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PREFACE

Dear Students,

Understanding and organizing Civil Services Exam relevant Current affairs in a crisp and concise manner is essential for success in the Civil Services exam. Our exclusive CSE Mains current affairs magazine will fulfil that need in your preparation.

Features

- Crisp, Clear and insightful analysis on key Current Affairs issues.
- Important issues segregated according to CSE Main Exam syllabus.
- Content written in question and answer format for clarity, easy recollection and coherence while writing the main examination.
- Exam relevant topics curated from The Hindu and Indian Express.

All the best
R.C.Reddy IAS Study Circle

INDEX

GS I - INDIAN HERITAGE AND CULTURE, HISTORY AND GEOGRAPHY OF THE WORLD AND SOCIETY

A. INDIAN CULTURE

I. Art Forms, Literature and Architecture

1. Classical Languages of India

Why in the news?

- On **October 3, 2024**, the Union Cabinet accorded classical language status to **Marathi, Pali, Prakrit, Assamese, and Bengali**, raising the total number of **Classical Languages in India to eleven.** Earlier, **Tamil, Sanskrit, Kannada, Telugu, Malayalam, and Odia** had received classical language recognition between 2004 and 2024.

Significance of Classical Language Status

- It acknowledges the **historical, literary, and philosophical contributions** of ancient languages to Indian civilisation.
- It helps **preserve linguistic continuity** and ensures **institutional support** for teaching, research, and publication.
- It reinforces India's cultural self-reliance (Atmanirbhar Bharat) by promoting indigenous knowledge systems.
    - Example: Recognition of Pali and Prakrit revives India's Buddhist–Jain intellectual traditions.

Criteria for Granting Classical Status

The Ministry of Culture, in consultation with linguistic experts, lays down four criteria:

- **High antiquity** — texts or recorded history spanning 1,500–2,000 years.
- **A corpus of ancient literature** regarded as a heritage by generations.
- **Availability of prose and inscriptional evidence**, beyond poetry.
- **Distinctness from the modern form**, with continuity in tradition.

Newly Recognised Classical Languages (2024)

Marathi

- Rooted in Maharastri Prakrit, Marathi's lineage extends over **2,500 years**.
- Early literature includes **Gathasaptasati** (Satavahana King Hala, 1st century CE) and later classics like **Jnaneshwari** and **Lilacharitra**.
- **Naneghata inscription** and references in Vinayapitaka and Mahavamsa attest to its antiquity.
- Example: Saint-poets like **Tukaram and Dnyaneshwar** shaped Marathi Bhakti literature.

Pali

- Sacred language of **Theravada Buddhism**, used by Lord Buddha in his sermons.
- Major canonical works include the **Tipitaka** — Vinaya Pitaka, Sutta Pitaka, and Abhidhamma Pitaka.
- Preserved in Sri Lanka, Myanmar, and Southeast Asia; holds global religious significance.
- Example: The **Jataka tales** in Pali link India's moral and philosophical thought to the wider Buddhist world.

Prakrit

- A family of Middle Indo-Aryan dialects serving as the linguistic bridge between Sanskrit and modern Indian languages.
- Used in **Ashokan edicts**, **Jain texts**, and **ancient dramas**.
- Scholars like **Vararuchi and Panini** refined its grammar.
- Example: Prakrit formed the base for modern Indo-Aryan languages like Hindi, Bengali, and Marathi.

Assamese

- Originated from **Magadhi Apabhramsa**, evolving by the 7th–8th century CE.
- Early literary record found in **Charyapadas** (8th–12th century).
- Shared linguistic roots with Oriya and Bengali.
- Example: Assamese literature flourished under **Sankardev's Vaishnavite Bhakti movement**.

Bengali

- Evolved from **Eastern Magadhi Prakrit** through Apabhramsa.
- Early texts include **Charyapada hymns**, later enriched by **Chaitanya, Mukunda Ram, Bharat Chandra,** and **Ram Prasad.**
- The **19th–20th century Bengal Renaissance** gave India thinkers like **Raja Ram Mohan Roy**, **Rabindranath Tagore**, and **Bankim Chandra Chattopadhyay.**
- Example: India's **National Anthem** and **National Song**—Jana Gana Mana and Vande Mataram—originate from Bengali literature.

2. Is the Dogri Language Losing Resonance In India?

Why in the news?

- Dogri, a language spoken in Jammu, is facing a gradual decline, reflecting a broader linguistic crisis in India.

Reasons for Decline

- **Lack of Government Support**: Dogri gained official recognition in 2003, but unlike other regional languages, it has received limited institutional support, such as inclusion in school curricula or administrative use.
- **Generational Gap**: Older generations are more proficient in Dogri, but younger people, especially those under 20, show little to no proficiency, particularly in reading and writing.
- **Rural-Urban Divide**: The language is still spoken by 56% of people in rural areas, but only 45% in urban areas, with a significant drop in writing proficiency, particularly in cities.

Challenges in Reviving Dogri

- **Lack of Updated Data**: The absence of recent census data on endangered languages limits awareness and policy planning.
- **Perception of Progress**: The belief that **English** is synonymous with progress hampers the promotion of regional languages.

Broader Linguistic Context in India

- The People's Linguistic Survey of India (PLSI) estimates that nearly half of India's 780 languages could vanish in the next 50 years if current trends persist
- Factors such as migration, economic aspirations, and cultural homogenisation have weakened local linguistic ecosystems.

Way Forward for Dogri Language Preservation

- **Government Policy Support**: Increase its use in administrative functions and official communication to ensure its presence in public life.
- **Promote Language in Media and Employment**: Encourage the use of Dogri in regional media, including television, radio, and digital platforms, to make it more visible.
- **Community Engagement and Awareness**: Organize cultural programs, language festivals, and workshops to engage the community, especially the youth, in preserving and promoting Dogri.

Conclusion

To preserve Dogri, India must implement policies that integrate the language into education, employment, and administration, while also challenging the dominance of English in the country's socio-economic landscape.

B. INDIAN SOCIETY

I. Role of Women and Women's Organization, Population and Associated Issues, Poverty and Developmental issues, Urbanization, their problems and their remedies.

1. Definition of Urban Areas in India

Why in the news?

- The **Registrar General and Census Commissioner's decision (August 2025)** to retain the **2011 Census definition of 'urban areas'** for the upcoming **Census 2027** seeks continuity for comparability.

The Current Definition and Its Scope

In the **2011 Census**, an urban unit was defined as either:

- **Statutory Town** – formally notified by State governments and governed by **urban local bodies (ULBs)** such as municipal corporations, councils, or nagar panchayats.
- **Census Town** – settlements satisfying all three criteria:
  - Minimum population of **5,000**;
  - At least **75% of male main workers** engaged in non-agricultural activities;
  - Population density of **400 persons per sq. km** or more.
- Census towns function as urban in character but remain **administratively rural**, governed by **Gram Panchayats**, without urban-level infrastructure or planning mechanisms.

Limitations of the Existing Definition

- **Outdated Criteria and Misclassification:** The **5,000-population threshold** and **75% male workforce** criterion fail to capture the realities of modern employment, where **gig work, services, and hybrid livelihoods** dominate even in rural belts.
  - Example: In peri-urban Tamil Nadu and Haryana, app-based delivery, small-scale industries, and informal services operate in villages that still appear 'rural' on paper.
- **Gender Bias and Informal Work Neglect:** The definition overlooks **female informal labour**, which is substantial in semi-urban households. Women engaged in **home-based manufacturing, trade, or services** are invisible in formal workforce statistics, perpetuating gendered undercounting.
- **Static Governance Structure:** Statutory recognition as a town brings **autonomy and fiscal powers** via municipal bodies, while rural Panchayats are restricted to centrally sponsored schemes.

- **Example**: Census towns continue under rural governance even after fulfilling urban criteria, denying them access to **urban development funds** or **Smart City missions**.

- **Delayed Municipalisation:** Between **2001 and 2011**, about **251 census towns** that met the criteria remained unconverted into statutory towns.
  - **Example**: **West Bengal** saw the highest growth — **526 new census towns** in 2011 — yet most earlier ones (identified in 2001) remained under rural local bodies, resulting in **infrastructure lag** and **planning paralysis**.

- **Ignoring Transitional Settlements:** The binary distinction between 'urban' and 'rural' ignores **peri-urban regions**, which are functionally urban yet lack service delivery, zoning laws, or institutional frameworks.
  - **Example**: Around large metros like **Bengaluru, Pune, and Lucknow**, hundreds of fringe villages have effectively become part of urban ecosystems without official reclassification.

Implications of Retaining the Old Definition

- **Undercounting Urban Population:** Studies (Population and Environment, 2019) suggest that India's **true urban share in 2011** may have been **35–57%**, far higher than the official **31%**, if population density and functional parameters were used.
  This **undercount distorts resource allocation**, fiscal devolution, and policy targeting.
- **Governance and Infrastructure Gaps:** Settlements that are functionally urban but governed rurally face **inadequate waste management, drainage, housing, and mobility infrastructure**.
  Example: Peri-urban clusters around Kolkata and Kochi experience congestion and pollution but lack municipal services or taxation frameworks.
- **Planning Vacuum:** The **Town and Country Planning Acts** and **urban master plans** exclude non-statutory urban areas, leading to **unregulated land conversion**, **encroachments**, and **unsustainable growth**.
- **Social and Economic Exclusion:** Rural governance frameworks limit access to **urban employment programmes, MSME incentives, or property taxation systems**, trapping growing towns in **policy limbo**.

Rethinking Urban Criteria

- **Multi-Dimensional Definition:** Urban classification should integrate **population density, functional land use, connectivity, commuting patterns, and service availability**, rather than relying solely on workforce composition.
- **Functional Urban Regions (FURs):** Adopting the concept of **Functional Urban Regions** used by OECD countries — where settlements are defined by **economic and mobility linkages** — would better reflect India's urban sprawl.
- **Periodic Re-assessment:** Urban status should be reviewed every **five years** using satellite imagery and local surveys to capture real-time expansion.
- **Inclusive Governance:** Creation of **transitional governance models** (e.g., Urban–Rural Interface Boards) could help manage peri-urban areas until full municipalisation is feasible.
- **Gender and Informal Economy Integration:** Census frameworks must **account for informal and female labour participation**, aligning with **SDG-11 (Sustainable Cities and Communities)** and **SDG-5 (Gender Equality)**.

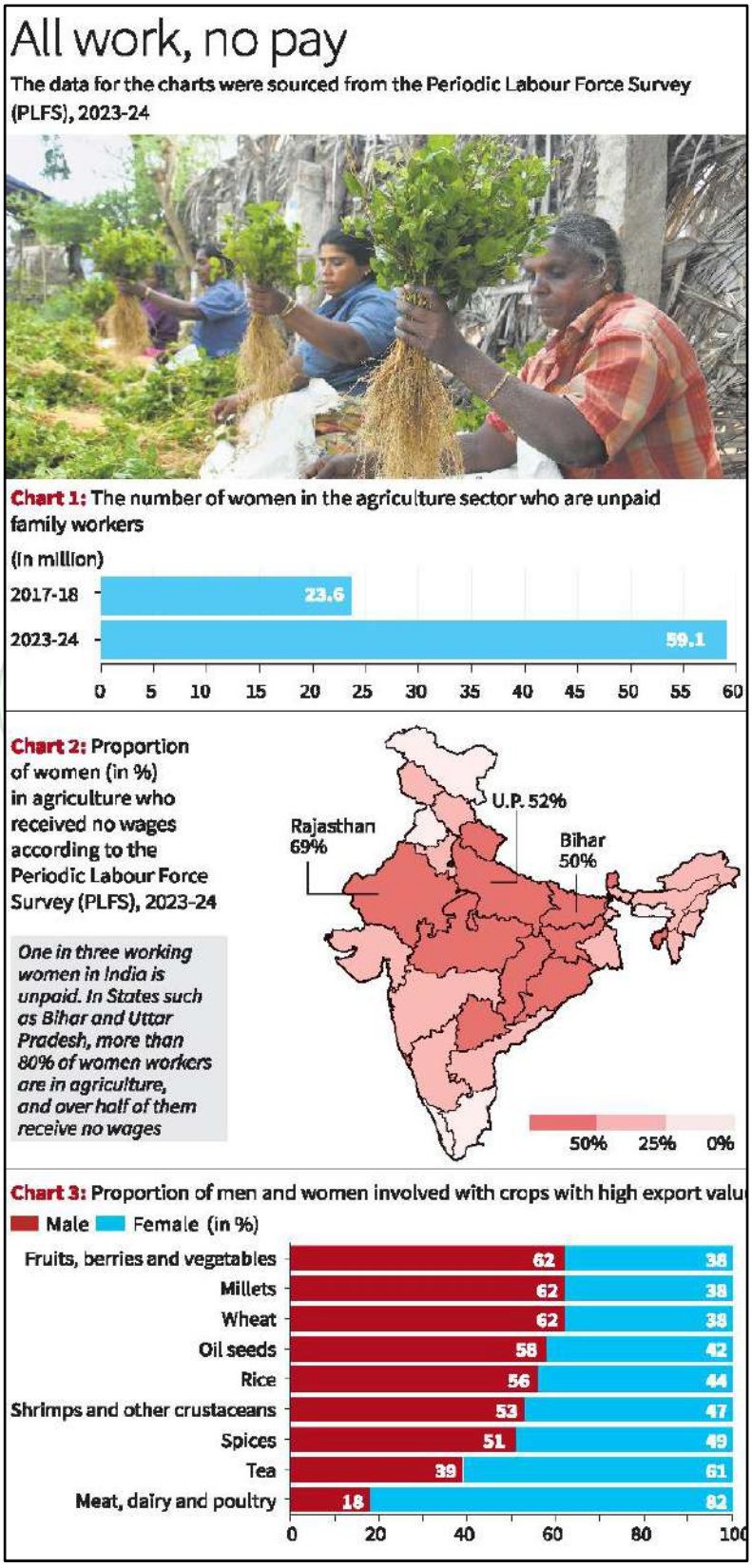
Conclusion

To harness its demographic and economic dividends, India must redefine "urban" — not as a static category, but as a **continuum of settlements** shaped by migration, mobility, and markets.

