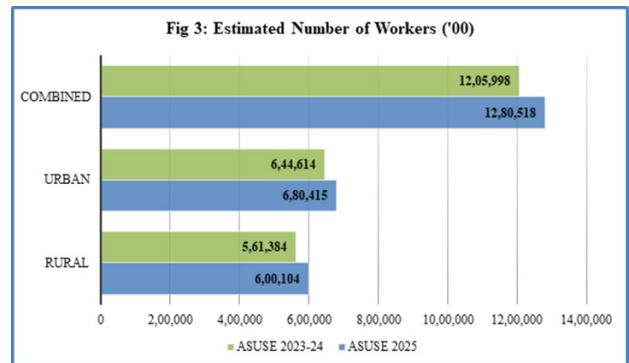
### What is the Unincorporated Sector?

- The unincorporated sector comprises small, informal, non-agricultural enterprises that are not registered as companies. These include units engaged in manufacturing, trade, and services (excluding construction).
- **Key features:**
  - » Operate as proprietorships, partnerships, cooperatives, etc.
  - » Characterised by low capital, labour-intensive operations
  - » Employ a large share of India’s informal workforce
  - » Act as linkages in domestic value chains, supporting the formal sector
- Thus, the sector is a critical pillar of employment and grassroots economic activity in India.

### Key Findings of ASUSE 2025:

- The ASUSE 2025 results reveal a broad-based expansion and increasing resilience of India’s unincorporated sector. The number of establishments grew from 7.34 crore to 7.92 crore, registering a 7.97% increase, indicating a strong revival and expansion of informal economic activity.

- Employment generation remained robust, with the sector employing 12.81 crore workers and adding over 74.52 lakh new jobs, reflecting a 6.18% growth. The “Other Services” segment emerged as a key driver, showing the highest growth in establishments (10.29%), highlighting the ongoing structural shift towards services.



- Economic output, measured by Gross Value Added (GVA), grew by 10.87%, reaching nearly Rs.19.93 trillion. This growth was primarily driven by the trade sector (16.77%), followed by manufacturing (8.52%) and services (7.36%), indicating strong market activity and demand recovery.
- Productivity indicators also improved, with GVA per worker rising to Rs.1.56 lakh, up from Rs.1.49 lakh, suggesting enhanced efficiency and better utilisation of labour and capital.
- A notable trend is the rapid digital adoption, with the share of establishments using the internet increasing sharply from 26.7% to 39.4%, reflecting growing integration with the digital economy and gradual formalisation.
- Further, women entrepreneurship showed a modest but positive rise, with women-owned enterprises increasing to 27%, indicating gradual progress in gender inclusion. Wage conditions also improved, as emoluments per hired worker rose by 3.88%, suggesting a moderate increase in income levels.
- Overall, the findings highlight that India’s informal sector is not only expanding in

size and employment but is also undergoing a qualitative transformation through improved productivity, digital penetration, and inclusivity, pointing towards a gradual transition from informality to semi-formalisation.

### Conclusion:

The ASUSE 2025 results underline that India's unincorporated sector remains a dynamic engine of employment and economic activity. While rising digital adoption and productivity gains are encouraging, challenges like low formalisation, limited credit access, and vulnerability persist. A targeted policy approach focusing on digital inclusion, financial access, and social security is essential to transform this sector into a stronger pillar of sustainable and inclusive growth.

## Corporate Laws (Amendment) Bill, 2026

### Context:

Recently, the Corporate Laws (Amendment) Bill, 2026 was introduced in the Lok Sabha by Nirmala Sitharaman. Following its introduction, the House referred the Bill to a 31-member Joint Parliamentary Committee (JPC) for detailed examination. The Committee, comprising 21 Lok Sabha Members of Parliament and 10 Rajya Sabha members, is expected to present its report during the upcoming Monsoon Session.

### What is the Corporate Laws (Amendment) Bill, 2026?

- The Bill seeks to amend two major legislations, the Companies Act 2013 and the Limited Liability Partnership Act 2008 with the objective of improving ease of doing business and simplifying regulatory processes.
- A key feature is the decriminalisation of minor corporate offences, where criminal penalties are replaced with monetary fines to reduce fear of prosecution.

- The Bill also introduces provisions for hybrid company meetings, updates norms relating to unpaid dividends and investor protection and proposes a framework to allow certain trusts regulated by SEBI or IFSC authorities to be converted into LLPs.



### Key Provisions of the Bill:

- The Bill introduces several reforms to modernise corporate governance. It redefines a “small company” by increasing the paid-up capital threshold from Rs.10 crore to Rs.20 crore and the turnover limit from Rs.100 crore to Rs.200 crore, thereby expanding the scope of simplified compliance.
- A major emphasis is placed on decriminalisation, where procedural and technical defaults are shifted to a civil penalty regime, distinguishing them from serious fraud-related offences.
- Further, the Bill relaxes Corporate Social Responsibility (CSR) norms by raising the threshold for forming a CSR Committee from Rs.5 crore to Rs.10 crore and extending the time limit for transferring unspent CSR funds from 30 to 90 days. It also promotes digital governance by recognising virtual and hybrid formats for Annual General Meetings (AGMs) and Extraordinary General Meetings (EGMs), while mandating at least one physical AGM every three years.
- Additionally, the Bill strengthens the role of the National Financial Reporting Authority (NFRA) by granting it the status of a body

corporate and establishing a dedicated fund. It also introduces a regulatory framework for entities operating in International Financial Services Centres (IFSCs), allowing transactions and filings in permitted foreign currencies.

**Significance and Implications:**

- The Bill is expected to significantly improve the business environment in India by reducing compliance burdens and encouraging entrepreneurship.
- Decriminalisation measures will foster a more trust-based regulatory regime, while reforms such as flexible share buybacks and fast-track mergers will enhance capital efficiency and corporate restructuring.
- Strengthening NFRA is likely to improve audit quality and boost investor confidence.
- Overall, the reforms align with India’s ambition of becoming a globally competitive investment destination.

**Conclusion:**

The Corporate Laws (Amendment) Bill, 2026 represents a major step towards simplifying India’s corporate legal framework and enhancing ease of doing business. However, concerns regarding potential over-delegation of powers and reduced accountability necessitate careful examination. The referral of the Bill to a Joint Parliamentary Committee ensures a consultative approach, which will be crucial in balancing regulatory flexibility with strong governance standards.

**RBI Payments Vision 2028**

**Context:**

Recently, the Reserve Bank of India (RBI) released the ‘Payments Vision 2028’ document, themed “Shaping India’s Payment Frontier.” This vision document outlines 15 specific initiatives to strengthen, secure, and expand India’s digital payment ecosystem globally by December 2028.

**Key Initiatives:**

- **User Empowerment:**
  - » **Switch On/Off’ Facility:** Currently available only for cards, this feature will now be extended to all digital payment modes (such as UPI, IMPS). It will enable users to activate or deactivate their digital transaction services at any time.
  - » **Payments Switching Service (PaSS):** This will facilitate easier bank account portability. If a customer changes their bank, their standing instructions (SI) and mandates (such as loan EMIs or bill payments) will automatically be transferred to the new bank account.

- **Fraud Prevention:**
  - » **Shared Responsibility Framework:** In cases of digital fraud, accountability will now be assigned to both the issuing and beneficiary banks, encouraging them to strengthen their security systems.
  - » **Cyber Key Risk Indicators (KRI):** A monitoring framework will be developed

for non-bank payment systems to detect cyber threats in a timely manner.

- **Innovation and Accessibility:**
  - » **e-Cheques:** The concept of electronic cheques will be introduced to combine the reliability of traditional paper cheques with digital speed.
  - » **MSME Support:** Interoperability among Trade Receivables Discounting System (TReDS) platforms will be ensured to facilitate easier access to credit for small industries.
- **Global Reach:**
  - » Emphasis has been placed on collaboration with foreign central banks and simplifying regulations to make cross-border payments faster and more affordable.

### Institutional Framework:

- The implementation of this vision will be overseen by the Payments Regulatory Board (PRB).
- It will be chaired by the RBI Governor. This board will replace the former 'Board for

Regulation and Supervision of Payment and Settlement Systems' (BPSS).

### Importance of 'Payments Vision 2028' Document:

- **Financial Inclusion:** This vision will help extend financial services to the last mile by increasing digital penetration in rural and underserved areas.
- **Digital Sovereignty:** Measures like 'DLEI' (Domestic Legal Entity Identifier) will enable India to track financial data and transactions more accurately.
- **Economic Impact:** Greater efficiency in payment systems will improve 'Ease of Doing Business' and reduce transaction costs.

### Conclusion:

Payments Vision 2028 is not just about technology, it is about deepening trust in digital transactions. It will not only move India towards a 'cashless' economy but also strengthen its leadership role in the global digital finance ecosystem.

# UPPCS

## PRELIMS TEST SERIES 2026

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Full Length	:12
Csat	:03
Current Affairs	:01

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# Defence and Internal Security

## Defence Forces Vision 2047: India's Military Modernisation Strategy

### Context:

The global security landscape of the 21st century is no longer confined to conventional warfare; rather, it has entered an era where “Grey-zone warfare”, an ambiguous space between peace and war has become increasingly relevant. Modern conflicts can now be conducted without formal declarations, where cyberattacks, disinformation, economic coercion, and technological disruptions serve as effective tools to weaken a nation.

Recently, India's Defence Minister, Rajnath Singh, released the document “Defence Forces Vision 2047: A Roadmap for a Future-Ready Indian Military.” This document presents a comprehensive blueprint for building a modern, integrated, technologically advanced, and multi-dimensional military force by the centenary of India's independence in 2047. It outlines a framework for the extensive modernisation, integration, and technological upgradation of the Indian Armed Forces. This is not merely a document of military reform but a reflection of India's aspirations for national security, strategic autonomy, and emergence as a global power.

### Vision 2047: A Comprehensive National Security Approach

- Defence Forces Vision 2047 is not just a military reform plan; it is a strategy to strengthen India's Comprehensive National Power. Its core objectives are:
  - » To make the Indian Armed Forces

integrated

- » To enhance their efficiency, agility, and rapid response capability
- » To equip them with modern technologies
- » To enable capabilities across all domains of warfare (land, air, sea, cyber, and space)
- This vision seeks to establish India by 2047 as a nation capable not only of defending its borders but also of playing the role of a global security provider.

### Need for Defence Forces Vision 2047:

- In the present international scenario, several factors have necessitated such a long-term defence vision:
  - » **China's Military and Technological Rise:** China's military, the People's Liberation Army (PLA), is rapidly modernising, particularly in cyber, space, and naval domains. This presents a long-term strategic challenge for India.
  - » **Possibility of a Two-Front War:** India must prepare for the possibility of simultaneous conflict along its western border (Pakistan) and northern border (China).
  - » **Rise of Technological Warfare:** Drone warfare, cyberattacks, and information warfare have fundamentally transformed the nature of conflict.
  - » **Changing Global Power Balance:** The growing competition between the United States and China, along with the emergence of a multipolar world order,

has made strategic autonomy even more crucial for India.

- These factors make it imperative for India to restructure its military framework in alignment with future challenges.

### Key Pillars of Vision 2047:

- **Jointness and Integrated Military Structure**
  - » One of the long-standing challenges of the Indian Armed Forces has been the lack of coordination among the three services.
  - » Vision 2047 proposes significant reforms:
    - Establishment of theatre commands
    - Joint operations
    - Integrated utilisation of resources
  - » This shift will move India from a service-based model (Army, Navy, Air Force) to a joint warfare system.
- **Multi-Domain Warfare Capability**
  - » Future warfare will not be limited to physical battlefields. Therefore, Vision 2047 emphasises equal focus on:
    - Land
    - Air
    - Sea
    - Cyber
    - Space
  - » Additionally, information and cognitive warfare are recognised as critical domains.
  - » This approach aims to transform India into a network-centric military power.
- **Technological Modernisation**
  - » Technology forms the core of this vision:
    - Artificial Intelligence (AI)
    - Drones and autonomous weapon systems
    - Big data and algorithmic analysis
    - Cybersecurity
  - » India is placing particular emphasis on drone and data-driven warfare capabilities. Concepts such as “Drone Force” and “Data Force” are expected to accelerate this transformation.
  - » This clearly indicates that future wars

will be fought not only by soldiers but also by algorithms and machines.

- **Self-Reliance and Defence Industrialisation**
  - » India has long been dependent on defence imports, affecting its strategic autonomy.
  - » Vision 2047 aims to:
    - Promote indigenous defence production
    - Encourage participation of the private sector and startups
    - Boost defence exports
  - » This aligns with the broader goal of Atmanirbhar Bharat and has the potential to transform India into a global defence manufacturing hub.
- **Whole-of-Nation Approach**
  - » A key feature of this vision is that it does not limit national security to the military alone. It encompasses:
    - Economy
    - Science and technology
    - Diplomacy
    - Industrial base
  - » This integrated approach is a crucial step toward building India’s overall national strength.

### Phased Implementation:

- The vision is planned to be implemented in three phases:
  - » **Short-term (2025–2032):** Structural reforms and foundational development
  - » **Medium-term (2032–2037):** Expansion of jointness and technological capabilities
  - » **Long-term (2037–2047):** Fully modernised and integrated military force
- This phased approach ensures that transformation remains systematic, sustainable, and realistic.

### Strategic Significance:

- **Enhanced Deterrence Capability:** A modern, integrated, and technologically advanced military will significantly strengthen India’s deterrence. Advanced weapon systems,

along with cyber and space capabilities, will discourage adversaries from aggressive actions.

- **Expansion of Global Role:** The vision can elevate India from a regional power to a credible net security provider, particularly in the Indo-Pacific region, strengthening its diplomatic standing and strategic partnerships.
- **Economic Benefits:** Investment in the defence sector will generate employment, foster technological innovation, and boost industrial growth. Increased defence exports will also contribute to foreign exchange earnings.

### Key Challenges:

- **Limited Defence Budget:** Such a large-scale transformation requires substantial financial resources, while current defence spending remains constrained.
- **Inter-Service Rivalry:** Achieving jointness among the Army, Navy, and Air Force is complex and may face institutional resistance and traditional barriers.
- **Technological Dependence:** India still relies on foreign technologies in critical areas such as advanced weapon systems, engines, and semiconductors, limiting strategic autonomy.
- **Human Resource Reskilling:** There is a need to develop highly skilled personnel in AI, cybersecurity, and data-driven warfare, requiring major reforms in training frameworks.

### Way Forward:

- To effectively realise the Defence Forces Vision 2047, a multi-dimensional and coordinated approach is essential. Defence budget allocations must be increased to support modernisation, technological infrastructure, and advanced weapon systems. Promoting research and development (R&D) is crucial to reduce foreign dependence and build indigenous capabilities.

- Ensuring active participation of the private sector and startups will be vital for innovation and technological advancement. Additionally, the timely implementation of theatre commands is necessary to achieve true jointness and optimal utilisation of resources. Finally, strengthening skill development, especially in artificial intelligence, cybersecurity and data analytics is essential to prepare human resources for future warfare.

### Conclusion:

Defence Forces Vision 2047 is a transformative document that redefines India's military power. It not only addresses present challenges but also prepares the nation for future uncertainties. If implemented effectively, by 2047 India will not only ensure the security of its borders but also emerge as a decisive, responsible, and influential global power. Ultimately, this vision represents a historic initiative to transform India from a "security consumer" to a "security provider," elevating its sovereignty, stability, and global stature to new heights.

# Short Issues

## DRDO Successfully Tests VSHORADS: Boost to India's Air Defence

### Context:

Recently, India's Defence Research and Development Organisation (DRDO) has successfully completed three consecutive flight-trials of the Very Short-Range Air Defence System (VSHORADS), an indigenously designed air defence missile system, signalling a significant boost to the country's short-range aerial threat response capability. The tests were conducted from the Integrated Test Range (ITR), Chandipur, off the coast of Odisha.

### About VSHORADS:

- **Indigenous Development:** VSHORADS is a man-portable air defence system designed and developed indigenously by DRDO's Research Centre Imarat (RCI) in collaboration with other DRDO laboratories and Indian industry partners.
- **Multi-Service Utility:** The system has been developed to meet the operational requirements of all three branches of the Indian Armed Forces — the Army, Navy and Air Force — thereby enhancing the nation's layered air defence architecture.

### Strategic Importance in India's Defence Architecture:

India's air defence strategy is structured as a multi-layered network to address threats across different ranges:

Layer	System Examples	Role
Long-Range	S-400 Triumf (imported), future DRDO systems	Counters distant and high-altitude threats
Medium-Range	Akash surface-to-air missile	Protects strategic areas and formations

Short-Range	Quick Reaction Surface-to-Air Missile (QRSAM)	Guards moving forces
Very Short-Range	VSHORADS	Shields frontline units against close-in threats

VSHORADS fills a critical gap in this architecture by protecting ground forces and sensitive installations from threats that come too close for longer-range systems to respond effectively, especially at low altitudes or in challenging terrain such as mountainous borders.

**DRDO Successfully Tests VSHORADS: Boost to India's Air Defence**

**About VSHORADS:**

- Indigenously Developed by DRDO
- Man-Portable Air Defence System
- For Army, Navy & Air Force

**India's Air Defence Layers**

- Long-Range** S-400 System
- Medium-Range** Akash Missile
- Short-Range** QRSAM
- Very Short-Range** VSHORADS

**Strategic Significance**

- Enhanced Battlefield Survival**
  - Defends Against Drones & Low-Flying Threats
- Atmanirbhar Bharat**
  - Indigenous Defence Technology
- Tri-Service Utility**
  - For Army, Navy & Air Force

**Boost to India's Air Defence**

Strengthening the Nation's Multi-Layered Air Defence Capability

### Strategic Significance:

- **Enhanced Battlefield Survival:** The system provides troop formations and key assets with responsive defence against fast, low-flying aerial threats, a capability

that is increasingly important given the proliferation of drones, loitering munitions and helicopters in modern conflicts.

- **Self-Reliance (Atmanirbhar Bharat):** VSHORADS underscores India's push towards indigenous defence technology development, reducing reliance on foreign imports such as the earlier Russian-origin shoulder-fired systems.
- **Tri-Service Utility:** Designed to meet the needs of the Army, Navy and Air Force, VSHORADS complements other Indian air defence systems and strengthens joint operational readiness.

### Conclusion:

The successful flight-trials of the VSHORADS reflect a significant milestone in India's air defence capabilities, reinforcing the multi-layered defence architecture against evolving aerial threats. By validating the system in its final deployment configuration with realistic operational scenarios, DRDO has demonstrated India's growing competence in developing indigenous, cutting-edge defence technologies that contribute to national security and strategic autonomy.

## INS Anjadip Commissioned

### Context:

The INS Anjadip, an indigenously designed anti-submarine warfare vessel of the Anti-Submarine Warfare Shallow Water Craft (ASW-SWC) project, was officially commissioned into the Indian Navy on 27 February 2026 at Chennai Port.

### About INS Anjadip and Its Capabilities:

- **Class & Role:** INS Anjadip is the fourth vessel in the ASW-SWC series and is engineered as a shallow-water anti-submarine warfare platform to detect, track and neutralise enemy submarines operating in littoral (coastal) waters, a domain of growing strategic importance.

- **Design & Indigenous Content:** Built with over 80 % indigenous content by Garden Reach Shipbuilders & Engineers (GRSE), Kolkata, in collaboration with Larsen & Toubro Shipbuilding, Kattupalli, the vessel reflects India's emphasis on self-reliance in defence production.
- **Technical Profile:** The 77-metre, ~1,400-tonne warship features a modern anti-submarine warfare suite, including hull-mounted sonar Abhay, lightweight torpedoes, ASW rockets and an advanced combat management system. Its high-speed water-jet propulsion enables rapid manoeuvring and response in shallow waters.
- **Operational Roles:** Beyond its primary role in anti-submarine warfare, INS Anjadip is capable of coastal surveillance, low-intensity maritime operations and search-and-rescue missions, enhancing the Navy's overall operational flexibility.

### Strategic Significance:

- **Strengthening Maritime Security:** The commissioning bolsters India's anti-submarine warfare (ASW) capabilities along its eastern seaboard, particularly in shallow coastal waters, which are deemed vulnerable to sub-surface threats.
- **Enhancing Littoral Defence:** As submarine operations grow in complexity and frequency across the Indo-Pacific, platforms like INS Anjadip contribute to a layered maritime defence posture, ensuring effective surveillance and deterrence in India's maritime neighbourhood.
- **Boost to Atmanirbhar Bharat in Defence:** The vessel's high indigenous content underscores progress towards self-reliance in naval shipbuilding, aligning with the government's Atmanirbhar Bharat policy and reducing dependence on foreign platforms.
- **Fleet Expansion and Future Trajectory:** The induction of INS Anjadip comes at a time when the Indian Navy aims to expand to a 200-plus ship force by 2035, with plans

to induct numerous other vessels in 2026, reflecting a sustained push to modernise and grow maritime capabilities.