2. Women in Indian Agriculture

Why in the news?

- Recent data reveal that while women's participation in agriculture has surged by **135% over the past decade**, almost **half of them remain unpaid**, trapped in low-value roles with limited recognition or ownership.



Recent Data

- Women now constitute **42% of India's agricultural workforce**, with **two out of every three working women** engaged in farm-related activities.
- The number of **unpaid female agricultural workers** has grown **2.5 times**, from **23.6 million to 59.1 million**, in just eight years.
    - Example: In States such as **Bihar and Uttar Pradesh**, over **80% of women workers** are in agriculture, and **more than half** receive no wages.

- **Land Ownership:** Women own only **13–14% of land holdings**, curtailing their access to **credit, insurance, and subsidies**.
- **Wage Gap:** Women earn **20–30% less than men** for comparable work.
- **Institutional Exclusion:** Most women farmers are not officially recognised as farmers, and therefore remain excluded from schemes like **PM-KISAN** and **Kisan Credit Cards**.

The Global Opportunity: Trade and Technology

- **Free Trade Agreements (FTAs) as a Catalyst**
    - The **India–U.K. FTA** is projected to boost **agricultural exports by 20%**, offering **duty-free access** to **95% of farm and processed food products**.
    - Sectors such as **rice, spices, tea, dairy, and ready-to-eat meals** — which employ a **large female workforce** — stand to gain.
    - Example: Integrating gender-responsive clauses in FTAs (training, credit access, market linkages) could help women transition from **farm labourers to agri-entrepreneurs**.
- **Value Addition and Branding**
    - Women's participation is strong in **tea, spices, millets, and organic produce** — all high-value export commodities.
    - **Geographical Indication (GI)** tags, **branding**, and **export certification support** can enable women to move up the value chain — from **subsistence farming to value-added production**.

Harnessing Technology for Women Farmers

- **e-NAM**, **mobile advisory services**, and **precision agriculture tools** provide women with **real-time price information**, weather alerts, and direct market linkages.
- **AI-enabled multilingual platforms** such as **BHASHINI** and **Microsoft–AI4Bharat's Jugalbandi** enable **voice-based access** to government schemes in regional languages.
- **L&T Finance's Digital Sakhi** programme has trained rural women in **digital and financial literacy** across seven States.
- **Odisha's Swayam Sampurna FPOs** empower women farmers through export-linked training and digital marketing.
- **Jhalawari Mahila Kisan Producer Company (Rajasthan)** leverages digital tools for **branding and direct sales**.
- **Tea sector training programmes in Assam** promote women's participation in sustainable supply chains.

Reforming Land and Labour Policies

- **Legal Recognition of Women Farmers:** Joint or individual **land titling for women** would expand their access to **institutional credit, insurance, and input subsidies**.
- **Gender-Sensitive Labour Policies:** Recognition of unpaid family work in official surveys, along with **remuneration or social security coverage**, can ensure economic visibility.

- **Inclusion in FPOs and Co-operatives:** Expanding women's representation in **Farmer Producer Organisations** will enhance **collective bargaining**, **training access**, and **market linkages**.
- **Skill and Value-Chain Development:** Dedicated **women-oriented agri-training missions** focusing on **processing, logistics, and export readiness** can integrate women into global supply chains.

Way Forward:

- **Integrating Gender in Agri-Trade Policy:** Embedding **gender-responsive provisions** in FTAs and trade policy can ensure women benefit from export-led agricultural growth.
- **Strengthening Rural Infrastructure:** Investment in **storage, transport, and digital access** must prioritise women-centric clusters, especially in **eastern and central India**.
- **Leveraging Technology for Equity:** Partnerships among **government, corporates, NGOs, and FPOs** can build **multilingual, inclusive digital ecosystems** tailored for women farmers.
- **Linking Finance and Empowerment:** Expanding microcredit and **collateral-free loans** under **NABARD's Women SHG Bank Linkage Programme** can help women transition from unpaid workers to rural entrepreneurs.

3. More Women in the Labour Force, But Are They Really Employed?

Why in the news?

- The latest Periodic Labour Force Survey (PLFS) 2023–24 shows a sharp rise in India's Female Labour Force Participation Rate (FLFPR) **to 41.7%, up from 23.3% in 2017–18**.

Introduction

- The **Female Labour Force Participation Rate (FLFPR)** — the share of women either employed or seeking employment — is often considered a key indicator of gender equality and economic empowerment.
- While India's FLFPR has witnessed a **dramatic rise from 23.3% (2017–18) to 41.7% (2023–24)**, this numerical improvement conceals an uncomfortable truth: **a large proportion of women are engaged in unpaid, insecure, or low-productivity work**, reflecting economic distress rather than empowerment.

Trends and Data Insights

Overall Trend

- 2011–12 → **31.2%**
- 2017–18 → **23.3%**
- 2023–24 → **41.7%** (PLFS data)
- The rise since 2018 is **rural-led**, not urban-driven.

Nature of Employment

- Women workers fall into three broad categories:
  - **Self-employed**
  - **Regular salaried**
  - **Casual labour**

- The PLFS data show that the rise in FLFPR is mainly from:
- **"Helpers in household enterprises"** (unpaid family work)
- **Self-employed (own account workers and employers)**

Earnings Trends

- During the same period, **real earnings declined** for nearly all employment categories, except for casual workers.
- This suggests that while **more women are "working," their earnings are stagnating or falling**.
- Among self-employed women, incomes have declined, indicating **rising vulnerability and disguised unemployment**.

Understanding the Rural Paradox

- In rural India, women's economic and domestic roles are **deeply intertwined**. A woman may assist in family agriculture, tend livestock, or sell home-produced goods — yet these activities often go **unpaid** and **unrecognised** in formal statistics.
- This **blurring of boundaries** between household and market work partly explains the apparent rise in labour participation.
    - However, **if unpaid "helper" roles are counted as employment**, the FLFPR may be **overstating actual economic empowerment**.

Structural and Social Implications

- The growing presence of women in **low-paid or unpaid work** reflects **economic distress** rather than labour market dynamism.
- Families facing male unemployment or income loss may rely on women's informal labour to survive.
- The **quantity of jobs** (more women working) has improved, but the **quality of employment** (secure, paid, skill-based work) has deteriorated.
- Lack of formal contracts, social security, and decent wages persists.
- Over **90% of female workers** remain in the **informal sector**, lacking protection under labour laws or access to maternity benefits.
- Urban women still face **stagnant participation** due to safety concerns, unpaid care work, and cultural barriers.
- Rural participation rises largely due to **family-based enterprises** and **subsistence agriculture**, not industrial or service-sector expansion.

Way Forward

- **Reclassify and Recognise Unpaid Work:** National statistics must distinguish between **productive employment** and **unpaid household labour**.
- Introduce **Time Use Surveys** more frequently to capture invisible contributions of women.
- **Create Quality Jobs:** Invest in **labour-intensive manufacturing, agri-processing, and rural enterprises** that can absorb women into paid employment.
- **Bridge Skills and Education Gaps:** Expand **vocational training, digital literacy**, and **STEM education** for women, particularly in semi-urban and rural regions.
- **Reduce the Care Burden:** Strengthen **childcare facilities, creches**, and **flexible work arrangements** to allow women to participate meaningfully in the workforce.
- **Policy Convergence:** Integrate gender goals into **National Employment Policy**, **Skill India**, and **Digital India** missions.

Conclusion

True progress will depend not merely on how many women work, but how and where they work — with dignity, income security, and opportunity.

4. Supreme Court verdict upheld equal inheritance rights for tribal women

Why in the news?

- The Supreme Court, on July 17, 2025, ruled that women from the Gond community, a Scheduled Tribe, are entitled to inherit ancestral property, even in the absence of explicit customary recognition. This landmark judgment ensures gender parity in inheritance rights.

SC Observations

- **Doctrine of Fairness**: The Court emphasized that retrospective laws impairing vested rights violate fairness and legal certainty. Women's rights cannot be denied without proven custom.
- **Right to Privacy and Bodily Autonomy**: Reproductive decisions and property rights fall under the **right to privacy** and **bodily autonomy** under **Article 21**.
- **Gender Equality**: A patriarchal interpretation of tribal customs was rejected, stressing that gender discrimination in inheritance contradicts constitutional equality under **Articles 14** and **15**.

About the Legal Context and the Dispute

- **Hindu Succession Act, 1956**: The Hindu Succession Act governs the personal law of Hindus, Buddhists, Jains, and Sikhs. Section 2(2) specifically excludes Scheduled Tribes from its provisions unless extended by the Central Government.
    - For the **Gond community**, no such notification exists, leaving them governed by their customary laws, many of which are unwritten and localised.
- **Customary Law and Evidentiary Burden**: Section 3 of the **Hindu Marriage Act** defines custom as ancient, reasonable, and not opposed to public policy.
    - However, customs must be proved by clear and convincing evidence. The plaintiffs, children of a Gond woman, claimed equal inheritance rights, but the lower courts dismissed the case, as they failed to prove such a custom.

What Did the Supreme Court Say?

- The Court reversed the lower courts' findings, presuming **inclusion** rather than **exclusion**.
- It stressed that constitutional principles of **equality** and **gender justice** should guide interpretation when customs are unclear.

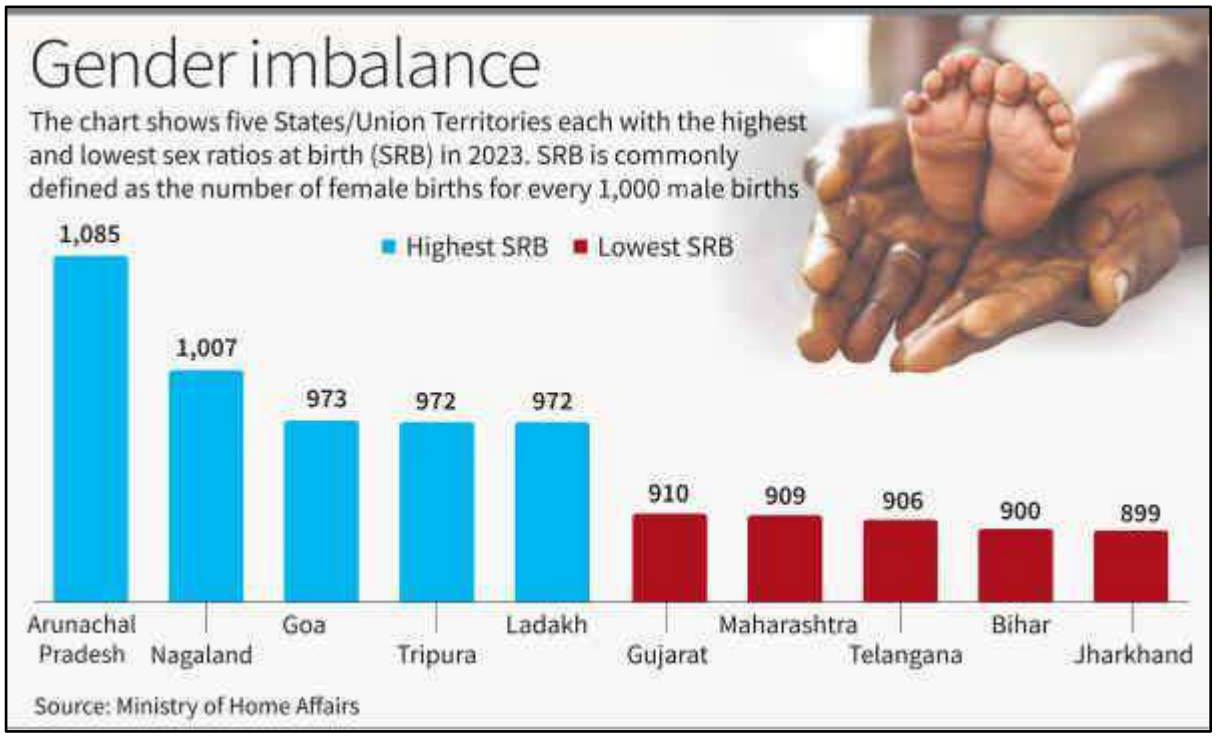
Conclusion

By shifting the burden of proof and ensuring **procedural fairness**, the Court has redefined the relationship between **tribal customs** and **constitutional morality**. This judgment is a step toward eliminating gender-based discrimination while respecting **tribal autonomy**.