**Conclusion:**

The commissioning of INS Anjadip at Chennai Port marks a key milestone in India’s ongoing efforts to enhance its anti-submarine warfare capacity, strengthen coastal defence and advance its strategic interests in the Indo-Pacific region. The induction of this indigenous “Dolphin Hunter” underscores a broader drive towards self-reliant defence manufacturing and consolidated maritime security architecture, positioning the Indian Navy to meet evolving challenges in under-sea and littoral warfare environments.

**India Acquires Six ALH Mk-III Helicopters to Boost Maritime Security**

**Context:**

The Ministry of Defence (MoD) recently signed defence contracts worth Rs.5,083 crore to strengthen India’s maritime security and air-defence capabilities. The agreements include the procurement of six Advanced Light Helicopters (ALH) Mk-III (Maritime Role) for the Indian Coast Guard and the acquisition of Vertical Launch (VL)–Shtil surface-to-air missiles for the Indian Navy.

**About ALH Mk-III (Maritime Role) Acquisition:**

- The contract for six ALH Mk-III (MR) helicopters, valued at Rs.2,901 crore, has been signed with Hindustan Aeronautics Limited (HAL), Bengaluru under the Buy (Indian-Indigenously Designed, Developed and Manufactured) category.
- **Key features of ALH Mk-III:**
  - » Twin-engine helicopters equipped with advanced avionics and mission systems.
  - » Capable of maritime surveillance, search and rescue, coastal security, and

- disaster response operations.
- » Able to operate from shore-based airfields as well as ships at sea.
- » Includes operational role equipment, engineering support package, and performance-based logistics support.
- The induction of these helicopters will significantly enhance the Indian Coast Guard’s capability to protect offshore installations, artificial islands, fishermen, and the marine environment.

**SECURING THE SEAS**  
**₹5,083 Cr DEFENCE BOOST**

**6 ALH MK-III HELICOPTERS (HAL)**

- ▲ Cost: ₹2,901 Cr
- Role: Maritime Security & Search & Rescue
- ▲ User: Indian Coast Guard
- ⊕ Tech:
  - Twin-Engine Reliability
  - State-of-the-art Maritime Reconnaissance
  - Protection for offshore assets & fishermen

**THE ASSETS**

**SHTIL MISSILE SYSTEMS**

- ▲ Cost: ₹2,182 Cr
- Role: Vertical Launch Air Defence
- ▲ User: Frontline Indian Navy Warships
- ⊕ Tech:
  - Rapid-Reaction Air Defence
  - All-Weather engagement capability
  - Impenetrable shield against aerial threats.

**THE IMPACT**

**AATMANIRBHAR BHARAT IN ACTION**

- 65 LAKH+ Man-hours of employment to Indians
- 200+ Indian MSMEs integrated into the supply chain
- 100% Indian manufacturing, empowering Local Talent

**About VL-Shtil Missile System for Indian Navy:**

- A parallel contract worth Rs.2,182 crore has been signed with JSC Rosoboronexport (Russia) for the procurement of Surface-to-Air Vertical Launch – Shtil missiles.
- **The VL-Shtil system will:**
  - » Enhance the air-defence capabilities of frontline naval warships.
  - » Provide rapid-reaction, all-weather engagement capability against aerial threats.
  - » Strengthen the layered air-defence architecture of the Indian Navy in contested maritime environments.

- The deal also highlights the longstanding defence partnership between India and Russia, built on strategic cooperation and mutual trust.

**Strategic Significance:**

- The acquisition strengthens India’s maritime domain awareness and coastal security architecture. With rising challenges such as piracy, illegal fishing, maritime disasters, and strategic competition in the Indian Ocean Region, advanced helicopters will enable rapid surveillance and response capabilities.
- The contracts also support indigenous defence manufacturing under the Aatmanirbhar Bharat and Make in India initiatives, as the ALH Mk-III helicopters are designed and produced domestically by HAL. Participation of MSMEs in the supply chain will further strengthen India’s defence industrial base.

**Conclusion:**

The Rs.5,083-crore defence contracts represent a significant step toward modernising India’s maritime security infrastructure. By enhancing the operational capabilities of the Indian Coast Guard and Navy while promoting domestic defence manufacturing, the move reflects India’s broader strategy of strengthening self-reliance, maritime security, and defence preparedness.

**S-400 Air Defence Systems**

**Context:**

India is set to receive the remaining two units of the S-400 Triumf from Russia in 2026, with one expected in April and the final delivery scheduled for November. The delivery timeline has been expedited after earlier delays caused by supply chain disruptions and the Russia-Ukraine War.

**About the S-400 Air Defence System:**

- The S-400 Triumf (NATO designation: SA-21 Growler) is one of the world’s most

advanced long-range surface-to-air missile (SAM) systems.

- It is capable of detecting aerial threats up to 600 km away and engaging targets at ranges of up to 400 km and altitudes of 30 km.
- Designed for layered air defence, it can neutralize a wide range of threats, including aircraft, drones, and ballistic and cruise missiles.

**S-400 TRIUMF  
INDIA'S SKY SHIELD**

India's frontline air defence against enemy drones and missiles

<b>TYPE</b> Mobile surface-to-air defence system	<b>OPERATIONAL RANGE</b> 400 km	<b>UNIT COST</b> \$1.25 bn
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**DEPLOYMENT TIME**  
5 min

**CAN DETECT**  
Aircraft, drones, cruise missiles, and ballistic missiles

**SURVEILLANCE RANGE**  
360 degree

S-400 RANGE WITH DIFFERENT MISSILES		
9M96E	→	120 km
48N6E2	→	200 km
48N6DM	→	250 km
40N6E	→	400 km

**Key Features and Capabilities:**

- The system is equipped with advanced tracking capabilities, allowing it to monitor up to 300 targets simultaneously and engage around 36 threats at once.
- It uses multiple types of missiles, such as the 40N6 and 48N6, to strike targets at varying distances and altitudes, including high-speed threats moving up to Mach 14. Its high mobility enables rapid deployment, making it operational within minutes.
- Additionally, the S-400 is designed to function effectively in electronic warfare conditions, with sophisticated radars capable of resisting jamming.
- Its versatility allows it to counter a wide

spectrum of aerial threats, from fighter jets to advanced missile systems.

### S-400 and India:

- India signed a \$5.43 billion deal with Russia in 2018 for five S-400 squadrons. So far, three units have already been inducted into service, with the remaining two expected soon.
- Known as “Sudarshan Chakra” in India, the system is strategically deployed to strengthen air defence against potential threats from neighbouring countries such as China and Pakistan.
- Despite the risk of U.S. sanctions under CAATSA, India proceeded with the deal, highlighting its strategic autonomy in defence procurement.

### About India–Russia Defence Relations:

- Russia continues to remain a key defence partner for India, accounting for a significant share of its military inventory.
- The partnership has evolved beyond a traditional buyer-seller relationship to include joint development and production projects such as BrahMos missiles and AK-203 rifles.
- A long-term military-technical cooperation agreement for 2021–2031 further reinforces this strategic relationship, especially under the “Make in India” initiative.

### Challenges and Strategic Implications:

- Despite strong ties, challenges persist. India is gradually diversifying its defence imports by engaging with countries like the United States, France, and Israel. Western sanctions on Russia have complicated payment mechanisms and supply chains, raising concerns about timely deliveries. Additionally, Russia’s growing proximity to China poses strategic concerns for India.

### Conclusion:

The timely delivery of the remaining S-400 systems will significantly enhance India’s air defence capabilities and strengthen its strategic

deterrence. While India continues to diversify its defence partnerships, Russia remains a crucial partner in ensuring advanced military capability and maintaining geopolitical balance.

## Delivery of Three Major Warships Strengthens India’s Maritime Power

### Context:

Recently, Kolkata-based Garden Reach Shipbuilders & Engineers Limited (GRSE) set a new record by delivering three major naval platforms, INS Dunagiri, INS Sanshodhak, and INS Agray to the Indian Navy simultaneously. This marks the first instance when an Indian shipyard has delivered three different classes of warships on the same day.

### Strategic Analysis of the Warships:

- **INS Dunagiri (P17A Stealth Frigate):**
  - » It is the second advanced stealth frigate built under ‘Project 17A’.
  - » **Features:** Equipped with advanced radar systems, low radar signature (stealth), and lethal weapon systems.
  - » **Significance:** Enhances India’s deterrence capability in the Indian Ocean Region (IOR).
- **INS Sanshodhak (Survey Vessel):**
  - » It is the fourth ship among the four ‘Survey Vessel Large’ (SVL) projects.
  - » **Role:** Its primary function is to conduct hydrographic surveys in coastal and deep waters.
  - » **Significance:** Provides critical data for accurate maritime mapping, safe navigation, and future naval strategies. It also strengthens the Blue Economy.
- **INS Agray (ASW SWC):**
  - » It is an Anti-Submarine Warfare Shallow Water Craft.
  - » **Role:** Designed for anti-submarine operations and low-intensity maritime missions in coastal waters. It is equipped

with modern sonar and surveillance systems.

- » **Significance:** Strengthens India's coastal security and capability to counter submarine threats.

**Delivery of Three Major Warships:**  
INS Dunagiri, INS Sanshodhak & INS Agray  
Strengthen India's Maritime Power

Delivered by GRSE on the Same Day  
First Indian Shipyard to Deliver Three Different Warships Simultaneously

INS Dunagiri (P17A Frigate)	INS Sanshodhak (Survey Vessel)	INS Agray (ASW Craft)
<ul style="list-style-type: none"> <li>• Advanced Stealth Frigate</li> <li>• Enhances IOR Deterrence</li> </ul>	<ul style="list-style-type: none"> <li>• Hydrographic Survey Ship</li> <li>• Critical for Maritime Mapping</li> </ul>	<ul style="list-style-type: none"> <li>• Anti-Submarine Warfare</li> <li>• Coastal Defense</li> </ul>

**Key Highlights**

- 75% Indigenous Content Boosting MSMEs
- Make in India & Atmanirbhar Bharat
- Reduced Import Dependence

**Strategic Significance**

Maritime Security	Blue Economy	ASW Capability
Securing Sea Lanes	Support for Hydrography & Trade	Counter Submarine Threats

**Strengthening India's SAGAR Vision**  
~ Security And Growth For All in the Region ~

- Net Security Provider
- HADR Operations
- Global Defence Export Focus

## 'Atmanirbhar Bharat' and Defence Indigenisation:

- This achievement is not limited to shipbuilding alone but reflects the success of Make in India and Atmanirbhar Bharat initiatives.
  - » **Indigenous Content:** More than 75% indigenous materials have been used in these ships, boosting MSMEs and local industries.
  - » **Reduced Import Dependence:** Earlier, India depended on Russia and Western countries for major warships. Now, the entire process from design to

construction is being carried out domestically.

## Growing Capability and Strategic Role of GRSE:

- Garden Reach Shipbuilders & Engineers Limited has delivered a total of 118 warships so far, out of which 80 are for the Indian Navy. The simultaneous delivery of three platforms highlights the following aspects:
  - » **Improved Project Management:** Reduction in gestation period for building complex warships.
  - » **Modern Infrastructure:** Increased production capacity through the use of Integrated Construction methods.
  - » **Blue Economy and Maritime Security:** These ships are not only meant for warfare but are also capable of securing sea trade routes and performing Humanitarian Assistance and Disaster Relief (HADR) operations.

## Conclusion:

The simultaneous delivery of three warships symbolizes India's maritime strength, industrial capability, evolving geopolitical competition in the Indian Ocean, and strategic self-reliance. The delivery of these ships by GRSE is a significant step towards realizing India's SAGAR (Security and Growth for All in the Region) vision. It not only strengthens India's role as a Net Security Provider but also enhances its credibility in the global defence export market.

# Place in News

## Strait of Hormuz (Persian Gulf)

Iran has effectively restricted or blocked traffic through the strait in the ongoing war with the US and allies, using control of this narrow waterway as a strategic lever over global energy supplies.

### About Strait of Hormuz:

- The Strait of Hormuz is a narrow, strategically vital waterway connecting the Persian Gulf with the Gulf of Oman and the Arabian Sea. Situated between Iran to the north and Oman and the United Arab Emirates to the south, it is only 33 to 39 kilometers wide at its tightest point, with shipping lanes measuring just 3 kilometers wide in each direction.
- It is widely regarded as the world's most crucial oil chokepoint, as roughly 20-25% of the world's total seaborne oil and 20% of liquefied natural gas (LNG) pass through it daily. The route is the only sea passage from the Persian Gulf to the open ocean, making it essential for energy exports from Saudi Arabia, Iran, Iraq, Kuwait, and Qatar.



## Bab el Mandeb Strait (Red Sea / Gulf of Aden)

Iran and its allied forces (including the Yemen based Houthis) have threatened disruption or closure of this route in retaliation for Western actions.

### About Bab el-Mandeb Strait:

- The Bab el-Mandeb Strait, often referred to in Arabic as the "Gate of Tears" due to its treacherous navigation and history of shipwrecks, is a vital maritime chokepoint connecting the Red Sea to the Gulf of Aden and the Indian Ocean.
- Situated between Yemen on the Arabian Peninsula and Djibouti/Eritrea on the Horn of Africa, this narrow waterway, approximately 26-30 km wide, is a critical artery for global commerce and energy security.
- Following the opening of the Suez Canal in 1869, the strait became indispensable, forming the shortest sea route between Europe and Asia. It handles roughly 10% to 12% of global maritime trade and facilitates the transport of



millions of barrels of oil and liquefied natural gas (LNG) daily.

- Geographically, Perim Island divides the strait into two channels, with the western channel (Dact-el-Mayun) used for international shipping. Its geopolitical significance is highlighted by the presence of foreign military bases in nearby Djibouti, designed to protect shipping lanes.

## Kharg Island (Persian Gulf)

The US has conducted strikes on military targets here, though efforts so far have avoided direct damage to oil export facilities.

### About Kharg Island:

- Kharg Island is a critical 8-square-mile Iranian coral island in the northern Persian Gulf, serving as the nation's primary oil export terminal, handling up to 90% of its crude exports.
- Heavily militarized by the Islamic Revolutionary Guard Corps, it hosts massive storage facilities and handles large tankers, acting as an economic lifeline and a major target in regional conflicts.



## Diego Garcia

Recently, Diego Garcia was targeted by Iran's ballistic missiles (from a distance of approximately 4,000 km).

### About Diego Garcia:

- Diego Garcia is a remote, coral atoll in the central Indian Ocean and the largest island of the Chagos Archipelago. It hosts a strategically vital Naval Support Facility jointly operated by the United Kingdom and the United States, providing a critical logistics hub for military operations across the Middle East, Indo-Pacific, and Africa.
- In May 2025, the UK and Mauritius signed a treaty transferring sovereignty of the Chagos Archipelago to Mauritius. Under the agreement, the UK retains control of Diego Garcia for 99 years to ensure uninterrupted operation of the base.
- The base includes a deep-water port for aircraft carriers and a large airfield hosting long-range bombers and surveillance aircraft.
- There are no permanent residents, as the original Chagossians were forcibly relocated in the 1960s–70s. Access is strictly limited to authorized personnel, with no commercial flights or tourism.



# Power Packed News

## Global Economic Outlook and India's Growth

- Recently, the Organisation for Economic Co-operation and Development (OECD), in its latest assessment, stated that India will remain the fastest-growing major economy in the world. According to the report, India's GDP growth rate is projected to be 7.6% in 2025–26, while it is expected to decline to 6.1% in 2026–27 and show a marginal improvement to 6.4% in 2027–28.
- However, several challenges are emerging at the global level. Rising tensions in the Middle East and disruptions in the Strait of Hormuz have affected energy supplies, increasing pressure on global inflation. The supply of essential commodities such as fertilizers has also been impacted.
- The report further states that China's economic growth will continue to slow, declining from 5.0% in 2025 to 4.4% in 2026 and 4.3% in 2027. Meanwhile, global GDP growth is projected at 2.9% in 2026 and 3% in 2027. Investment in the technology sector will support growth, but geopolitical uncertainties will remain a major risk to global demand and economic stability.

## Periodic Labour Force Survey (PLFS) 2025 Report

- Recently, the Ministry of Statistics and Programme Implementation released the annual report of the Periodic Labour Force Survey (PLFS) 2025, highlighting significant structural changes in India's labour market.
- According to the report, the unemployment rate (usual status) declined to 3.1% in 2025, nearly half of 6.0% recorded in 2017–18. Among youth aged 15–29, the unemployment rate decreased to 9.9%, while it is even lower (8.3%) in rural areas.
- Female Labour Force Participation Rate (FLFPR) has shown a notable increase and remains stable at around 40%. There has also been improvement in the quality of employment— the share of regular salaried jobs has increased to 23.06%, indicating formalisation.
- Sectoral shifts show that dependence on agriculture has declined to 43%, while the contribution of the manufacturing sector has increased to 12.1%. Additionally, the reporting cycle has been revised to January–December. However, unemployment among highly educated graduates remains at 11.2%, highlighting the challenge of skills mismatch.

## Five Key Reforms in Indian Railways

- Recently, Railway Minister Ashwini Vaishnaw announced five key reforms in Indian Railways under the “52 Weeks, 52 Reforms” initiative. These reforms aim to enhance passenger convenience, transparency, and efficiency.
- The ticket cancellation process has been simplified with new rules— minimal charges for cancellations made more than 72 hours in advance; 25% deduction between 72 to 24 hours; 50% refund between 24 to 8 hours; and no refund if cancelled less than 8 hours before departure.
- Additionally, counter tickets can now be cancelled at any railway station across the country, and passengers can change their boarding station up to 30 minutes before train departure.
- To strengthen freight transport, new single-stack and double-stack wagons have been introduced. Moreover, EPC contracts now mandate 20% prior experience. A 2% bid security has been introduced in the tendering process, and bid capacity evaluation has been made mandatory for projects exceeding Rs.10 crore.

## Gujarat Uniform Civil Code, 2026

- Recently, the Gujarat Legislative Assembly passed the 'Gujarat Uniform Civil Code, 2026' Bill by a majority. The Bill was introduced by Chief Minister Bhupendra Patel, just one week after the final report of the expert committee constituted by the state government.
- This law seeks to establish a uniform legal framework for personal laws such as marriage, divorce, inheritance and live-in relationships. With this initiative, Gujarat has become the second state after Uttarakhand (2024) to implement the Uniform Civil Code.
- According to the Bill, registration of live-in relationships will be mandatory and a clear procedure for their termination has also been defined. Additionally, bigamy has been prohibited, ensuring that remarriage during the lifetime of a spouse will be considered illegal. For the validity of marriage, it has been made mandatory that both parties must be unmarried.
- However, certain groups, including Scheduled Tribes, have been exempted from this law. The law will apply to residents of Gujarat, whether they are within or outside the state. Its objective is to promote legal equality and social justice.

## Appointment of Governors and Lieutenant Governors

- Recently, President Droupadi Murmu has undertaken a major reshuffle in the appointment of Governors and Lieutenant Governors across several states and Union Territories. In this context, R. N. Ravi has been appointed as the Governor of West Bengal, Shiv Pratap Shukla in Telangana, Jishnu Dev Varma in Maharashtra, and Lieutenant General Syed Ata Hasnain in Bihar. Additionally, Nand Kishore Yadav has been appointed in Nagaland and Kavinder Gupta in Himachal Pradesh.
- In Union Territories, former diplomat Taranjit Singh Sandhu has been appointed as the Lieutenant Governor of Delhi, while Vinai Kumar Saxena has been transferred to Ladakh. Additionally, Rajendra Vishwanath Arlekar has been given additional charge of Tamil Nadu.
- Constitutionally, the Governor is the head of a state, appointed by the President under Article 155, and holds office at the pleasure of the President as per Article 156. The Governor performs important functions such as appointing the Chief Minister, conducting the proceedings of the Legislative Assembly, and recommending President's Rule under Article 356.

## Nivesh Mitra 3.0: Uttar Pradesh's Digital Investment Platform

- On 24 March, the Chief Minister of Uttar Pradesh, Yogi Adityanath, launched the 'Nivesh Mitra 3.0' digital platform to simplify and enhance the investor experience. This initiative is a significant step towards making the investment process in the state more transparent, faster, and efficient.
- On this occasion, the 'UP Private Business Park Development Scheme-2025' and the 'Plug-and-Play Industrial Sheds Scheme' were also presented, aimed at promoting industrial development. During the event, more than 85 Letters of Comfort, eligibility certificates, and subsidies worth Rs.2,781 crore were distributed.
- 'Nivesh Mitra 3.0' includes features such as an AI-based chatbot, real-time SMS alerts, and an integrated application system, enabling investors to obtain approvals from multiple departments on a single platform. This eliminates the need for repeated visits to offices.
- According to the state government, these reforms have reduced departmental processes by 25%, documentation by 15%, and other procedural steps by approximately 20%, thereby making the investment environment more conducive.