5. Civil Registration System (CRS) 2023 Report

Why in the news?

- India registered 2.52 crore births in 2023, around 2.32 lakh fewer than in 2022, the Vital Statistics of India based on the Civil Registration System (CRS) report for the year 2023 shows.



Key Findings

- **Birth Registration Trends:** India registered **2.52 crore births in 2023**, about **2.32 lakh fewer** than in 2022, indicating a marginal decline in the birth rate.
  - Example: The registration completeness reached **98.4%**, showing efficiency in civil documentation.
- **Death Registration Trends:** Registered deaths stood at **86.6 lakh in 2023**, almost unchanged from 2022 (**86.5 lakh**).
  - Example: Unlike 2021, which saw an excess of **21 lakh deaths** (likely due to COVID-19), 2022–23 recorded no major spike.
- **Sex Ratio at Birth:** The **lowest sex ratio** was in Jharkhand (899), followed by Bihar (900) and Telangana (906). The **highest ratio** was seen in Arunachal Pradesh (1,085), Nagaland (1,007), and Kerala (967).
  - Example: Bihar has consistently reported one of the lowest sex ratios since 2020.
- **Institutional Births:** About **74.7%** of total births in 2023 were **institutional deliveries**, reflecting improved access to healthcare.
  - Example: Excludes data from Sikkim.
- **Timely Registration by States:** 11 States/UTs achieved **over 90% registration within 21 days**, including Gujarat, Tamil Nadu, Puducherry, and Chandigarh.
  - Example: Odisha, Maharashtra, and Andhra Pradesh reported 80–90% timely registration.

About Civil Registration System (CRS)

- The Civil Registration System (CRS) in India is a continuous, permanent, and compulsory recording of vital events such as **births, deaths, and stillbirths**.
- It provides the legal and statistical foundation for demographic data essential for governance, planning, and policy formulation.
- The system operates under the **Registration of Births and Deaths Act, 1969**.

Objectives of CRS

- To record and maintain accurate data on **births, deaths, and stillbirths**.
- To provide **legal proof of age, identity, and citizenship** through birth certificates.

- To facilitate **public health monitoring** and aid in **population-based policy decisions**.

6. The Road to Gender Equity in Courts

Why in the news?

- The India Justice Report 2025 highlighted women's under-representation in higher judiciary—only **3.1% in the Supreme Court** and **14% in High Courts**, urging reforms via All-India Judicial Service.

Current Status of Women in Judiciary

- **Supreme Court:** Of the 34 judges, only **one woman** serves, and she is expected to be the first woman Chief Justice of India.
- **High Courts:** Out of 25 High Courts, only **one is headed by a woman Chief Justice**, reflecting deep-rooted gender disparity.

Root Causes of Under-Representation

- **Collegium System:** Judicial appointments in higher courts are made through the Collegium system, dominated by a small, self-selecting group of senior judges. This system functions like an elitist network, restricting opportunities for women and socially marginalized groups.
- **Lack of Institutional Support:** Infrastructural deficiencies deter women's participation. Nearly **20% of district court complexes** lack **separate toilets for women judges**, as reported by the Centre for Research and Planning, Supreme Court (2023).
- **Absence of Transparent Criteria:** No uniform selection mechanism exists for higher judiciary appointments, making the process opaque and exclusionary.

Need for Reform: All-India Judicial Service (AIJS)

- **Constitutional Basis:** Article 312 empowers Parliament to create new All-India Services, including a judicial one.
- **Proposal:** An All-India Judicial Service (AIJS) would enable **merit-based, transparent, and competitive recruitment** to higher judicial posts.
- **Support from Leadership:** President **Droupadi Murmu**, in her Constitution Day 2023 address, endorsed the AIJS to enhance inclusivity and representation.
    - **Example:** The AIJS can emulate the **UPSC model**, known for its fairness and diversity.

Counterarguments and Judicial Concerns

- Opponents within the judiciary and Bar argue that AIJS could lead to **executive interference** and **dilution of judicial independence**. However, this fear appears unfounded:
- The **lower judiciary**, recruited through public exams, operates independently.
- With the **Supreme Court controlling service standards and training**, autonomy can be preserved alongside transparency.

Way Forward

- **Establish AIJS under Supreme Court supervision** for fair, national-level recruitment.
- **Improve infrastructure** in courts to make them gender-friendly and inclusive.
- **Ensure transparent promotion mechanisms** to encourage women to move from lower to higher judiciary.
- **Conduct gender-sensitisation programmes** for judicial officers at all levels.
- **Encourage mentorship networks** for women in law to bridge professional gaps.

GS 2 - GOVERNANCE, CONSTITUTION, POLITY, SOCIAL JUSTICE AND INTERNATIONAL RELATIONS

A. POLITY

I. Preamble, Basic structure and amendability of the Constitution

1. Provincial Citizenship

Why in the news?

- Recent political developments in States such as **Jharkhand, Jammu and Kashmir, and Assam** indicate the emergence of what scholars term **"Provincial Citizenship"** — a concept rooted in **nativist politics**, **domicile-based exclusion**, and **regional identity assertion**.

Evolution and Context

- **Mobility and Sedentarism:** Historically, **mobility** symbolised progress and civilisation — from caravan routes to global migration flows in the age of globalisation.
  - *Example:* Internal migration in India remains high, with over **450 million internal migrants** (Census 2011), yet mobility continues to encounter local barriers of domicile and nativity.
  - Despite this, **sedentarism** — the tendency to privilege natives and restrict outsiders — remains deeply embedded in political narratives around access to resources, jobs, and representation.
- **Pandemic and Migrant Crisis**
  - The **COVID-19 lockdown (2020)** exposed the precarity of India's internal migrants, with millions walking back to home States due to exclusion from social protection in host States.
  - *Example:* Migrants from Bihar, Jharkhand, and Odisha working in Delhi or Mumbai were denied welfare benefits tied to domicile or ration cards.
- **Nativist Backdrop**
  - This socio-political environment has allowed **nativist sentiments** to evolve into **provincial citizenship** movements — where "locals" claim priority rights over jobs, education, and resources.

Provincial Citizenship: Key Features

- **Rooted in Identity Politics:** Appeals to ethnicity, indigeneity, and nativity ("Adivasi", "local", "indigenous") replace the constitutional category of "citizen."
- **Instrument of Political Mobilisation:** Domicile certificates and local recruitment quotas become tools of **vote-bank politics**.
- **Conflict with Constitutional Guarantees:** It directly undermines **Article 16(2)**, which prohibits discrimination in public employment based on residence or place of birth.

Constitutional and Institutional Concerns

- **Conflict with Fundamental Rights:** Domicile-based exclusions contradict **Articles 15, 16, and 19**, which ensure equality, freedom of movement, and the right to work anywhere in India.
  - The **States Reorganisation Commission (SRC, 1955)** had already cautioned that such domicile restrictions would "negate the concept of common Indian citizenship."
- **Rise of Judicial Intervention:** The **Supreme Court** has repeatedly had to adjudicate disputes over residence-based reservations or recruitment policies, indicating the inadequacy of legislative mechanisms to balance **regional autonomy and national unity**.

- **Migration and Federalism:** With internal migration intensifying due to urbanisation and economic disparities, provincial citizenship creates **tensions within federalism**, leading to **"citizenship fragmentation"** within the Union.

Theoretical Lineages and Academic Vocabulary

- **"Sons of the Soil"** (Myron Weiner, 1978) – ethnic mobilisation against internal migrants.
- **"Citizen Outsiders"** (Ananya Roy, 2010) – marginalisation within legal citizenship.
- **"Differentiated Citizenship"** (Jayal, 2013) – layered access to rights.
- **"Paused Citizens"** (Sharma, 2024) – suspended or incomplete citizenship experiences.
- **"Hyphenated Nationality"** (Sarkar, 2025) – regional belonging linked to national identity.

Implications for the Indian Polity

- **Erosion of National Citizenship:** Provincial citizenship weakens the emotional and legal unity of **"Bharatiya citizenship"**, risking internal borders within the Union.
- **Threat to Labour Mobility:** Migrant labourers face discrimination in housing, jobs, and voting rights, deterring **inter-State mobility** crucial for economic integration.
- **Reinforcement of Regional Populism:** Domicile becomes a **political weapon** for short-term electoral gain rather than a tool of social inclusion.
- **Judicial and Administrative Strain:** Continuous litigation over domicile laws burdens constitutional institutions and erodes federal harmony.

Conclusion

The rise of **provincial citizenship** signals a troubling drift from **constitutional universalism** toward **territorial exclusivism**. While regional identity and local rights are legitimate within a federal framework, using domicile as an exclusionary instrument undermines **Articles 15, 16, and 19**, and dilutes the constitutional vision of **unity in diversity**.

II. Fundamental Rights, DPSPs and Fundamental Duties

1. Freedom of Religion & Right to Privacy Interlinked: SC

Why in the news?

- Supreme Court bench of Justices **J.B. Pardiwala and Manoj Misra** quashed multiple FIRs filed under the **Uttar Pradesh Prohibition of Unlawful Conversion of Religion Act**, reaffirming that the **right to privacy (Article 21)** and the **freedom of conscience and religion (Article 25)** are constitutionally interlinked.

Key Judicial Observations

- **Faith and Privacy Connection:** Article 25 includes the **choice to adopt, express, or not express a religion**, which falls within the realm of privacy and individual autonomy.
- **Freedom of Conscience:** The Court observed that conscience is a **purely private thought process**, protected from State interference.
- **Privacy within Part III:** Although privacy is not separately enumerated, it is embedded across fundamental rights, including Articles **25, 26, and 28**.
- **Autonomy in Marriage:** Drawing parallels with marriage, the Court reiterated that **choosing one's partner or faith** is a matter of personal liberty; **consent of family, community, or State is irrelevant** once two adults agree.

Constitutional Implications

- **Article 21 and 25 Integration:** Personal decisions on faith and marriage are core aspects of **individual autonomy** protected under Article 21.
- **Limits on State Power:** The State may act only against **forced or fraudulent conversions**, not voluntary ones. Laws that compel prior disclosure or permission **violate privacy and autonomy**.
- **Precedent Support:** The ruling aligns with *Shafin Jahan (2018)*, *Lata Singh (2006)*, and *Shakti Vahini (2018)*, which upheld adult choice in marriage and faith as constitutionally protected.

Conclusion

The judgment strengthens India's constitutional ethos of **individual liberty, dignity, and secularism**, clarifying that **faith and belief are personal domains** beyond State control. Anti-conversion laws must target **coercion**, not **choice**, ensuring that privacy remains the foundation of religious freedom in a democratic society.

III. The Judiciary

1. Alternative Dispute Resolution (ADR)

Why in the news?

- India's judicial system is plagued by **4.58 crore pending cases**, with significant backlogs in the **Supreme Court** and **High Courts**. To address this, **Alternative Dispute Resolution (ADR)** has become crucial.

What is ADR and How Does It Function in India?

- **ADR** encompasses methods like **arbitration**, **mediation**, and **Lok Adalats** to resolve disputes outside the formal court system. These methods emphasize mutual agreement and third-party intervention.
    - **Arbitration and Conciliation Act, 1996**: Governs arbitration, ensuring speedier resolutions with a **180-day** deadline.
    - **Lok Adalats**: Settle disputes before litigation, with decisions that are **final and binding**. They function under the **Legal Services Authorities Act, 1987**.

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The Constitutional and Legal Basis of ADR

- **Article 39A** of the **Indian Constitution** ensures **equal justice** and **free legal aid**, which supports ADR.
- **Section 89 of the CPC (1908)** and the **Arbitration and Conciliation Act, 1996** provide the legal framework for ADR, recognizing arbitration, conciliation, and mediation.

Need of ADR

- **Reducing Delays and Backlog:** India faces an overwhelming case backlog, particularly in **Uttar Pradesh**, **Bihar**, and **Andhra Pradesh**. ADR offers a solution by diverting simpler cases to quicker resolution mechanisms like **Lok Adalats** and **mediation**.
    - ***Example**:* The National **Lok Adalat** and **e-Lok Adalats** are pivotal in reducing pendency at the district level.

- **Ensuring Social Justice:** ADR is more accessible and cost-effective, particularly for marginalized communities. It ensures **equal access to justice**, particularly in **rural areas** and for **low-income groups**.
- **Improving Court Efficiency:** ADR frees up court resources, allowing the judiciary to focus on more complex cases. **Lok Adalats** handle thousands of cases annually, significantly reducing pendency.
    - ***Example**:* In Kerala, Lok Adalats resolved more than 1.5 lakh cases in 2022 alone, contributing to the reduction in case pendency.

Challenges in ADR Implementation

- **Awareness**: Many people, especially in rural regions, are unaware of ADR mechanisms. Raising awareness is crucial to ensure greater accessibility.
- **Inconsistent Implementation**: ADR practices are not uniformly adopted across states, creating regional disparities in dispute resolution.
- **Legal Hurdles**: In some cases, arbitration awards face challenges in enforcement, leading to delays even after a resolution is reached.