## RELIEF Scheme

- Recently, the Union Cabinet has approved the 'Export Promotion Mission (EPM)' for the period from FY 2025–26 to 2030–31. Under this mission, the 'RELIEF' (Resilience & Logistics Intervention for Export Facilitation) scheme has been launched, aiming to mitigate the impact of disruptions in global supply chains. In particular, the Red Sea crisis and rising geopolitical tensions in West Asia have led to increased freight costs and insurance premiums, placing an additional burden on exporters.
- A financial allocation of Rs.497.10 crore has been made for this scheme and it will be implemented by the Export Credit Guarantee Corporation of India, which will be responsible for claim verification and distribution of financial assistance.
- From a strategic perspective, this scheme will act as a "protective shield" in achieving India's \$2 trillion export target by 2030. It particularly empowers MSMEs and first-time exporters, who are more vulnerable to global shocks.
- Overall, the EPM is an important step towards building resilience in India's export system, maintaining competitiveness and strengthening initiatives like 'Atmanirbhar Bharat' and 'Make in India' at the global level.

## Sea Dragon 2026 Exercise

- Recently, the 'Sea Dragon 2026' exercise was conducted off the coast of Guam in the Western Pacific Ocean. It is an important multinational Anti-Submarine Warfare (ASW) exercise led by the United States Navy.
- Navies of India, the United States, Japan, Australia (Quad countries), and New Zealand participated in this exercise. Its primary objective is to enhance coordination and interoperability among member nations to address maritime security challenges in the Indo-Pacific region.
- The Indian Navy deployed its advanced P-8I long-range maritime patrol aircraft in this drill. Known as a "submarine hunter," this aircraft is equipped with advanced sensors and torpedoes. The Indian crew demonstrated their capability to track and neutralize simulated submarine targets. This initiative is part of broader efforts to ensure regional stability, collaborative defense strategy, and the security of sea lanes.

## Jnanpith Award 2025

- The 60th Jnanpith Award for the year 2025 has been announced to be conferred upon renowned Tamil poet and lyricist Vairamuthu. This honor is being given in recognition of his outstanding contribution to Tamil literature and his distinctive poetic style.
- The Jnanpith Award is considered the highest literary honor in India, which carries a cash prize of Rs.11 lakh, a bronze statue of Goddess Saraswati, and a citation. Vairamuthu is regarded as one of the leading figures in contemporary Tamil literature, who has vividly portrayed human emotions, social realities, and nature in his works.
- Over a literary career spanning more than four decades, he has made remarkable contributions in poetry, lyrics, and prose. His major works include "Kallikkattu Ithikasam," "Karuvachi Kaviyam," and "Thanneer Desam." He has received several prestigious honors, including seven National Film Awards, and has also been awarded the Padma Shri and Padma Bhushan by the Government of India.

## “CHYIMI” Film Receives International Recognition

- Recently, the animated short film “Chyimi” received the ‘Best Director’ award at the New York Short Animation Festival 2026. This film has given Indian animation a new identity on the global stage. The film has been directed by Partha Sarathi Mahanta, who is currently serving as an IGP in Assam Police. This achievement reflects the growing international presence of Indian creativity and the animation industry.
- This festival provides a platform for animators from around the world and is known for promoting creativity, originality, and the art of storytelling. “Chyimi” has been especially appreciated for its excellent artistic direction and impactful narrative.

## Sahitya Akademi Awards 2025

- Recently, the Sahitya Akademi announced its annual awards for 2025 in 24 Indian languages.
- For Hindi, renowned writer Mamta Kalia has been selected for her memoir “Jite Ji Allahabad,” which vividly portrays the literary and cultural heritage of Prayagraj.
- In the English category, former diplomat Navtej Sarna has been honored for his historical novel “Crimson Spring,” which is based on the background of the Jallianwala Bagh massacre. In Hindi, Sushil Shukla received the Bal Sahitya Award for “Ek Bate Barah” (story).
- The Sahitya Akademi was established in 1954. It is an autonomous body under the Ministry of Culture. Apart from the main award, ‘Yuva Puraskar’ and ‘Bal Sahitya Puraskar’ are also given. Books considered for the awards must have been published during the five years preceding the year of the award (currently 2019–2023).
- The Akademi gives awards in 24 languages, including 22 languages listed in the Eighth Schedule of the Constitution, along with English and Rajasthani. These awards not only promote linguistic excellence but also strengthen the idea of “unity in diversity” in India.

## Khelo India Tribal Games (KITG) 2026

- The first edition of the Khelo India Tribal Games (KITG) 2026 is being held in Chhattisgarh. The event commenced on 25 March and will continue until 6 April 2026.
- Around 2,500 to 3,000 tribal athletes from 30 states and Union Territories across the country are participating in this event. Competitions are being conducted at three major centers in Chhattisgarh- Raipur, Jagdalpur, and Surguja.
- The official mascot of these games is ‘Morveer’, derived from the Chhattisgarhi words ‘Mor’ (our) and ‘Veer’ (courage). A total of 7 medal events (athletics, archery, football, hockey, swimming, wrestling, and weightlifting) and 2 demonstration sports (Mallakhamb and kabaddi) are included.
- This event is a major step towards integrating tribal youth into the national sports framework and nurturing their natural talent for the global stage.

## India’s First Microalgae-based “PureAir Tower”

- Recently, India’s first microalgae-based “PureAir Tower” has been installed near the Aerocity Highway Corridor in New Delhi. It is a pilot project aimed at testing a biotechnology-based air purification system to reduce vehicular pollution in urban areas.
- This tower is based on microalgae, which purifies air through the process of photosynthesis.

Polluted air enters the tower, where microalgae absorb carbon dioxide (CO<sub>2</sub>), nitrogen oxides (NOx), and particulate matter (PM), converting them into oxygen and algal biomass. It presents a more natural and energy-efficient solution compared to conventional smog towers.

- The significance of this initiative lies in urban innovation, eco-friendly technology, and control of vehicular pollution. It is an innovative attempt to transform road infrastructure into an active air-cleaning system.
- However, the project is still in its initial stage. Its long-term effectiveness, maintenance cost, and feasibility for large-scale deployment need to be evaluated. Experts believe that this solution will be more effective as a complementary measure rather than a substitute for emission control and green cover.

## 22nd Installment of the PM-Kisan Scheme

- Recently, on 13 March, Prime Minister Narendra Modi released the 22nd installment of the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme at an event held in Guwahati. Under this installment, an amount of Rs.18,640 crore was transferred through Direct Benefit Transfer (DBT) to the bank accounts of approximately 9.32 crore farmers across the country. The announcement of this transfer was made by Union Minister Shivraj Singh Chouhan in New Delhi.
- Under the PM-KISAN scheme, more than Rs.4.09 lakh crore has been directly distributed to farmers so far. The beneficiaries of this scheme include over 2.15 crore women farmers, thereby strengthening women's participation in the agricultural sector.
- According to studies, the assistance provided under this scheme has led to an increase in agricultural investment by farmers and reduced dependence on private moneylenders, thereby strengthening the rural economy. Additionally, India's foodgrain production has increased from 250 million tonnes in 2014 to nearly 350 million tonnes, reflecting continuous progress in the agricultural sector.

## QS World University Rankings 2026

- In the recently released QS (Quacquarelli Symonds) subject-wise rankings 2026, Indian higher education institutions have delivered an unprecedented performance. This year, India has emerged as the fourth most represented country in the world, with a total of 54 institutions featured in the list.
- IIT Delhi secured the top position in India with a global rank of 123. It was followed by IIT Bombay (129th) and IIT Madras (180th). This is the first time that three Indian institutions have been included in the top 200.
- In the field of management, IIM Ahmedabad, IIM Bangalore, and IIM Calcutta secured positions in the global top 50. In law, NLU Delhi and in social sciences, Jawaharlal Nehru University showed notable improvement.
- Globally, Massachusetts Institute of Technology continues to hold the top position, followed by Imperial College London and University of Oxford.
- India has been the fastest-improving country among G20 nations. Its higher education system now trails only the United States (192), the United Kingdom (90), and China (72).
- This ranking reflects the positive impact of the 'National Education Policy 2020' and the continuous rise in India's global research and academic reputation.

## “Dhwani Spandana” Initiative Receives National Award

- The “Dhwani Spandana” initiative, launched by the Karnataka State Road Transport Corporation to assist visually impaired passengers, has been honored with a national-level innovation award. This recognition was conferred in the “Excellence in Innovation” category at the 12th PSU National Awards organized by Governance Now in New Delhi.
- “Dhwani Spandana – Onboard Bus Identification and Navigation System” is a technological solution developed to enhance accessibility in public transport. This system has been implemented in around 200 buses in Mysuru. Technical support for this project has been provided by GIZ.
- With the help of this technology, visually impaired passengers can identify buses and travel with greater independence. It has reduced their dependence on others and increased their safety and confidence. This initiative is considered a significant step towards promoting inclusive mobility and making public transport more accessible.

## Mayank Chakraborty Becomes Grandmaster

- Recently, at the 8th Grandmaster Tournament held in Stockholm, Mayank Chakraborty became India’s 94th chess Grandmaster, marking a significant achievement for the country. He is the first Grandmaster to emerge from Northeast India and also the first player from Assam to achieve this prestigious title. Earlier, in 2023, Mayank had also secured the ‘International Master’ (IM) title.
- In this tournament, he scored 7 points out of 9 rounds to secure first place and remained unbeaten throughout. During the event, he also crossed the mandatory 2500 rating threshold set by the FIDE, which is a necessary condition to become a Grandmaster.
- This achievement of Mayank not only reflects his personal hard work and talent but also highlights the growing standards of sports in the Northeast region.

## Unveiling Statue of Potti Sriramulu

- In Andhra Pradesh’s Amaravati, a 58-foot-tall bronze statue of freedom fighter Potti Sriramulu was unveiled by Chief Minister N. Chandrababu Naidu on the occasion of his 125th birth anniversary. The statue has been installed at Shakhamuru Park and has been constructed under a memorial project developed by the Potti Sriramulu Memorial Trust.
- The first phase of this project has been completed at a cost of Rs.150 crore over approximately 6.80 acres of land. The construction of the statue involved the use of 26 tonnes of bronze and 42 tonnes of iron, and it was completed in about six months.
- This memorial has been built in remembrance of Sriramulu’s 58-day fast, which played a crucial role in the formation of the Andhra state. His sacrifice made a historic contribution in securing recognition for the identity and rights of Telugu-speaking people.
- In the second phase, facilities such as a museum, photo gallery, auditorium, and skill development center will be developed to preserve and promote his legacy.

## Extension of Jal Jeevan Mission

- The Union Cabinet, under the chairmanship of Prime Minister Narendra Modi, has approved the extension of the Jal Jeevan Mission (JJM) until December 2028. This decision is an important

step towards making rural drinking water supply in the country more sustainable, reliable, and inclusive. Under this extension, the implementation strategy of the mission has been restructured and reoriented, shifting its focus from mere infrastructure creation to ensuring regular and safe water supply.

- The government has increased the total financial outlay of the program to approximately Rs.8.69 lakh crore, out of which the central government's contribution will be around Rs.3.59 lakh crore.
- As part of the reforms, a nationwide digital platform named "Sujalam Bharat" will be launched, through which each village will be assigned a unique identification number, enabling more effective monitoring and management of water supply.
- Along with this, the Cabinet has also approved granting international status to Madurai Airport in Tamil Nadu, which is expected to boost regional economic development and global connectivity.

## Increase in Foodgrain Production

- Recently, Union Minister Shivraj Singh Chouhan informed Parliament that India's foodgrain production has recorded an increase of approximately 44 percent over the past ten years, reflecting significant progress in the agricultural sector.
- The country has achieved a new record in total production, reaching approximately 357 million tonnes. Notably, India has become the world's largest producer of rice, surpassing China in this sector.
- Production of pulses has also witnessed a significant rise, increasing from around 190 million tonnes to 260 million tonnes. To sustain this achievement and ensure balanced agricultural development, the government has launched the "Pradhan Mantri Dhan Dhanya Yojana." The objective of this scheme is to enhance agricultural productivity and provide necessary support to farmers in 100 selected districts across the country.
- However, the Government of West Bengal has not implemented this scheme, despite the selection of districts such as Purulia, Darjeeling, Alipurduar, and Jhargram. Additionally, the central government provided fertilizer subsidies of approximately Rs.1.86 lakh crore in the previous year.

## Fiscal Health Index 2026

- NITI Aayog released the second edition of the Fiscal Health Index (FHI) 2026 on 11 March in New Delhi. The report was presented in the presence of Vice Chairman Suman Bery and Chief Executive Officer Nidhi Chhibber. This index provides a data-driven framework to assess the fiscal performance and financial stability of Indian states.
- The report highlights that state governments contribute nearly one-third to India's total public debt structure, making their role extremely significant. In this edition, the scope of the index has been expanded to include ten northeastern and Himalayan states, making the assessment more comprehensive and representative.
- The analysis reveals considerable variations in fiscal performance among states, with several major states recording a marginal decline during 2023–24. The report recommends increasing revenue collection, improving tax capacity, rationalizing expenditures, and enhancing the quality of capital expenditure to ensure long-term economic stability.

## Joint Military Exercise 'LAMITIYE-2026'

- The 11th edition of the biennial joint military exercise 'LAMITIYE-2026' between India and Seychelles was held from 09 to 20 March 2026 at the Seychelles Defence Academy. 'Lamitiye' means 'friendship' in the local Creole language of Seychelles. Initiated in 2001, this exercise is a key pillar of strengthening security cooperation in the Indian Ocean region.
- This year's exercise was historic as, for the first time, all three services of India (Army, Navy, and Air Force) participated. The Indian contingent included personnel from the Assam Regiment, the Navy's stealth frigate INS Trikand, and the Air Force's C-130 transport aircraft.
- The main focus of the exercise was to enhance interoperability in counter-terrorism operations and peacekeeping tasks in semi-urban environments. During the 72-hour final 'validation phase,' successful demonstrations of UAV surveillance and amphibious operations were conducted on Praslin Island. This exercise not only serves as a platform for sharing military skills but also strengthens regional security and friendship under India's SAGAR (Security and Growth for All in the Region) initiative.

## 'Freedom Shield 24' Military Exercise

- The annual military exercise 'Freedom Shield 24' between the United States and South Korea was recently concluded. This exercise was conducted for 11 days, from 4 March to 14 March 2024. The primary objective of this exercise was to strengthen the joint defense posture of South Korea and the United States amid growing nuclear and missile threats from North Korea. It focused on 'multi-domain' operations, including land, air, sea, cyber, and space.
- The exercise also included large-scale field training named 'Warrior Shield,' which involved live-fire drills, bombing exercises, and air assault training.
- This exercise took place at a time when North Korea has intensified its missile testing and declared South Korea as its "principal enemy." Representatives from 12 other countries, including Australia, Canada, France, and United Kingdom, also participated, reflecting international cooperation.

## India's Historic T20 World Cup Victory

- India created history by winning the ICC Men's T20 World Cup 2026 title on 8 March. In the final match, India defeated the New Zealand cricket team by a massive margin of 96 runs. The match was played at Narendra Modi Stadium Ahmedabad, Gujarat. With this victory, India became the first host nation to win the T20 World Cup on its home soil.
- India also became the first team to win the T20 World Cup consecutively, having previously won the 2024 edition. Additionally, India set a new record in world cricket by becoming the first team to win the title three times.
- Throughout the tournament, the team delivered an outstanding performance under the captaincy of Suryakumar Yadav. Sanju Samson was named 'Player of the Tournament,' while Jasprit Bumrah was awarded 'Player of the Match' in the final. This victory reflects a golden era of Indian cricket.

## 'Nirbhaya Nisha' Initiative

- To ensure safe night travel for women, the Kerala Police has launched the 'Nirbhaya Nisha'

initiative. It was inaugurated on 8 March by State Police Chief Ravada A. Chandrasekhar. This initiative has been started with the objective of strengthening the safety of women traveling at night. Under this project, 28 police jeeps operated by women police personnel have been deployed across the state. The 'Nirbhaya Nisha' service will remain active from 9 PM to 5 AM, ensuring safety for women traveling late at night for work, education, or emergencies.

- This initiative will function in coordination with the emergency response and assistance system and the 112 helpline. Additionally, district control rooms, highway patrol units, and pink patrol vehicles will provide supplementary support.
- Furthermore, 'security pillars' equipped with AI-enabled cameras and panic alarms will be installed in crowded areas. This initiative is a significant step towards technologically strengthening the women's safety framework in the state.

## Gichak Nakana: A New Species of Subterranean Fish

- An international team of scientists from Europe, the United States, and India has discovered a new subterranean fish species, Gichak Nakana, in Northeast India. This species is found in underground aquifers and is the first fish reported from such a habitat in Asia.
- This fish is particularly notable due to its unusual structure, as it lacks a skull roof and its brain is covered only by skin. Adapted to underground life, it exhibits cave-related adaptations such as the absence of eyes. Its name is derived from Garo language words: 'Gitchak' (red color) and 'Na Tok Kana' (blind fish).
- Globally, more than 300 subterranean fish species are known, but less than 10% are found in aquifers. This discovery provides a new direction to the study of India's biodiversity and the understanding of subterranean ecosystems.

## Legal Recognition of Water Cremation in Scotland

- Scotland has become the first country in the United Kingdom to grant legal recognition to water cremation. This process, known as alkaline hydrolysis, provides a third option alongside traditional burial and flame cremation.
- In this method, the body is wrapped in biodegradable material and placed in a pressurized chamber filled with heated water and chemicals. At a temperature of around 150°C, the body is kept in a mixture of potassium hydroxide and water for about 90 minutes, causing the tissues to dissolve. The remaining bones are processed into powder and returned to the family.
- This method is considered environmentally friendly and is also referred to as "green cremation," as it produces nearly seven times less carbon dioxide emissions compared to traditional cremation. This technology has already been adopted in the United States and the Ireland, reflecting its growing global acceptance.

## Echinus Geyser Erupts Again

- After a gap of six years, the Echinus Geyser has erupted again. This geyser is located in the Norris Geyser Basin of Yellowstone National Park and had remained inactive since 2020. According to scientists, it may remain active for some time before becoming dormant again.
- Geysers are geothermal springs that erupt intermittently due to pressure from water heated by magma beneath the Earth's surface. They have a tube-like structure through which hot water and steam are expelled, and the cycle repeats.

- Earlier as well, the Echinus Geyser remained regularly active. In the 1970s, it used to erupt every 40–80 minutes, while later the interval between eruptions was observed to extend up to 90 minutes. During periods of high activity, it can eject water up to about 75 feet (23 meters). In recent years, its activity had declined, but its reactivation provides important insights for the study of geothermal processes.

## Renaming of Pakyong Airport

- The Government of Sikkim has announced that the state's only airport, Pakyong Airport, will be renamed after freedom fighter Trilochan Pokhrel. This announcement was made by Chief Minister Prem Singh Tamang during the 31st foundation day celebration of the All Sikkim Khas Kshetri Bahun Welfare Association held in Rangpo. Trilochan Pokhrel is regarded as the first freedom fighter of Sikkim and actively participated in the Non-Cooperation Movement, Civil Disobedience Movement, and Quit India Movement. This decision has been taken to honor his contributions.
- Pakyong Airport was inaugurated in September 2018 by Prime Minister Narendra Modi. During the event, the contributions of the Khas, Kshetri, and Bahun communities to the state's social fabric were also appreciated. Additionally, social worker Kipu Shering Lepcha was honored with the 'Sikkim Gaurav Samman,' reflecting the importance of social service in the state.

## Jammu & Kashmir's Historic Ranji Trophy Victory

- The Jammu and Kashmir cricket team created history by winning the Ranji Trophy for the first time in the 2025–26 season. In the final, the team defeated the Karnataka cricket team. This victory was particularly significant as Jammu & Kashmir had never been considered a serious contender in the tournament's 67-year history. Fast bowler Aqib Nabi and batsmen Shubham Pundir and Qamran Iqbal played crucial roles in this victory. Pundir scored 121 runs in the first innings, while Iqbal played an unbeaten knock of 160 runs in the second innings. The team scored 584 runs in the first innings and declared at 342/4 in the second innings.
- Throughout the season, the team suffered only one defeat. Aqib Nabi took 60 wickets in 10 matches and was awarded the 'Player of the Series,' while Pundir was named 'Player of the Match' in the final. This victory proved to be a milestone for Jammu & Kashmir cricket.

## Delhi Lakhpati Bitiya Scheme

- The 'Delhi Lakhpati Bitiya Scheme' has been launched with the objective of empowering girls from economically weaker families. It was inaugurated by President Droupadi Murmu at the Indira Gandhi Indoor Stadium. This scheme is an expanded and modified version of the earlier 'Ladli Scheme,' aimed at strengthening the education and financial security of girls.
- Under the new scheme, a total amount of Rs.56,000 will be deposited in the name of the girl in different stages, which will grow to more than Rs.1 lakh with interest by the age of 21. This amount will be directly transferred to an Aadhaar-linked bank account upon fulfillment of specified educational conditions.
- The scheme will be implemented by the Department of Women and Child Development, and the funds will be managed through SBI Life Insurance Company Limited. Eligibility is limited to families with an annual income below Rs.1.20 lakh and who have been residing in Delhi for at least three years. This initiative advances the goal of 'Empowered Women, Prosperous Delhi.'