Way Forward

- **Legal Reforms:** The **Arbitration and Conciliation Act** needs further amendments to enhance efficiency. **Mediation centres** in courts should be promoted, and **mediator training** should be strengthened.
- **Awareness Campaigns:** Government-led initiatives should raise awareness about ADR, especially in **remote areas**.
- **Building Judicial Capacity:** Training more **mediators** and **arbitrators** will ensure effective dispute resolution. **ADR education** should be incorporated into law school curricula.

Conclusion

By integrating ADR into the legal framework, India can overcome its case backlog and provide **equal access to justice** for all citizens.

2. Pendency of Execution Petitions in District Courts

Why in the news?

- The Supreme Court recently termed the condition of the country's lower courts as *"highly disappointing"*, referring to the pendency of over **8.82 lakh execution petitions** across district courts.

Magnitude of Pendency

- As per the **National Judicial Data Grid (NJDG)**:
    - **Average time for disposal of a civil suit:** 4.91 years.
    - **Average time for execution of decree:** an additional 3.97 years.
    - **47.2%** of pending execution petitions were filed before 2020.
- This means even after winning, litigants spend nearly a decade before actual enforcement.
- *Example:* Maharashtra alone accounts for over **3.4 lakh** pending petitions — the highest in India.

Causes Behind the Delay

- **Procedural Bottlenecks:** Under the **CPC**, the losing party must be served a notice during execution, giving them the right to raise objections.
- **Lack of Legal Representation and Adjournments: 38.9%** of delays are due to non-availability of legal counsel.
- **Judicial Stays and Document Delays: 17%** cases are delayed due to court stays; **12%** await necessary documentation.

- **Regional Disparities:** Maharashtra and Tamil Nadu lead, while smaller states have relatively fewer execution cases, revealing infrastructure and administrative imbalance.

Implications

- **Erosion of Public Trust:** Citizens lose faith when judicial victories remain unenforced.
- **Economic Impact:** Commercial litigation suffers; enforcement delays affect India's *Ease of Doing Business* metrics.
- **Justice Paradox:** "Winning" in court without actual relief undermines constitutional guarantees of equality and justice.

The Way Forward

- **Digital Monitoring:** Real-time NJDG dashboards must specifically track execution cases with categorization.
- **Dedicated Execution Benches:** Separate units within civil courts to fast-track enforcement.
- **Legislative Reform:** Amend CPC to restrict repeated objections and reduce procedural redundancies.
- **Judicial Accountability:** High Courts must ensure compliance with Supreme Court timelines.
- **Capacity Building:** Improve infrastructure, staff strength, and digitization at district-level courts.

IV. Constitutional and Non-Constitutional Bodies, Statutory, regulatory and quasi-judicial bodies

1. Union Public Service Commission (UPSC)

Why in the news?

- The Union Public Service Commission (UPSC) marks a century of its establishment on October 1, 2025

Historical Evolution

- **Origins in Colonial India**
  - The idea of an independent commission to recruit civil servants first appeared in the **Government of India Act, 1919**, following recommendations of the **Lee Commission (1924)**.
  - The Lee Commission emphasised that democratic governance requires a **professional civil service**, protected from "political or personal influences."
- **Establishment in 1926**: The **Public Service Commission**, headed by **Sir Ross Barker**, was set up on **October 1, 1926**, with limited powers under British rule.
- **Expansion under the Government of India Act, 1935**: The body was upgraded to the **Federal Public Service Commission**, granting Indians a greater administrative role.
- **Post-Independence Transformation**: With the adoption of the **Constitution of India (1950)**, the UPSC assumed its present form under **Articles 315–323**, functioning as an **independent constitutional body**.

Philosophy and Pillars of the Institution

- **Trust:** The UPSC has earned the confidence of millions of aspirants who believe that their success depends solely on merit. This trust arises from **transparency, impartiality, and procedural integrity** in every stage of examination and recruitment.
- **Integrity:** The Commission has maintained independence from political interference, ensuring that **selection processes remain insulated from external influence**.
- Confidentiality, security of question papers, and anonymous evaluation systems are upheld with rigour.
- **Fairness:** UPSC's commitment to **equal opportunity** extends to candidates from rural and underprivileged backgrounds, and those writing in any of the **22 scheduled languages**.

- It remains a **symbol of a true "level playing field"**, where linguistic or socio-economic barriers do not determine success.

Reforms and Technological Adaptations

The UPSC has consistently evolved to meet contemporary challenges without compromising its core values.

- **Digital Reforms**
  - Introduction of a **new online application portal** for user convenience.
  - **Face-recognition technology** to eliminate impersonation.
  - Plans to incorporate **Artificial Intelligence (AI)** for secure, efficient examination management.
- **PRATIBHA Setu Initiative**
  - The **Professional Resource And Talent Integration Bridge for Hiring Aspirants (PRATIBHA Setu)** connects candidates who reach the interview stage with employment opportunities in other sectors.
  - This initiative widens the scope of national talent utilisation beyond the final selection list.
- **Institutional Continuity**: Despite global changes in recruitment and technology, the UPSC continues to preserve its **"gold standard" of examination integrity** — balancing modernization with credibility.

Challenges Ahead and the Road to the Future

- **Evolving Skill Demands**: Governance in the age of **AI, climate change, and globalisation** requires new administrative competencies. The UPSC must align its testing to **21st-century governance challenges**.
- **Balancing Merit with Diversity**: While preserving meritocracy, the Commission must ensure continued representation from **marginalised and regional backgrounds**.
- **Public Trust and Ethics**: Sustaining faith in the system amidst rising competition and misinformation requires stronger **ethical orientation and transparency**.
- **Continuous Reform**: Periodic review of syllabi, inclusion of **emerging disciplines** (digital governance, sustainability), and enhanced **candidate outreach** will maintain UPSC's global relevance.

Conclusion

From its colonial beginnings to becoming the **world's most sophisticated recruitment body**, the UPSC has remained steadfast in its mission: selecting the best talent to serve the nation.

B. GOVERNANCE

I. Government policies and Interventions

1. Road Accidents

Why in the news?

- More than 1.73 lakh people were killed and 4.47 lakh injured in road accidents across the country in 2023 with nearly 46% of the victims being two-wheeler riders, according to a report of the National Crime Records Bureau (NCRB).

Key Data Highlights (2023)

Indicator	Figure	Observation
Total Road Accidents	4,64,029	+3.9% over 2022
Total Fatalities	1,73,826	+1.6% over 2022
Most Dangerous Hours	6 p.m.–9 p.m.	20.7% of total accidents

Most Affected Vehicle Type	Two-wheelers	45.8% of total deaths
Major Causes	Speeding (58.6%), Careless Driving (23.6%)	82% combined share

Major Causes of Road Accidents

- **Speeding and Careless Driving:** These two causes together accounted for more than **four out of every five deaths** on Indian roads.
- **Weak Enforcement:** Inconsistent application of penalties under the **Motor Vehicles (Amendment) Act, 2019**, and lack of automated systems.
- **Poor weather conditions, intoxicated driving, and animal crossings** collectively caused **4,952 deaths**.
- These point to weak infrastructure management — inadequate lighting, absence of fencing, and poor signage — rather than driver fault alone.

Vehicle-Type Analysis

- **Two-Wheelers** – Accounted for **79,533 deaths (45.8%)**, indicating high vulnerability of riders. **Pedestrians** – Contributed to **27,586 deaths (15.9%)**, reflecting inadequate sidewalks and crossing infrastructure.
- **Cars/SUVs/Jeep Segment** – Caused **24,776 deaths (14.3%)**, with **Uttar Pradesh** alone accounting for **19.2%** of all such fatalities.
- **Trucks and Lorries** – Responsible for a significant share of **heavy-vehicle accidents**, with **Uttar Pradesh** reporting **29.9% of total truck-related deaths**.

Geographical and Road-Type Distribution

- **National Highways** remain the deadliest, accounting for **34.6% of all fatalities**, despite constituting only about **2% of total road length**.
- **State Highways** contributed **23.4% of deaths**, while rural and district roads made up the rest.
- **Urban vs Rural Divide:** Although cities have higher traffic density, **rural areas record a higher fatality rate** due to high-speed corridors, poor trauma care, and low helmet/seatbelt compliance.

Way Forward

- Deploy **Intelligent Transport Systems (ITS)**, **speed cameras**, and **automated challan systems** for consistent enforcement.
- Expand **road safety education** under school curricula and driver licensing processes.
- Strengthen enforcement of **helmet and seatbelt laws**, especially in tier-II and tier-III cities.
- Adopt the **"Safe System Approach"** promoted by the World Bank and WHO — designing roads that forgive human error.
- Prioritise **black-spot rectification**, **pedestrian crossings**, and **barrier installation** on National and State Highways.
- Operationalise **District Road Safety Committees** under the **Motor Vehicles Act (2019)** for localised monitoring.
- Enhance coordination between **MoRTH**, **State Transport Departments**, and **Police** through unified digital dashboards.
- Expand **NHAI's Highway Ambulance Network**, link hospitals through **Integrated Command Centres**, and train first responders.
- Implement **mandatory trauma care centres** within 100 km on National Highways.
- Integrate NCRB and MoRTH data to build **predictive analytics models** for high-risk corridors.
- Use **GIS mapping** and **AI-based crash analytics** to guide budgetary allocation for safety interventions.

2. The Telecommunications (Telecom Cyber Security) Amendment Rules, 2025

Why in the news?

- The Government of India has notified the **Telecommunications (Telecom Cyber Security) Amendment Rules, 2025**, bringing all **digital services linked with mobile numbers** — including messaging, payment, and delivery apps — under the **telecom cybersecurity regulatory framework**.

Key Features of the Amendment

- **Wider Regulatory Scope**
  - Introduces a new category — Telecommunication Identifier User Entities (TIUEs) — covering all platforms using mobile numbers for customer identification or service delivery.
  - Includes: WhatsApp, Paytm, PhonePe, Zomato, Swiggy, Ola, Uber, etc.
  - Excludes: Licensed telecom operators (e.g., Airtel, Jio, Vi).
- **Unified Cybersecurity Oversight**
  - TIUEs must comply with **government orders to suspend user accounts** linked with flagged numbers.
  - Enables **simultaneous suspension** of a user's mobile number across multiple platforms if marked as a security risk.
  - Allows **immediate action without prior notice** when required in the "public interest".
- **Government-run Mobile Number Verification (MNV) Platform**
  - Establishes a **central validation gateway** to authenticate mobile numbers provided by users.
  - Cross-verification against telecom operators' subscriber databases.
  - Access available to both **government agencies and private TIUEs** (voluntary or directed).
  - Fees shared between the government and telecom operators.
  - Mandatory compliance with **data protection laws** during verification.
- **Regulation of Used Mobile Phone Market**
  - Buyers and sellers must verify a device's **International Mobile Equipment Identity (IMEI)** number against a government database before sale.
  - Prohibits sale/purchase of **blacklisted or tampered IMEI devices**.
  - Manufacturers barred from reusing IMEIs already active on Indian networks.

Rationale and Context

- India reported **7.4 lakh cybercrime cases in the first four months of 2024**, with **85% involving online financial frauds**.
- **Cyber fraud losses tripled** from ₹7,465 crore (2023) to ₹22,845 crore (2024).
- **Fraud pattern:** Fake or stolen mobile numbers used to create accounts, bypass OTP verifications, and conduct scams on platforms like WhatsApp, Telegram, and UPI apps.
- **Stolen handset market** aided fraud through cloned or tampered IMEIs.
- The new rules aim to **close identity, verification, and tracking loopholes** in India's expanding digital ecosystem.

Significance of the Reform

- Unifies telecom and digital platforms under one security regime.
- Enables **real-time response** to fraudulent activities by disabling associated accounts instantly.
- Ensures that every digital service account is **linked to a valid and verified mobile number**.
- Reduces anonymity and prevents **mass identity abuse** in cyber frauds.
- By regulating **IMEI authenticity**, it disrupts the ecosystem of stolen and cloned phones.
- Enhances traceability and accountability of devices used in crimes.

- Integrates multiple agencies — **Department of Telecommunications, I4C, CERT-In, and telecom operators** — under a coordinated regulatory mechanism.

Implementation Challenges

- **Privacy Concerns:** Government-led verification may raise fears of **overreach or mass surveillance**.
- **Data Sharing Risks:** Centralisation of mobile data increases vulnerability to breaches.
- **Operational Readiness:** Smaller digital platforms may struggle with compliance costs and technical integration.
- **Appeal Mechanisms:** Immediate suspension powers may lead to **erroneous blocking** without due process.

Way Forward

- Ensure **independent oversight** of suspension and verification decisions.
- Establish **time-bound redressal mechanisms** for wrongly flagged users.
- Conduct **periodic audits** to ensure data protection compliance.
- Integrate rules within the broader framework of the **Digital Personal Data Protection Act, 2023**.
- Encourage **public awareness campaigns** on SIM misuse, fraud reporting, and device registration.

3. Extradition of Fugitives: Challenges and Strategies

Why in the news?

- Union Home Minister Amit Shah addressed the CBI conference on "Extradition of Fugitives," outlining India's new strategy, legal reforms, and global operations to bring fugitives to justice.

Institutional and Legal Reforms

- **Fugitive Economic Offenders Act, 2018:** Enabled the **seizure of assets of economic fugitives** within India.
  - *Example:* Nearly **USD 2 billion** recovered under this law in the past four years.
- **Global Operations and Extradition Coordination:** The **CBI's Global Operation Centre** coordinates with international police forces to locate fugitives.
  - *Example:* From **January to September 2025**, **189+ Red Corner Notices** were issued — the highest in CBI's history.
- **New Criminal Laws:** The **Bharatiya Nagrik Suraksha Sanhita (BNSS)** introduces **"Trial in Absentia"** (Sections 355–356), allowing courts to **try fugitives even in their absence**.
  - *Example:* Once convicted, their legal status changes internationally, strengthening India's extradition requests.

Existing Issues in Indian Prisons

- **Overcrowding:** As per the **Prison Statistics India 2023** report by the National Crime Records Bureau (NCRB), India's prisons operated at an average occupancy rate of **120.8%.**
- **Poor Infrastructure and Hygiene:** Many prisons face challenges like inadequate ventilation, sanitation, and access to healthcare. Such conditions fail to meet international norms and are often cited as grounds to deny extradition.
- **Lack of Classification:** There is **no separate category of detention facilities** for economic offenders, foreign nationals, or high-risk fugitives.
- Reports from the National Human Rights Commission (NHRC), have highlighted cases of **custodial violence, delayed medical attention, and limited legal access,** further weakening India's position in international courts.

Reforming the Extradition Mechanism

- **Passport Coordination System:** The Home Minister highlighted the need for real-time coordination between the passport issuance process and law enforcement agencies.
  - Passports should be red-flagged, seized, or cancelled immediately after a **Red Corner Notice (RCN)** is issued by Interpol to prevent international travel by fugitives.
- **Blue Corner to Red Corner Notice Conversion:** A special campaign will be launched to convert Blue Corner Notices (issued for information) into Red Corner Notices (requests for arrest and extradition).
  - Each State will have a dedicated cell for monitoring and implementing this conversion.
- **Multi-Agency Coordination:** A joint task force under the Multi Agency Centre (MAC), involving the CBI and Intelligence Bureau (IB), will ensure seamless coordination in tracking and extraditing fugitives.

II. Developmental processes and Development industry

1. Eight States with International Borders, 0.13% of Exports

Why in the news?

- The imposition of **25% additional U.S. tariffs on Indian exports in August 2025** exposed not merely a bilateral trade friction but a deeper structural fault line within India's export geography.

India's Centralised Export Geography

- **Export Concentration:** Over **70% of India's merchandise exports** originate from just four States — **Gujarat, Maharashtra, Tamil Nadu, and Karnataka**.
  - *Example:* Gujarat alone accounts for more than **one-third of India's total exports**, benefiting from industrial corridors, port infrastructure, and political continuity.
- **Neglected Heartland:** The populous States of **Uttar Pradesh, Bihar, and Madhya Pradesh**, together contributing only **5% of exports**.
- **Implication:** Such dependence on a few industrial belts makes the national economy **vulnerable to local disruptions** — a strike in Chennai or a port closure in Kandla can ripple through the entire export chain.

Marginalisation of the Northeast

- **Economic Exclusion:** The eight northeastern States, sharing **5,400 km of international borders**, contribute a negligible **0.13% of India's total exports**.
  - *Example:* Despite proximity to ASEAN markets, there are **no operational trade corridors** linking the region to major foreign markets.
- **Institutional Absence:** Bodies such as the **Prime Minister's Economic Advisory Council** and the **Board of Trade** have **no representation** from the region.
  - *Example:* The **DGFT's 2024–25 Strategic Export Plan** had **no dedicated section** for northeastern trade corridors.
- **Policy Oversight:** Schemes like **RoDTEP (Remission of Duties and Taxes on Exported Products)** and **Production-Linked Incentives (PLI)** are concentrated in western and southern belts, bypassing the northeast's potential sectors like tea, bamboo, and organic agriculture.

The Tea Economy and Tariff Impact

- **Fragile Sector:** Assam produces over **50% of India's tea output**, but most of it remains unbranded **CTC tea**, vulnerable to global price fluctuations.
  - *Example:* With U.S. and EU buyers reassessing orders post-tariff, **wages are stagnating** and plantations in Upper Assam are cutting costs, threatening thousands of livelihoods.

- **Value Addition Deficit:** The lack of **processing and branding infrastructure** keeps the region dependent on low-margin bulk exports, reducing resilience to trade shocks.

Strategic Borders, Economic Neglect

- **Shrinking Border Trade:** Since the **2021 Myanmar coup**, trade across **Moreh (Manipur)** and **Zokhawthar (Mizoram)** has sharply declined.
  - *Example:* The **scrapping of the Free Movement Regime in 2024** ended traditional cross-border exchanges and affected local livelihoods.
- **Security Over Commerce:** The border is now dominated by **surveillance and counter-insurgency** operations. Infrastructure projects are either stalled or performative, converting potential trade corridors into **"containment grids"**.
- **Lost Act East Vision:** India's **Act East Policy**, once projected to transform the northeast into a bridge to ASEAN, remains largely rhetorical as projects like the **India-Myanmar-Thailand Trilateral Highway** have stagnated.

Way Forward

- **Infrastructure First:** Development of **multi-modal logistics hubs**, **border trade zones**, and **inland water connectivity** is essential.
- **Institutional Inclusion:** Economic councils and export boards must include **representatives from northeastern States** to ensure region-specific strategy formulation.
- **Diversification of Trade Geography:** Over-reliance on coastal States must yield to **balanced regional industrialisation**, integrating the **northeast, central India, and hinterland regions** into export ecosystems.
- **Integration with ASEAN:** Strengthening **border trade with Myanmar and Bangladesh**, reopening and securing cross-border markets, and leveraging the **BBIN (Bangladesh-Bhutan-India-Nepal) framework** can transform the region's prospects.

C. SOCIAL JUSTICE

I. Welfare Schemes for Vulnerable Sections

1. Crimes Against Children

Why in the news?

- According to the latest data from the National Crimes Records Bureau, in 2023 cases of crimes against children recorded the sharpest rise in three States — Assam, Rajasthan and Kerala.

State-wise Analysis of Surge in Cases

1. Assam

- **Increase in cases**: The number of recorded crimes against children surged by nearly **100%** in 2023.
- **From 5,100 cases (2018-2022)** to **10,000 cases** in 2023.
- **Key reason**: A **crackdown on child marriage**.
- **Prohibition of Child Marriage Act, 2006** saw a major increase in cases:
  - From **150 cases per year (2020-2022)** to **5,267 cases in 2023**.
  - Child marriage cases accounted for **52%** of all crimes against children in Assam in 2023, up from **3-4%** in previous years.

2. Rajasthan

- **Increase in cases**: A rise of **70%** in crimes against children in 2023.
- **From 6,200 cases (2018-2022)** to **10,500 cases** in 2023.

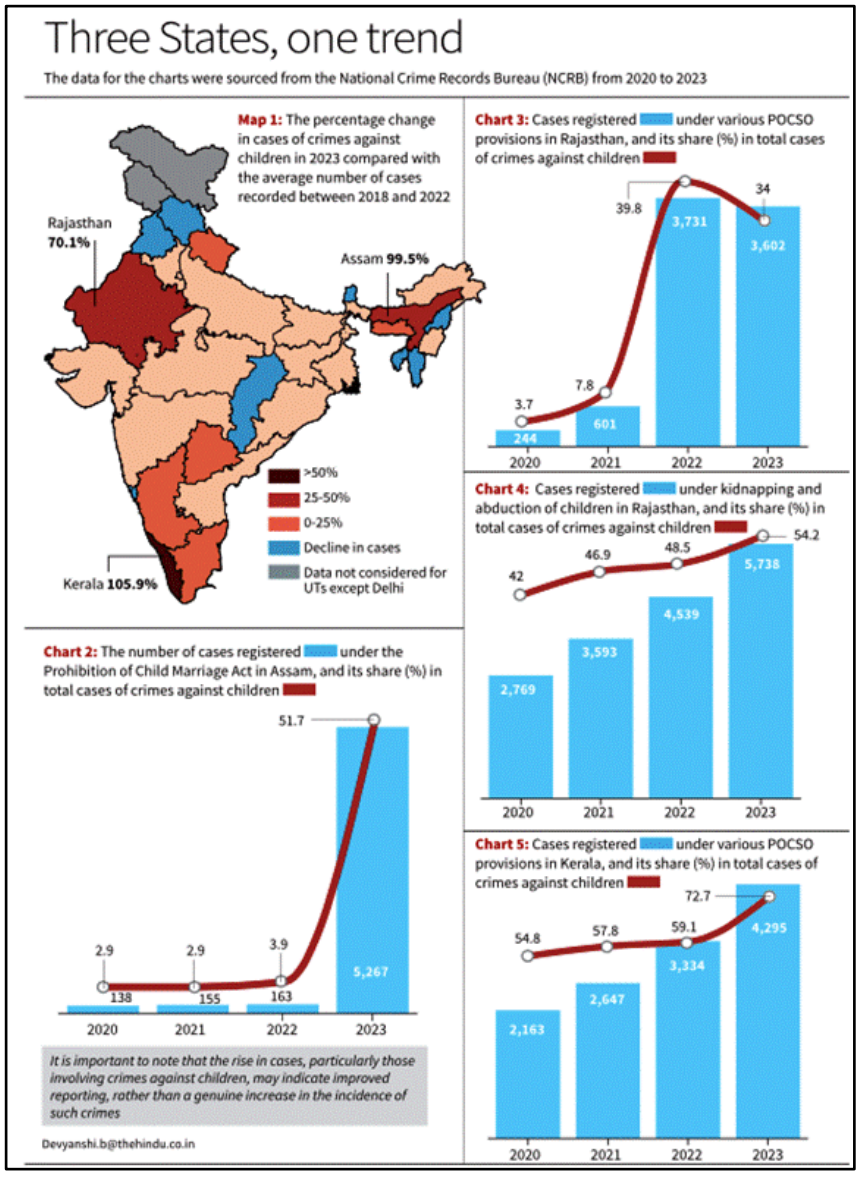
- **Key reasons:**
  - **Shift in classification** of child offences:
  - Cases previously filed under **IPC Sections** (rape) were reclassified under **POCSO (Protection of Children from Sexual Offences Act, 2012)**.
  - Cases under **Sections 4 and 6 of POCSO** increased from **3 cases** (2021-2022) to **3,500 cases** (2022-2023).
- **Rise in child kidnapping and abduction cases:**
  - **Share of kidnapping cases** increased to **54%** of total crimes against children in 2023.

3. Kerala

- **Increase in cases**: Cases of crimes against children in Kerala also saw a sharp rise.
- The increase is attributed to **more accurate classification** of offences under **specific POCSO sections**.
- **Rise in reported cases**, linked to better data collection and categorization.

National Context

- **Overall increase**: Nationally, recorded cases of crimes against children rose by **25%**.
- **Reporting vs. incidence**:
  - The rise in cases may reflect improved **reporting** and **accurate categorization**, rather than a genuine increase in crimes.
  - This highlights the importance of **better data recording** in understanding crime trends.



Conclusion

- **Reasons for the surge:**
  - **Better reporting** and **improved classification** of child abuse cases.
  - **State-led interventions** (e.g., Assam's crackdown on child marriage) have significantly influenced case numbers.
- It's crucial to distinguish between **genuine crime increases** and **better reporting** to address child protection effectively.

2. Law to Protect Domestic Workers

Why in the news?

In January 2025, the **Supreme Court directed the Union Government** to enact a **comprehensive law** to protect domestic workers' rights and constituted a committee to draft a framework—highlighting the urgent need for structured protection.

Current Status of Domestic Workers in India

- India has an estimated **4–90 million domestic workers**, predominantly **women and girls** from **Scheduled Caste and Scheduled Tribe communities**.
- They often face **harassment, abuse, non-payment, child labour, and trafficking**, with limited access to grievance redressal mechanisms.
- Many are **migrant workers**, lacking interstate protection or formal contracts.
- Absence of a **national legislation** leads to **fragmented regulation and exploitation**.
  - *Example:* The case leading to the Supreme Court directive involved **trafficking of a tribal woman domestic worker** from Chhattisgarh to Delhi, exposing systemic failures.
- National labour laws in India do not uniformly cover domestic workers

Legal and Institutional Gaps

- India **voted in favour but has not ratified** the **ILO Convention 189 (2011)** on decent work for domestic workers.
- The **committee constituted by the Supreme Court** lacks representation from domestic workers themselves.

- **Key Features of Convention 189:** Adopted on 16 June 2011 at the International Labour Organization (ILO) 100th Session; entered into force on 5 September 2013

Key obligations include:

- Respect, promote and realise fundamental rights at work (freedom of association, elimination of forced/child labour, non-discrimination).
- Protection against all forms of abuse, harassment and violence for domestic workers.
- Written or verifiable contracts specifying terms of employment (name of employer, work hours, remuneration, leave, accommodation if applicable).
- Equal treatment (as much as national law allows) with other workers regarding normal hours, overtime, weekly rest (at least 24 successive hours), paid annual leave.
- Minimum wage coverage and non-discrimination in remuneration.
- Health, safety and decent living conditions for those residing in the household.
- Regulation of private employment agencies recruiting or placing domestic workers; access to dispute resolution mechanisms; labour inspections tailored to domestic work context.