# MCQs Based on Current Affairs

**1. Consider the following statements regarding the India Semiconductor Mission (ISM):**

1. It provides fiscal support of up to 50% of project costs for semiconductor fabrication plants on a pari-passu basis.
2. The mission focuses only on chip fabrication.
3. The total outlay of the mission is approximately Rs. 76,000 crore.

Which of the statements given above is/are correct?

- A: 1 and 2 only  
B: 1 and 3 only  
C: 2 and 3 only  
D: 1, 2, and 3

**2. With reference to INS Anjadip, consider the following statements:**

1. It is an aircraft carrier designed for blue-water naval operations.
2. It is part of the Anti-Submarine Warfare Shallow Water Craft (ASW-SWC) project.
3. It is specifically designed for anti-submarine operations in littoral waters.

Which of the statements given above is/are correct?

- A: 1 and 2 only  
B: 1 and 3 only  
C: 2 and 3 only  
D: 1, 2, and 3

**3. Which of the following features are associated with INS Anjadip?**

1. Hull-mounted sonar "Abhay"
2. Lightweight torpedoes
3. Ballistic missile launch capability
4. High-speed water-jet propulsion

Select the correct answer:

- A: 1 and 2 only  
B: 1,3 and 4 only  
C: 1, 2 and 4 only  
D: 1, 2, 3 and 4

**4. With reference to the Very Short-Range Air Defence System (VSHORADS), consider the following statements:**

1. It is a man-portable air defence missile system.
2. It has been developed indigenously by DRDO's Research Centre Imarat (RCI).
3. It is designed only for the Indian Army.

Which of the statements given above is/are correct?

- A: 1 and 2 only  
B: 1 and 3 only  
C: 2 and 3 only  
D: 1, 2, and 3

**5. With reference to the Advanced Light Helicopter (ALH) Mk-III, consider the following statements:**

1. It is a twin-engine multi-role helicopter.
2. It can operate only from land-based airfields and cannot be deployed from ships.
3. It is equipped with advanced avionics such as a glass cockpit and surveillance sensors.

Which of the statements given above is/are correct?

- A: 1 and 2 only  
B: 2 only  
C: 1 and 3 only  
D: 1, 2, and 3

**6. With reference to the State of the World's Migratory Species report, consider the following statements:**

1. Around half of the migratory species protected under CMS are experiencing population decline.
2. About one-fourth of the species are currently facing extinction risk.
3. The report was first released in 2024.

Which of the statements given above are correct?

- A: 1 and 2 only

- B: 1 and 3 only  
 C: 2 and 3 only  
 D: 1, 2, and 3

**7. With reference to Tirumangai Alvar, consider the following statements:**

1. He was one of the twelve Alvar saints associated with the Vaishnavite Bhakti tradition.
2. He is considered the last and among the most prolific of the Alvar saints.
3. His devotional compositions form part of the Divya Prabandham.

Which of the statements given above are correct?

- A: 1 and 2 only  
 B: 1 and 3 only  
 C: 2 and 3 only  
 D: 1, 2, and 3

**8. The Strategic Partnership between India and Finland primarily focuses on cooperation in which of the following areas?**

1. Artificial Intelligence
2. 5G and 6G telecommunications
3. Quantum computing
4. Digital infrastructure

Select the correct answer:

- A: 1 and 2 only  
 B: 1,3 and 4 only  
 C: 1, 2 and 3 only  
 D: 1, 2, 3 and 4

**9. With reference to the Nordic countries, consider the following:**

1. Finland
2. Sweden
3. Norway
4. Denmark
5. Iceland

Which of the above are considered Nordic countries?

- A: 1 and 2 only

- B: 1,3 and 4 only  
 C: 1, 2 ,3 and 4 only  
 D: 1, 2, 3, 4 and 5

**10. With reference to Very Low Earth Orbit (VLEO), consider the following statements:**

1. VLEO satellites operate roughly between 150 km and 450 km above the Earth.
2. VLEO lies above conventional Low Earth Orbit (LEO).
3. Satellites in VLEO experience noticeable atmospheric drag.

Which of the statements given above is/are correct?

- A: 1 and 2 only  
 B: 1 and 3 only  
 C: 2 and 3 only  
 D: 1, 2, and 3

**11. With reference to the Viksit Bharat–Guarantee for Rozgar and Ajeevika Mission (Gramin) Act, 2025, consider the following statements:**

1. It guarantees 125 days of wage employment per rural household annually.
2. It replaced the Mahatma Gandhi National Rural Employment Guarantee Act, 2005.
3. The scheme is implemented by the Ministry of Agriculture and Farmers Welfare.

Which of the statements given above is/are correct?

- A: 1 and 2 only  
 B: 1 and 3 only  
 C: 2 and 3 only  
 D: 1, 2, and 3

**12. Consider the following statements regarding the funding pattern of the VB-G RAM G Act, 2025:**

1. The Centre and states share expenditure in a 60:40 ratio for most states.
2. For North-Eastern states, the funding ratio is 90:10.

Which of the statements given above are

correct?

- A: 1 only
- B: 2 only
- C: Both 1 and 2
- D: None

**13. A recent study published in Geophysical Research Letters highlighted the acceleration of global warming. Consider the following statements:**

1. The global temperature rise increased from about 0.2°C per decade (1970–2015) to about 0.35°C per decade after 2015.
2. Scientists removed the influence of El Niño, volcanic eruptions, and solar radiation changes to identify the long-term warming trend.
3. Aerosols increase global warming because they trap heat like greenhouse gases.
4. According to research, Weakening carbon sinks such as forests and oceans can contribute to faster global warming.

Which of the statements given above are correct?

- A: 1 and 2 only
- B: 1,3 and 4 only
- C: 1, 2 and 4 only
- D: 1, 2, 3 and 4

**14. With reference to the recent farm loan waiver announced in Maharashtra, consider the following statements:**

1. The scheme is estimated to cost around Rs.35,000 crore and aims to benefit nearly 30 lakh farmers.
2. The scheme provides an additional Rs.50,000 incentive to farmers who regularly repaid their loans.
3. Farm loan waivers generally cover loans from both banks and informal lenders like moneylenders.
4. The Reserve Bank of India has warned that repeated loan waivers may weaken credit

discipline.

Which of the statements given above are correct?

- A: 1 and 2 only
- B: 1,2 and 4 only
- C: 2 ,3 and 4 only
- D: 1, 2, 3 and 4

**15. With reference to the Strait of Hormuz, consider the following statements:**

1. It lies between Iran and Oman and connects the Persian Gulf with the Gulf of Oman.
2. Nearly 20% of global oil trade passes through this maritime route.
3. The strait is controlled entirely by the Organization of the Petroleum Exporting Countries (OPEC).

Which of the statements given above are correct?

- A: 1 and 2 only
- B: 1 and 3 only
- C: 2 and 3 only
- D: 1, 2, and 3

**16. With reference to India's oil import dependence and global crude price shocks, consider the following statements:**

1. India imports more than 85% of its crude oil requirements.
2. Higher crude oil prices can widen the current account deficit and increase inflation in India.
3. India is among the top three crude oil importers in the world.

Which of the statements given above are correct?

- A: 1 and 2 only
- B: 1 and 3 only
- C: 2 and 3 only
- D: 1, 2, and 3

**17. Consider the following statement (A) and reason (R):**

**Statement (A):** India is moving towards becoming self-reliant in defence manufacturing.

**Reason (R):** India is emphasizing the production of indigenous defence equipment.

Choose the correct answer:

- A: Both A and R are correct, and R is the correct explanation of A
- B: Both A and R are correct, but R is not the correct explanation of A
- C: A is correct, but R is incorrect
- D: A is incorrect, but R is correct

**18. With reference to White Phosphorus (WP), consider the following statements:**

1. White phosphorus ignites spontaneously when it comes into contact with oxygen.
2. It is prohibited under all circumstances by international law.
3. It can be legally used for smoke screens and battlefield illumination.

Which of the statements given above is/are correct?

- A: 1 only
- B: 2 only
- C: 1 and 3 only
- D: 1, 2, and 3

**19. The regulation of incendiary weapons such as white phosphorus is mainly covered under which international agreement?**

- A: Chemical Weapons Convention (CWC)
- B: Convention on Certain Conventional Weapons (CCW)
- C: Biological Weapons Convention (BWC)
- D: Treaty on the Non-Proliferation of Nuclear Weapons (NPT)

**20. With reference to Article 21 of the Indian Constitution, consider the following statements:**

1. Article 21 guarantees the right to life and personal liberty only to Indian citizens.
2. The Supreme Court of India has interpreted

Article 21 to include the right to privacy.

3. The right to reputation has been recognised as part of Article 21.

Which of the statements given above is/are correct?

- A: 1 and 2 only
- B: 1 and 3 only
- C: 2 and 3 only
- D: 1, 2, and 3

**21. The concept of the “Right to be Forgotten” is most closely associated with which of the following?**

- A: Right to Information laws
- B: European data protection regulations
- C: United Nations Charter
- D: WTO digital trade agreements

**22. With reference to amphipods, consider the following statements:**

1. Amphipods are small crustaceans commonly found in marine, freshwater, and terrestrial environments.
2. They belong to the phylum Arthropoda.
3. All amphipods are parasitic in nature.

Which of the statements given above is/are correct?

- A: 1 and 2 only
- B: 1 and 3 only
- C: 2 and 3 only
- D: 1, 2, and 3

**23. With reference to the Pradhan Mantri Matsya Sampada Yojana (PMMSY), consider the following statements:**

1. It is a major umbrella scheme for the sustainable development of the fisheries sector in India.
2. It is implemented by the Department of Fisheries under the Ministry of Fisheries, Animal Husbandry and Dairying.
3. Its objective is only to increase marine fish production.

Select the correct answer using the code given below:

- A: 1 and 2 only
- B: 2 and 3 only
- C: 1 and 3 only
- D: 1, 2, and 3

**24. Arrange the following events in chronological order:**

1. Establishment of Satyashodhak Samaj
2. Establishment of India's first modern girls' school at Bhide Wada, Pune
3. Birth of Savitribai Phule
4. Passage of the Hindu Widows' Remarriage Act

Select the correct answer using the code given below:

- A: 3-2-4-1
- B: 3-4-2-1
- C: 2-3-4-1
- D: 3-2-1-4

**25. With reference to the asteroid 2024 YR4 recently seen in the news, consider the following statements:**

1. It belongs to the category of Near-Earth Asteroids.
2. It was primarily observed by the James Webb Space Telescope, which is located within Earth's atmosphere.

Which of the statements given above is/are correct?