State-Level Progress

- **Tamil Nadu:**
  - Has a **Welfare Board** under the *Manual Workers Act, 1982*.
  - Offers benefits like pension, maternity aid, accident relief.
  - Only a small fraction of the ~2 million workers are registered.
  - Minimum wage fixed at ₹37–₹39/hour, but rarely implemented.
- **Karnataka:**
  - Proposed **Domestic Workers (Social Security and Welfare) Bill, 2025.**
  - Mandates written contracts, registration of workers, and welfare contributions (5% of wages by employers).
  - Ensures minimum wages, overtime pay, and weekly holidays.

Way Forward

- Recognise **domestic work as legitimate labour** under labour codes.
- Ensure **gender-sensitive, inclusive policy formulation** with representation from domestic workers.
- Integrate **technology-based worker registration** and grievance portals.
- Encourage **public awareness campaigns** on fair wages and dignity of labour.

3. Health Rights of India's Children

Why in the news?

- The recent deaths of 25 children due to contaminated cough syrup in Madhya Pradesh have exposed grave deficiencies in India's **drug regulatory and child health governance systems**.

Constitutional and Legal Context

- **Article 39(f):** Directive Principle ensuring children's protection and development.
- **Article 47:** Duty of the State to improve public health.
- India has over **13 national child-specific policies** (e.g., *National Policy for Children, 1974*; *India Newborn Action Plan, 2014*) and **10 legislations** indirectly linked to child safety.
- However, none address **pharmacovigilance or drug safety for children** specifically.

The Core Issue — "Therapeutic Orphans"

- Coined by Dr. Harry Shirkey, the term highlights that children are "**therapeutic orphans**," as most drugs are tested only on adults.
- **Paediatric pharmacodynamics** differ greatly from adults due to variations in metabolism, organ maturity, and body composition.
- **Extrapolating adult dosages** to children leads to overdosing, toxicity, and unpredictable side effects.
- India lacks structured **paediatric clinical trial guidelines**, leaving children vulnerable to unsafe formulations.

International Best Practices

- **European Union:** *Paediatric Use Marketing Authorisation (PUMA)* — incentivises safe paediatric formulations.
- **United States:** *Best Pharmaceuticals for Children Act (BPCA)* — mandates paediatric research and provides funding for drug safety studies.
- These frameworks combine **mandatory testing** with **financial incentives** for compliance, ensuring robust child drug safety.

The Essential Medicines Approach

- **WHO's Essential Medicines List for Children (EMLc):** Ensures affordability and availability of safe paediatric formulations.
- India updates its **Essential Medicines List (EML)** regularly for adults but not for children.
- Absence of periodic EMLc revision leads to outdated formulations and accessibility gaps in child-specific medicines.

Ethical and Socioeconomic Dimensions

- Unsafe medicines for children violate the **right to life and health (Article 21)**.
- Health-care expenses from adverse drug effects push vulnerable families deeper into poverty.
- Affordable and safe paediatric drugs are therefore a **social justice imperative** as well as a public health priority.

Way Forward

- **Regulatory Reforms**
  - Establish an **Indian Paediatric Drug Safety Authority** under the CDSCO.
  - Make **child-specific pharmacovigilance** compulsory for manufacturers.
  - Mandate **IMEI-style tracking for drug batches** to trace contamination origins.
- **Health System Strengthening**
  - Integrate **pharmacist and caregiver training** on paediatric drug handling.
  - Regulate **over-the-counter (OTC)** sales of cough and cold medicines for children.
  - Enforce **zero tolerance** for substitute or substandard drugs in public facilities.
- **Research and Data Generation**
  - Create an **India-specific Paediatric Drug Research Database**, reflecting local genetic and nutritional variations.
  - Fund **public sector paediatric trials** ethically under ICMR supervision.

India – The "Pharmacy of the Global South"

Global Production Role

- India is the **world's third-largest producer by volume** and **14th by value** in pharmaceuticals.
- It supplies over **60% of global vaccine demand** and **20% of generic medicines** worldwide.
- Exports reach more than **200 countries**, including Africa, Latin America, and Southeast Asia.

Affordable Generic Medicines

- Indian firms like **Cipla, Sun Pharma, and Dr. Reddy's** produce low-cost generics of life-saving drugs for HIV, malaria, and tuberculosis.
- India's **strong generic manufacturing capacity** allows nations in Africa and Asia to access essential drugs at a fraction of Western prices.

Policy and Institutional Support

- **Patents Act, 1970 (Section 3(d))** enables production of affordable generics while protecting public health.
- **Pharma Vision 2020** and **Make in India** initiatives promote drug R&D and self-reliance.
- **WHO-prequalified plants** in India supply medicines to UN and global health agencies.

Challenges

- Quality control lapses and export-linked controversies (e.g., contaminated cough syrups in Gambia, Uzbekistan, and Cameroon) threaten credibility.
- Strengthening **drug regulation, pharmacovigilance, and global compliance** is essential to maintain trust.

Conclusion

India, the **"pharmacy of the Global South,"** bears both a **moral and global responsibility** to ensure paediatric drug safety.

4. SC Forms Panel to Draft Equal Opportunity Policy for Transgender Persons

Why in the news?

- The Supreme Court of India, in a progressive move, constituted a **committee under Justice Asha Menon** to frame an **Equal Opportunity Policy** for transgender and gender-diverse individuals.

Supreme Court's Recent Observations

- **SC highlighted systemic barriers** in employment, healthcare, education, and public institutions, including the lack of a 'third gender' option and the expectation for transgender individuals to conceal their identity, **violating their dignity under Article 21.**
- **Exercising powers under Article 142**, the Court mandated the designation of appellate authorities under Rule 9, creation of welfare boards in all states and UTs, and establishment of Transgender Protection Cells under district magistrates and DGPs.
- It also called for a **nationwide toll-free helpline** and recommended safeguards such as ensuring no transwoman is arrested without a female officer present.
- It also urged all **public and private institutions** to foster **gender-inclusive environments** and suggested gender-diverse screening points at public venues to ensure dignity and safety for transgender individuals.

Challenges faced by Transgenders

- **Employment and Economic Exclusion:** High levels of **unemployment and underemployment** persist among transgender persons. Many are **denied jobs** due to bias or are forced into informal work like begging or sex work for survival.
- **Barriers in Education:** Studies by the **National Human Rights Commission (NHRC)** reveal that nearly **60% of transgender students drop out before completing school** due to stigma and abuse.
- **Healthcare Inequality:** There are only a handful of government hospitals in India offering **hormone therapy or gender-reassignment surgery**, and these are often unaffordable or discriminatory in practice.
- **Housing and Safety Issues:** Several reports by **India HIV/AIDS Alliance** show that transgender persons are often denied accommodation by landlords purely based on gender identity.
- **Identity Documentation Challenges:** Obtaining official documents like **Aadhaar, PAN, or educational certificates** reflecting one's gender identity remains difficult. Bureaucratic hurdles and prejudiced officials often delay or deny gender change applications.
- **Inadequate Policy Support and Representation:** While schemes such as SMILE (Support for Marginalized Individuals for Livelihood and Enterprise) and Garima Greh (shelter homes) exist, they reach only a fraction of the community due to poor coordination and limited funding.

Steps Taken To Improve the Lives of Transgender Persons

- **NALSA (2014):** Recognized transgender persons as a third gender and affirmed self-identification, forming the jurisprudential basis for reservations and affirmative measures.
- **National Portal for Transgender Persons:** Enables online applications for identity certificates and cards to reduce friction and physical interface in accessing rights.
- **SMILE scheme:** Government program aimed at comprehensive welfare and rehabilitation support for transgender persons, including livelihood and social security components.

II. Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources

1. Ten Years of Beti Bachao, Beti Padhao (BBBP)

Why in the news?

- The **Union government** has highlighted the achievements of the **Beti Bachao, Beti Padhao (BBBP)** scheme as it completes **a decade since its launch (2015–2025)**.

Launch and Objectives

- Introduced in **2015**, BBBP aimed to:
  - **Prevent female foeticide** and address the declining **Child Sex Ratio (CSR)**.
  - **Promote girls' education and empowerment** through convergence of multiple ministries — **Women and Child Development, Health, and Education**.
- Initially launched in **100 gender-critical districts**, the programme later expanded nationwide.
- **Policy Integration and Governance**
  - BBBP is a **multi-ministerial convergence model**, integrating awareness, health, and education at the grassroots.
  - Focus on **community engagement**, **district-level monitoring**, and **incentive-based performance**.

Improvement in Gender Indicators

- **Sex Ratio at Birth (SRB)** improved from **919 (2015–16)** to **929 (2019–21)**.
- **20 out of 30 States/UTs** now record SRBs higher than the national average of 930.
- The **awareness level** has significantly improved: in **Madhya Pradesh**, **89.5%** of citizens are aware of BBBP, and **63.2%** report that it encouraged them to educate daughters.

Education and Health Linkages

- Rising female literacy is linked to better **health outcomes**:
  - **Infant Mortality Rate (IMR)** fell from **49 (2014)** to **33 (2020)** among girls.
  - Women with **secondary education** are more likely to avail **institutional deliveries and prenatal care**.
- **Female literacy** has become a key driver of India's **declining Total Fertility Rate (TFR)** — now **2.0**, below replacement level.

Expanding Opportunities

- Educated women are increasingly participating in **STEM**, **healthcare**, **education**, and **entrepreneurship**.
- **Rural and semi-urban representation** among successful candidates in government exams has increased, reflecting enhanced educational access.

The Multiplier Effect of Educating Girls

- Educated girls become educated mothers — improving **nutrition, school attendance, and learning outcomes** for the next generation.
- They are more likely to **delay marriage**, **reduce family size**, and **participate in the workforce**.
- Every additional year of schooling for girls can **increase future earnings by 10–20%** (World Bank, 2023).
- Communities with higher female literacy witness better **public health indicators** and **lower poverty levels**.
- In regions once resistant to girls' education, community-led campaigns now promote **delayed marriage and higher education** for daughters.

- This reflects the success of **behavioural change communication** under BBBP — shifting deep-rooted patriarchal attitudes.

Challenges and Way Forward

- While enrolment rates are rising, **learning outcomes** for girls remain uneven across States.
- Greater focus on **STEM education**, **digital literacy**, and **vocational training** is essential.
- Northern and central States lag in gender parity at higher education levels.
- Need for **context-specific interventions** in districts with persistent dropouts.
- India's **female labour force participation rate (LFPR)** remains low at around **37% (PLFS 2023)**.
- Educated women must be provided with **safe, flexible, and skill-based employment opportunities**.
- Continuous community engagement through **local leaders, SHGs, and digital campaigns** will sustain the gains in attitude transformation.

Conclusion

The success of *Beti Bachao, Beti Padhao* demonstrates that **education is not merely a welfare measure but a nation-building strategy**. It has initiated a profound shift — from saving daughters to **empowering them as leaders of India's social and economic transformation.**

2. Reforming Passive Euthanasia in India

Why in the news?

- In June, the U.K.'s **House of Commons** passed the **Terminally Ill Adults (End of Life) Bill**, allowing **physician-assisted dying** for mentally competent adults with terminal illnesses. This has rekindled the global debate on **euthanasia**. While India has legalized **passive euthanasia** through Supreme Court rulings, it continues to reject **active euthanasia**.

Passive Euthanasia in India: Current Issues

- **Delays in implementation:** Advance directives, dual medical board clearance, and judicial oversight cause significant delays.
- **Informal decisions:** Families often make decisions informally, putting doctors in a difficult position.

Challenges with Active Euthanasia in India

- **Healthcare System**: India's healthcare system is **fragmented** and **under-resourced**, making the introduction of active euthanasia difficult.
- **Cultural and Societal Factors**: Deep family involvement, religious sensitivities, and varying literacy levels make **end-of-life decisions** complex.
- **Vulnerable populations** like the **elderly**, **disabled**, and **financially dependent** may face **coercion** to opt for euthanasia.
- **Palliative Care**: Palliative care is **underdeveloped** in India, and **medical care is expensive**, exacerbating ethical concerns.
- **Legal Concerns**: The **Supreme Court** maintains a distinction between **passive euthanasia** (allowing death) and **active euthanasia** (causing death).
- **Article 21** of the Constitution guarantees **right to life** with dignity, but this does not imply a **right to be killed**.

Way Forward

- **Digital Integration**: **Advance directives** should be **digitally registered**.
- **Cooling-off period**: A mandatory **seven-day** period to ensure informed decision-making.

- **Psychological counselling**: Ensure that patients and families are fully informed and mentally prepared.
- **Palliative care review**: A review from palliative care specialists to ensure the ethical basis of the decision.
- **Public Awareness**: Launch campaigns to raise awareness about **advance care planning** and build **trust** in the euthanasia process.
- **Medical Education**: Integrate **end-of-life care** and **ethical decision-making** in **medical curricula**.

Conclusion

- India must focus on **refining passive euthanasia** rather than adopting **active euthanasia**.
- **Digital tools**, **streamlined procedures**, and **strong oversight** can ensure **dignity in death** while adhering to Indian values.
- Reforms will create a more **humane, accessible**, and **effective end-of-life care system**.

3. Children Mental Health Issue in India

Why in the news?

- As of recent estimates by the World Health Organization (WHO), India has a mental health burden of 2,443 disability-adjusted life years (DALYs) per 10,000 people.

Factors Contributing to Mental Health Issues

- **Urbanization and Lifestyle Changes:** The high stress of urban life, coupled with lifestyle changes and social isolation, adversely affects children's mental well-being.
- **Academic Pressure and Social Isolation**: Academic pressure, high parental expectations, and peer competition often lead to emotional exhaustion.
- **Socioeconomic Pressures**: The increasing cost of living, education, and healthcare places significant stress on families. This, in turn, affects children, who often internalize this stress, leading to mental health issues like anxiety and depression.
- **Media Influence and Global Uncertainty**: Constant exposure to distressing news reports about natural disasters, violence, and political unrest creates a sense of insecurity and fear in children, contributing to psychological distress.
- **Parental Expectations and Gender Norms**: The societal expectation for children to excel, especially academically, contributes to emotional distress. Gender norms, particularly for boys, who are expected to repress emotions, also lead to long-term psychological issues.

The Need for Comprehensive Support Systems

- **Early Recognition and Intervention:** Parents, teachers, and caregivers need to be trained to recognize early signs of distress. Early intervention, such as counselling and therapy, can significantly improve outcomes.
- **Creating Safe Spaces for Expression**: Programs to reduce stigma and encourage open dialogue about mental health will allow children to seek help when needed.
- **Government Policies and Mental Health Infrastructure**: The government must invest in mental health infrastructure and make services accessible, particularly in rural areas.
- **Community Support Networks**: Community support is vital. Peer support groups, local counsellors, and community leaders can play a significant role in helping children cope with mental health challenges.
- **Reforming the Education System**: The education system needs to evolve to focus on children's emotional and psychological needs, rather than just academic performance. Schools should implement mental health programs to support students.

Conclusion

A comprehensive approach, involving families, communities, and the government, is essential to address this crisis and create a supportive environment for children to thrive emotionally and psychologically.

4. Health Hazards and Digital Tools

Why in the news?

- With **2.2 million tonnes of e-waste generated in 2025**, India ranks as the **third-largest global e-waste producer**, after China and the United States. The improper handling of e-waste, particularly through informal recycling practices, poses severe **health and environmental risks**, especially for marginalised urban communities.

Escalating E-Waste Burden

- India's e-waste has grown **150% since 2017–18**, with volumes expected to **double by 2030**.
- More than **60% of e-waste originates from 65 cities**, including **Seelampur and Mustafabad (Delhi), Moradabad (UP), and Bhiwandi (Maharashtra)**.
- Despite **322 registered formal recycling units** capable of processing **2.2 million tonnes annually**, **over half of e-waste remains informal or unprocessed**.
- Informal practices include **manual dismantling, open-air burning, acid leaching**, and **unscientific dumping**, releasing **heavy metals (lead, mercury, cadmium), persistent organic pollutants (dioxins, furans), and particulate matter (PM 2.5 and PM10)**.
    - *Example:* PM 2.5 levels in Seelampur often exceed **300 µg/m³**, over **12 times WHO safety limits**.

Health Implications

- **Respiratory illnesses:** Chronic bronchitis, asthma, and breathlessness are common among informal recyclers; studies show **76–80% prevalence in India**, compared to lower rates in non-exposed populations.
- **Neurological and developmental risks:** Exposure to lead, mercury, and cadmium impairs **cognitive function, reduces IQ, and delays neurobehavioral development** in children. WHO reports millions of children exposed to hazardous lead levels near e-waste zones.
- **Skin and ocular disorders:** Direct contact with chemicals during dismantling leads to **rashes, burns, dermatitis, eye irritation**, and systemic issues.
- **Genetic and systemic impacts:** DNA damage, abnormal epigenetic changes, and oxidative stress are documented in exposed populations.
- Vulnerable communities face a **syndemic environment**, where poverty, malnutrition, and poor healthcare amplify health risks.

5. Policy Progress and Gaps

- **E-Waste (Management) Rules, 2022**
    - Strengthened **Extended Producer Responsibility (EPR)** by holding producers accountable for collection, recycling, and environmentally sound disposal.
    - Introduced **mandatory registration** for dismantlers and recyclers.
    - Incentivised formalisation through **financial support, capacity building, and scientific recycling methods**.
    - Encouraged **safe disposal of obsolete electronics**, including imported e-waste.
- **Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs)** oversee compliance and grant permissions for formal units.
- **Digital e-waste tracking system** (proposed) aims to monitor generation, collection, and recycling through unique EPR codes.

- **Awareness campaigns and public-private partnerships** are encouraged to promote e-waste management at the community level.

Way Forward

- **Formalise the informal sector:** Skill certification, PPE provision, safe infrastructure, and social security for workers.
- **Strengthen enforcement:** Empower pollution control boards, implement digital tracking, and mandate environmental audits.
- **Expand health surveillance:** Conduct long-term studies, establish medical camps, especially for children.
- **Promote innovation:** Support R&D for affordable recycling technologies and decentralised treatment hubs.
- **Awareness and education:** Mass campaigns and school curricula on e-waste management to foster responsibility.

6. Why Emergency Care Needs to be Prioritised?

Why in the news?

- Emergency medical response is in news after the Karur stampede in Tamil Nadu, highlighting delayed ambulance access and stressing need to treat emergency care as a constitutional duty.

Evolution of Emergency Medical Care

- The concept of ambulances emerged from **battlefield medicine**, where soldiers were quickly evacuated for treatment.
- **World Wars**, **Korean**, and **Vietnam Wars** institutionalised trauma management, triage, and rapid evacuation.
- These military learnings shaped **modern emergency medicine systems** and led to structured ambulance services.
    - *Example:* "Golden Hour" protocols evolved during wars, later adopted globally in civilian healthcare.

The Golden Hour and the Platinum Ten Minutes

- The **Golden Hour** refers to the first 60 minutes after trauma when prompt intervention can prevent irreversible organ damage.
- With technological progress, this evolved into the **Platinum Ten Minutes** — emphasizing immediate on-site care.
- Modern ambulances are equipped for oxygen delivery, airway management, bleeding control, ECG monitoring, and even mobile CT scans.
    - *Example:* **Tamil Nadu's 108 Ambulance Service** achieves an average response time of **10 minutes 14 seconds**, nearing the "Platinum Ten Minutes" benchmark.

Constitutional and Legal Backing

- **Article 21:** Right to Life includes the Right to Emergency Medical Care (as per Parmanand Katara v. Union of India, 1989).
- **Directive Principles:** Article 47 obliges the State to improve public health.
- **Motor Vehicles (Amendment) Act, 2019:** Grants right of way to ambulances; penalises obstruction.

Best Practices / Case Studies

- **Tamil Nadu:** Model 108 system with live hospital coordination and GPS-based dispatch.
- **Kerala:** Integrated "Arogya Raksha" emergency network connecting police, fire, and hospitals.
- **Delhi:** Introduction of "Bike Ambulance" services for congested urban areas.
- **Air Ambulance Policy:** Maharashtra and Karnataka exploring air and drone ambulances for organ transport.

Operational and Technological Challenges

- **Design Issues:** Ambulances require oxygen-safe designs and periodic maintenance.
- **Manpower Shortages:** Limited skilled technicians and drivers, especially in rural areas.
- **Coordination Gaps:** Poor real-time hospital communication and GPS tracking hinder efficiency.
- **Private Ambulance Disparities:** Many private ambulances lack trained staff or essential equipment.
    - *Example:* Though India has over **10,000 ambulances under the 108 system**, service quality varies widely across States.

Way Forward

- Establish a **central regulatory authority** for emergency services.
- Introduce **uniform certification and training** for paramedics and drivers.
- Regulate **air and drone ambulances** for organ transport and remote access.
- Ensure **uniform pay structures and incentives** to reduce attrition.
- Establish **State Emergency Services Regulatory Authorities (ESRA)**.
- Integrate services under the **Disaster Management Act, 2005**.
- Create **Standard Operating Procedures (SOPs)** for all States.
- Promote **CPR and First Aid literacy** among citizens.

7. Does India's 1.9 Fertility Rate Reflect Reality?

Why in the news?

- Recent data from the United Nations Population Fund (UNFPA) 2025 "State of World Population 2025" indicates India's Total Fertility Rate (TFR) has declined to **1.9 births per woman**, which is below the "replacement level" of approximately 2.1

Understanding TFR

- **Definition:** TFR measures the average number of children a woman is expected to bear during her reproductive years (15–49 years), assuming current age-specific fertility rates persist.
- **Calculation:** Derived from *Age-Specific Fertility Rates (ASFRs)* across seven five-year age cohorts (15–19 to 45–49).
- **Assumption:** The measure is based on the **synthetic cohort method**, assuming present age-group fertility rates will continue unchanged over time.

Issues with the 1.9 figure—Why it may not fully reflect "reality"

- **Tempo effect**: Postponement of births (for marriage, education, work) lowers the measured TFR though actual number of children may not decline as much (quantum).
- **Synthetic cohort assumption**: The assumption that younger age groups will replicate older cohorts' behaviour may not hold in dynamic societies like India. Hence, downward shifts may partly reflect delay rather than fewer births.
- **Under-coverage of early/late births**: TFR assumes negligible births below 15 or above 49, but in developing countries with early marriages, this assumption may introduce bias.
- **Under-coverage of early/late births**: TFR assumes negligible births below 15 or above 49, but in developing countries with early marriages, this assumption may introduce bias.
- **Regional heterogeneity**: While the national "1.9" figure is cited, states show big variation—some greater than replacement, some well below. Thus a national average may mask underlying disparities.

Socio-Economic and Behavioural Transitions

- **Urbanisation and female literacy** have shifted childbirth to later ages, reducing fertility temporarily.
- **Rising aspirations and economic mobility** among younger cohorts have led to family planning and smaller family preferences.
- **Migrant and working women** increasingly choose delayed marriage and childbirth, affecting short-term fertility trends.

Implications for India

- **Demographic Dividend:** India's working-age population remains high, but fertility decline may shorten this window.
- **Ageing Population:** Sustained sub-replacement fertility could accelerate ageing, increasing dependency ratios.
- **Economic Transition:** Low fertility does not necessarily hinder growth — developed economies like Japan and South Korea face similar challenges but with robust social security systems.
- **Policy Caution:** Premature fertility-raising measures could backfire; instead, focus should remain on employment, health, and education.

III. Issues relating to Poverty and Hunger.

1. NCRB's 2023 Farmer Suicide Data

Why in the news?

- According to the **National Crime Records Bureau (NCRB) Report, 2023**, a total of **10,786 farmers and agricultural workers died by suicide** in India — a tragic reminder that deep structural fault lines continue to undermine the livelihoods of millions dependent on farming.

Key Data

Category	Number of Suicides	% of Total Suicides (1,71,418)	Gender Distribution
Farmers/Cultivators	4,690	2.7%	4,553 Male; 137 Female
Agricultural Labourers	6,096	3.6%	5,433 Male; 663 Female
Total (Farming Sector)	10,786	**6.3% of all suicides**	9,986 Male; 800 Female

Geographical Pattern of Distress

- **Maharashtra: The Epicentre of Crisis**
  - The **Vidarbha and Marathwada** regions continue to report the highest concentration of suicides, primarily among **cotton and soybean growers**.
  - These are drought-prone areas with **poor irrigation coverage**, **high input costs**, and **price volatility**.
- **Southern States (Karnataka, Andhra Pradesh, Tamil Nadu)**: Suffer from **monsoon irregularities, groundwater depletion**, and **crop price fluctuations**.
  - Karnataka alone accounted for nearly **one-fourth of national farm suicides**, driven by recurring debt cycles.
- **Central India (Madhya Pradesh) :** Despite being a major soybean and pulse producer, faces **credit distress** and **climate variability**, affecting small and marginal farmers.

Underlying Causes of Agrarian Suicides

- Price collapses of key crops such as cotton, soybean, and pulses continue to trap farmers in debt.
- The **withdrawal of the 11% import duty on cotton** is expected to further depress domestic prices, especially hurting **smallholders in cotton belts**.

- Rising costs of **seeds, fertilisers, pesticides, and fuel** without proportionate income growth have widened the debt burden.
- **Institutional credit** remains skewed towards large farmers; small cultivators rely on **moneylenders** at exorbitant rates.
- Farmer organisations argue that **free trade agreements (FTAs)** and **liberal import policies** expose domestic producers to global price shocks, particularly when subsidies and support systems are weaker than those in developed economies.
- Recurrent droughts, erratic rainfall, and pest attacks (e.g., pink bollworm in cotton) reduce yields and increase financial stress.
- **Crop insurance** penetration under PMFBY remains uneven and often delayed.
- Economic distress is compounded by **social isolation**, **gender bias**, and **inadequate mental-health support** in rural India.
- Women farmers, though fewer in number, face **double vulnerability** — lack of land ownership and invisibility in policy frameworks.