- A: Only 1
- B: Only 2
- C: Both 1 and 2
- D: Neither 1 nor 2

**26. With reference to the presiding officers of the Parliament of India, consider the following statements:**

1. The Speaker of the Lok Sabha can be removed from office through a resolution passed by the Lok Sabha.

2. The Deputy Speaker of the Lok Sabha can be removed only by the President of India.
3. The office of the Chairman of the Rajya Sabha is held by the Vice-President of India. Which of the statements given above is/are correct?

- A: 1 and 2 only
- B: 1 and 3 only
- C: Only 3
- D: 1, 2, and 3

**27. Consider the following statements regarding the Fiscal Health Index 2026:**

1. It is released by the Finance Commission of India.
2. Its objective is to provide a comparative assessment of the fiscal position of states.
3. In its second edition, the North-Eastern and Himalayan states have also been included. Which of the above statements are correct?

- A: 1 and 2 only
- B: 2 and 3 only
- C: Only 1 and 3
- D: 1, 2 and 3

**28. Consider the following statements regarding Eco-Sensitive Zones:**

1. It is a buffer zone around protected areas.
2. Its objective is to completely prohibit development activities.
3. Its objective is to establish a balance between environment and development.

Choose the correct answer:

- A: 1 and 2 only
- B: Only 1 and 3
- C: 2 and 3 only
- D: 1, 2, and 3

**29. Consider the following statement (A) and reason (R):**

**Statement (A):** Passive euthanasia has been granted legal recognition in India.

**Reason (R):** The Supreme Court allowed it in

the Common Cause vs Union of India (2018) case.

Choose the correct answer based on the code given below

- A: Both A and R are correct, and R is the correct explanation of A.  
 B: Both A and R are correct, but R is not the correct explanation of A.  
 C: A is correct, but R is incorrect.  
 D: A is incorrect, but R is correct.

**30. Match the following United Nations Peacekeeping Missions with their respective areas of operation:**

List I (UN Mission)	List II (Region)
A. UNIFIL	1. Lebanon
B. UNMISS	2. South Sudan
C. UNDOF	3. Golan Heights

Choose Correct Code

- A: A-1, B-2, C-3  
 B: A-2, B-1, C-3  
 C: A-3, B-2, C-1  
 D: A-1, B-3, C-2

**31. Why are lichen moths considered important in environmental studies?**

- A: They occur only above 5000 m altitude in the Himalayas  
 B: Their caterpillars depend on lichens that are sensitive to air pollution  
 C: They only act as pollinators  
 D: They occur only in aquatic ecosystems

**32. Consider the following places:**

1. Kharg Island
2. Qeshm Island
3. Bahrain Island

Which of the above are located in the Persian Gulf?

- A: 1 and 2 only  
 B: 2 and 3 only  
 C: 1, 2 and 3  
 D: 1 only

**33. Consider the following statement (A) and reason (R):**

**Assertion (A):** Vairamuthu has been awarded the Jnanpith Award.

**Reason (R):** He is the first writer in the Tamil language to receive this award.

Choose the correct option:

- A: Both A and R are correct and R is the correct explanation of A.  
 B: Both A and R are correct but R is not the correct explanation of A.  
 C: A is correct but R is incorrect.  
 D: A is incorrect but R is correct.

**34. Consider the following statements regarding the Sahitya Akademi Award:**

1. This award is given for outstanding literary works in 24 languages of India.
2. This award is directly conferred by the Ministry of Culture, Government of India.
3. This award is given every year on the recommendation of a jury selected by the Sahitya Akademi.

Which of the above statements is/are correct?

- A: 1 and 3 only  
 B: 2 and 3 only  
 C: Only 1  
 D: 1, 2, and 3

**35. Consider the following statements regarding the 98th Academy Awards (Oscars 2026):**

1. "One Battle After Another" won the Best Picture award.
2. Michael B. Jordan received the Best Actor award for the film "Sinners".
3. Jessie Buckley received the Best Actress award for the film "Hamnet".

Which of the above statements is/are correct?

- A: 1 and 2 only  
 B: 2 and 3 only  
 C: 1, 2 and 3

D: Only 1

**36. Consider the following statements regarding “Exercise Sea Dragon 2026”:**

1. It is a multinational anti-submarine warfare exercise.
2. It is organized by the United States.
3. Participating countries include India, Japan, Australia, and South Korea.

Which of the above statements is/are correct?

- A: 1 and 2 only  
 B: 2 and 3 only  
 C: 1, 2, and 3  
 D: Only 1

**37. Consider the following statements:**

1. Euthalia zubeengargi is a new butterfly species.
2. It was discovered in the Western Ghats.
3. It belongs to the Nymphalidae family.

Choose the correct answer:

- A: 1 and 3 only  
 B: 2 and 3 only  
 C: Only 1 and 3  
 D: 1, 2, and 3

**38. Consider the following statement (A) and reason (R):**

**Statement (A):** The Bhavya Scheme promotes ease of doing business.

**Reason (R):** It provides pre-approved land, a single-window clearance system, and ready infrastructure.

Select the correct option:

- A: Both A and R are correct, and R is the correct explanation of A  
 B: Both A and R are correct, but R is not the correct explanation of A  
 C: A is correct, R is incorrect  
 D: A is incorrect, R is correct

**39. Which of the following indicators are included in the annual score of the Global Terrorism**

**Index (GTI)?**

1. Number of terrorist incidents
2. Deaths caused by terrorism
3. Injuries caused by terrorism
4. Number of hostage-taking incidents related to terrorism

Select the correct code:

- A: Only 1 and 2  
 B: Only 2, 3 and 4  
 C: Only 1, 3 and 4  
 D: 1, 2, 3 and 4

**40. What is the main theme of the United Nations World Water Development Report 2026?**

- A: Water and Climate Change  
 B: Water and Energy  
 C: Water and Gender Equality  
 D: Water and Agriculture

**41. Consider the following statements regarding Exercise “Amogh Jwala”:**

1. It is an exercise conducted by the Indian Army.
2. It is a multi-domain, technology-based military exercise.
3. It was conducted at the Pokhran Field Firing Range.

Select the correct code:

- A: Only 1  
 B: 1 and 2 only  
 C: 2 and 3 only  
 D: 1, 2, and 3

**42. With reference to a recent Supreme Court judgment (2026), consider the following statements:**

1. The Court stated that no woman can be forced to continue a pregnancy against her will.
2. The Court allowed termination of a 30-week pregnancy.
3. The decision was limited only to the time limit (24 weeks) prescribed under the Medical

Termination of Pregnancy (MTP) Act.

Select the correct code:

- A: 1 and 2 only
- B: 2 and 3 only
- C: Only 1 and 3
- D: 1, 2 and 3

**43. Consider the following statements:**

1. According to the CAPF (Central Armed Police Forces) Bill, 2026, 50% of the posts at the rank of Inspector General (IG) are reserved for Indian Police Service (IPS) officers.
2. All posts of Director General (DG) and Special Director General (Special DG) are designated for Indian Police Service (IPS) officers.
3. The Central Armed Police Forces (CAPFs) are part of the Armed Forces of India.

Select the correct answer using the code given below:

- A: 1 and 2 only
- B: 2 and 3 only
- C: Only 1 and 3
- D: 1, 2 and 3

**44. Consider the following statements regarding Mekong–Ganga Cooperation (MGC):**

1. It was established in the year 2000 in Vientiane (Laos).
2. It is an important component of India's "Act East Policy."
3. All ASEAN countries are members of it.

Select the correct answer:

- A: 1 and 2 only
- B: 2 and 3 only
- C: Only 1 and 3
- D: 1, 2 and 3

**45. Consider the following statements:**

1. The determination of Scheduled Castes (SC) is made under Article 341 of the Constitution.
2. Scheduled Caste status is granted equally to

persons of all religions.

3. Dalit Christians and Dalit Muslims do not currently have Scheduled Caste status.

Select the correct option:

- A: 1 and 3 only
- B: 2 and 3 only
- C: Only 1 and 2
- D: 1, 2 and 3

**46. Consider the following statements:**

1. UNESCO has advised the Government of India to adhere to World Heritage conservation standards in the context of the Aghanashini–Vedavathi river linking project.
2. The Aghanashini River is located in the Western Ghats and drains into the Arabian Sea.
3. The Aghanashini River is one of the highly polluted rivers of India.
4. The Aghanashini estuary has been designated as a Ramsar site.

Select the correct answer using the code given below:

- A: Only 1, 2 and 4
- B: Only 1 and 3
- C: Only 2 and 4
- D: Only 1, 2, 3 and 4

**47. Consider the following statements:**

1. The Women's Reservation Act, 2023 provides for one-third reservation of seats in the Lok Sabha and State Legislative Assemblies.
2. The implementation of this Act is linked with the delimitation process.
3. The recommendations of the Delimitation Commission are subject to judicial review. Which of the above statements is/are correct?

- A: 1 and 2 only
- B: 2 and 3 only
- C: Only 1 and 3
- D: 1, 2, and 3

**48. Consider the following statements:**

1. The India Meteorological Department (IMD) uses Artificial Intelligence for weather forecasting.
2. The Central Water Commission (CWC) uses AI-based systems for flood forecasting.
3. The Defence Research and Development Organisation (DRDO) limits the use of AI only to military purposes.

Which of the above statements is/are correct?

- A: 1 and 2 only  
B: 2 and 3 only  
C: Only 1 and 3  
D: 1, 2 and 3

**49. Which of the following Indian institutions are included in the top 100 of the QS Global MBA Rankings 2026?**

1. Indian Institute of Management, Ahmedabad
2. Indian Institute of Management, Bangalore
3. Indian Institute of Management, Kozhikode s

4. Indian Institute of Management, Calcutta

Select the correct answer:

- A: Only 1, 2 and 4  
B: Only 1 and 2  
C: Only 2, 3 and 4  
D: 1, 2, 3 and 4

**50. Consider the following statements regarding the G-7 Summit 2026:**

1. It will be held in France.
2. India will participate as a permanent member.
3. Issues such as the global economy and maritime security will be discussed.

Select the correct answer:

- A: 1 and 3 only  
B: 2 and 3 only  
C: Only 1 and 2  
D: 1, 2 and 3

# ANSWER

1	B
2	C
3	C
4	A
5	C
6	D
7	D
8	D
9	D
10	B

11	A
12	C
13	C
14	B
15	A
16	D
17	A
18	C
19	B
20	C

21	B
22	A
23	A
24	A
25	A
26	B
27	B
28	B
29	A
30	A

31	B
32	C
33	C
34	A
35	C
36	C
37	A
38	A
39	D
40	C

41	B
42	A
43	A
44	A
45	A
46	A
47	A
48	A
49	A
50	A



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