Structural and Institutional Gaps

- **Fragmented Landholdings:** Over **85% of farmers** are small and marginal, limiting economies of scale.
- **Low Irrigation Coverage:** Only **50% of gross cropped area** is irrigated, leaving farmers vulnerable to monsoon dependence.
- **Credit and Insurance Access:** Institutional finance and insurance claims remain bureaucratically delayed and exclusionary.
- **Data Transparency:** The NCRB's own methodology faces criticism for **under-reporting** and inconsistent classification of suicides as "farm-related."

Way Forward

- Expand **price support mechanisms** under MSP to more crops and ensure **timely procurement** in non-wheat/rice regions.
- Introduce **income stabilisation funds** and promote **contract farming safeguards**.
- Target **small and tenant farmers** through **Kisan Credit Cards (KCCs)** and **cooperative credit reforms**.
- Mandate **interest-free emergency credit** in distress regions.
- Promote **crop diversification** into horticulture, pulses, and millets; integrate **climate-smart agriculture** and **micro-irrigation schemes**.
- Introduce **safeguard duties** and **minimum import prices** for sensitive commodities like cotton and soybean.
- Enhance **input subsidies** for fertilisers, seeds, and diesel in drought-prone regions.
- Scale up **rural counselling networks** under **Tele-MANAS (14416)** and **National Mental Health Programme**.
- Link **social security and pension schemes** directly to vulnerable farming households.

D. INTERNATIONAL RELATIONS

I. India & World

1. Adapting India's Foreign Policy to New Global Realities

Why in the news?

- The global order is undergoing rapid transformation — marked by the rise of **multipolarity**, the **erosion of U.S. dominance**, **China's assertiveness**, and a **retreat from multilateralism**. Amid these shifts, India's traditional post-colonial foreign policy—rooted in non-alignment and moral diplomacy—appears inadequate.

Changing Global Context

- **Erosion of Multilateralism:** The decline of institutions such as the UN, WTO, and WHO and the rise of transactional diplomacy under leaders like Donald Trump weakened cooperative global mechanisms.
- **Rise of China:** China's expanding economic, technological, and maritime footprint challenges India's regional primacy, especially in South and Southeast Asia.
- **Fragmented World Order:** The emergence of issue-based alliances (e.g., QUAD, I2U2, BRICS+) signals the end of rigid bloc politics.
- **Technological Geopolitics:** Control over AI, semiconductors, and rare earths defines new power hierarchies, requiring India to balance national security with economic engagement.

Key Issues in India's Foreign Policy Approach

- **Over-reliance on legacy frameworks** such as Non-Alignment and Strategic Autonomy, without re-defining them for the 21st century.
- **Inadequate regional diplomacy**—India's "Neighbourhood First" often remains rhetorical.
- **Reactive rather than proactive diplomacy**, seen in late engagement with crises (e.g., West Asia, Nepal).
- **Limited institutional agility**—decision-making remains highly centralised, with little inter-ministerial coordination.
- **Weak soft-power leverage**, despite cultural and civilisational advantages.

Strategic Imperatives for Adaptation

- Rebuild **South Asian trust** through connectivity, trade, and people-centric diplomacy.
- Revitalise **SAARC** or promote a functional sub-regional alternative like **BIMSTEC**.
- Deepen **strategic convergence with the U.S.** while preserving autonomy within QUAD.
- Maintain **measured engagement with China**, combining deterrence with diplomacy.
- Strengthen ties with **Russia, France, and ASEAN** to diversify partnerships.
- Move from energy-centric to **strategic-economic engagement**.
- Engage proactively with actors such as **Saudi Arabia, UAE, Egypt, and Turkye**, even when relations are complex.
- Establish a **National Security and Foreign Policy Council** integrating economic, security, and technology assessments.
- Train a new generation of diplomats versed in digital diplomacy, climate negotiations, and regional languages.
- Encourage **think-tank collaboration and academic diplomacy** to generate policy innovation.

Emerging Opportunities

- India's **G-20 Presidency** and leadership in **Global South forums** have boosted its visibility.
- Initiatives like **International Solar Alliance** and **Maritime Security Cooperation** project India as a constructive global actor.
- The evolving **Indo-Pacific framework** gives India room to assert its strategic centrality.

Conclusion

India stands at the crossroads of opportunity and uncertainty. To remain relevant in the evolving world order, it must **shed outdated diplomatic habits**, build **issue-based coalitions**, and exercise **strategic pragmatism** rather than moral idealism.

2. Reversing Brain Drain in STEM

Why in the news?

- The recent policy initiative by the Government of India to attract top-tier Indian-origin scholars back to the country is a significant attempt to reverse this **"brain drain"** and transform it into **"brain gain."**

Brain Drain in India

- **Brain Drain** refers to the emigration of highly skilled and educated individuals from one country to another, usually in search of better opportunities.
- **In India** engineers, doctors, scientists, IT professionals, and academics move to developed countries like the USA, UK, Canada, and Australia.
- **Between 2015 and 2022,** 1.3 million Indians left the country, many of whom were highly educated professionals.
  - In 2022 alone, 225,000 Indians renounced their citizenship, the highest number recorded.
- **Top Destinations:** The United States, Canada, and Europe remain top destinations for these skilled workers.

Reasons for Brain Drain from India

- **Economic Factors:** Lower salaries compared to developed countries.
- **Educational and Professional Opportunities:** Limited access to world-class research infrastructure.
- **Lifestyle and Quality of Life:** Better healthcare, infrastructure, and living standards abroad.
- **Inadequate Research Funding and Infrastructure:** India's expenditure on Research and Development stands at just 0.64% of GDP as of 2020-21, significantly lower than the global average of 1.79%.

Concerns

- **Loss of Skilled Human Capital:** India invests heavily in education and training, especially in fields like IT, medicine, and engineering.
- **Slower Economic Development:** Skilled professionals are key to entrepreneurship, research, and technological advancement.
- **Impact on Health and Education Sectors:** India faces shortages of doctors, nurses, and educators due to migration to countries with better pay and working conditions.
- **Reduced Global Competitiveness:** A consistent outflow of talent can make India less competitive in knowledge-intensive sectors.

Government Initiatives

- **Prime Minister's Research Fellowship (PMRF):** Launched in 2018, PMRF aims to retain top research talent by offering monthly stipends of ₹70,000-80,000 and research grants up to ₹2 lakh per year.
- **Medical Education Expansion:** Medical colleges doubled to 808 in 2025-26 from 387 in 2013-14, with undergraduate seats up 141% and postgraduate seats up 144%
- **VAJRA (Visiting Advanced Joint Research) Scheme:** Invites overseas scientists and experts to collaborate with Indian institutions.

Learning from China's "Thousand Talents" Programme

- China's **Thousand Talents Programme (2008)** demonstrates how targeted repatriation policies can transform a nation's research ecosystem.
- The initiative revamped universities, improved research facilities, and provided autonomy, resulting in **five Chinese universities in QS World Rankings' Top 100**, compared to India's best ranking at **123 (IIT Delhi)**.

Policy Reforms for a Vibrant Knowledge Economy

- Enhancing **autonomy** and reducing bureaucratic interference in universities.
- Creating **peer-reviewed, transparent funding mechanisms**.
- Promoting **international research collaborations** and exchange programs.
- Integrating **humanities with science and technology** to build socially responsible innovation.
- Establishing **centres of excellence** with merit-based recruitment and research evaluation.

3. India-Mongolia Relations

Why in the news?

- India and Mongolia inked **10 Memoranda of Understanding (MoUs)** during a bilateral meeting between Prime Minister Narendra Modi and Mongolian President Khurelsukh Ukhnaa in New Delhi.

Key Agreements and Areas of Cooperation

- **Ten MoUs Signed:** The agreements cover **humanitarian aid**, **restoration of heritage sites in Mongolia**, **immigration cooperation**, **geology and mineral resources**, **promotion of cooperatives**, and **digital technology collaboration**.
- **Cultural and Heritage Collaboration:** India will sponsor annual visits of *young cultural ambassadors* from Mongolia and connect **Nalanda University** with the **Gandan Monastery**, reflecting shared Buddhist heritage.
- **Economic and Developmental Partnership:** India reaffirmed its role as a **developmental partner**, highlighting the **$1.7 billion oil refinery project** financed through an Indian line of credit. **Connectivity and Tourism:** Mongolia announced that its national air carrier would soon operate **charter flights to Amritsar and New Delhi**, facilitating trade, tourism, and people-to-people exchanges.

Strategic and Global Dimensions

- Both countries emphasised their shared commitment to a **free, open, inclusive, and rules-based Indo-Pacific**.
- India and Mongolia pledged to **amplify the voice of the Global South** in multilateral forums such as the UN and SCO.
- A **joint statement on strengthening the strategic partnership** outlined cooperation in **critical minerals, resilient supply chains, and sustainable development**.

Significance of the Visit

- The visit reinforced **India's Act East Policy** and **Vision for the Indo-Pacific**, extending New Delhi's strategic engagement in Central and East Asia.
- It underscored the **spiritual dimension** of bilateral ties, rooted in Buddhism and shared democratic values.
- The agreements signal an evolution from symbolic friendship to **comprehensive strategic cooperation**.

4. India and Brazil Relations

Why in the news?

- Recently, **India and Brazil** agreed to expand the scope of the existing **Preferential Trade Agreement (PTA) under MERCOSUR bloc**, aiming to include more sectors and products.

India and MERCOSUR Relations

- India signed a **Framework Agreement with MERCOSUR in 2003**, followed by a **Preferential Trade Agreement (PTA) in 2004**, which came into **effect in 2009.**

- The PTA covers 450 product lines, offering mutual tariff concessions on items like pharmaceuticals, chemicals, textiles, and leather goods.
- It marked **India's first formal trade pact with a Latin American bloc**, laying the groundwork for deeper economic integration.

- The **India-Mercosur PTA** currently provides **tariff concessions on around 450–452 tariff lines**, with reductions ranging from **10% to 100%**.

Strategic Significance

- **Economic Diversification:** MERCOSUR offers India access to a market of over 300 million people, helping reduce reliance on traditional Western partners.
- **South-South Cooperation:** The partnership aligns with India's foreign policy vision of equitable global development.
- **Supply Chain Resilience:** Strengthening ties with Latin America supports India's goal of building robust and diversified supply chains.

Goals of the Expanded Pact

- Increase product coverage beyond the current 450 items.
- Facilitate investment flows in critical sectors like renewable energy, pharmaceuticals, and digital infrastructure.
- Promote sustainable development through technology transfer and green innovation.
- Strengthen regional supply chains between South Asia and Latin America.

Way Forward

- **Limited Product Coverage and Trade Volume:** India's trade with Brazil, its largest MERCOSUR partner, remains **far below Brazil's trade with China, the US, and Argentina.**
- **Tariff and Non-Tariff Barriers:** Both sides face regulatory hurdles, including complex customs procedures and inconsistent standards.
- **Geopolitical and Strategic Misalignment:** India needs to navigate its strategic autonomy in a multipolar world, balancing ties with the US, China, and Russia.
- **External Pressures and Trade Wars:** Trade tensions with the U.S. have pushed India and Brazil to seek alternative markets, but this **reactive approach** may lack long-term strategy.

GENERAL STUDIES – 3

A. INDIAN ECONOMY

I. Indian economy issues relating to planning, mobilization of resources

1. RBI KEEPS REPO RATE STEADY

Why in News?

- In its October 2025 Monetary Policy Review, the **Reserve Bank of India (RBI)** decided to **keep the repo rate unchanged at 5.5%** with a *neutral stance*.

RBI's Policy Decision

- The **repo rate** remains steady at **5.5%**, signalling a balanced approach between growth and inflation management.
- A **neutral stance** means the RBI aims neither to tighten liquidity nor to aggressively stimulate the economy.

- With **inflation well below the 4% target**, the central bank still has room for future rate reductions if needed.
- Focus shifted from short-term rate changes to **structural measures** that enhance financial market depth and long-term stability.

Economic Growth Outlook

- **GDP Growth Projection:** Revised upward to **6.8% for FY 2025–26**, supported by strong domestic demand, better investment flows, and rural recovery.
- **Key Growth Drivers:**
  - Rising **consumption** in both urban and rural areas.
  - Higher **government spending** on infrastructure and welfare.
  - Reforms such as **GST 2.0** improving tax efficiency.
  - **Good monsoon** and stronger agricultural performance.

- **Global Agencies' Estimates:** IMF, Fitch, OECD, and others forecast India's growth between **6.3–6.9%**, showing international confidence in India's economic resilience.

Inflation – Within Comfort Zone

- **CPI Inflation** expected to average **2.6% in FY 2025–26**, the lowest in nearly a decade.

- **Reasons for Decline:**
  - Sharp fall in food prices over recent months.
  - **GST rationalisation** reducing consumer prices in key goods.
  - Moderate fuel prices and stable global commodity costs.
- Inflation now remains **comfortably below the 6% upper band**, allowing policy flexibility if growth slows later.

External Sector and Trade Trends

- **Current Account Deficit (CAD):** Narrowed to **0.2% of GDP**, helped by strong **services exports** and **record remittances**.
- **FDI Inflows:** Continued strength from the US, Singapore, and the UAE indicates global investor confidence.
- **Exports and Imports:** Moderate but positive growth reflecting stable external demand.

Reasons for Holding the Repo Rate

- **Wait-and-Watch Strategy:** The RBI prefers to assess the full impact of earlier rate cuts and fiscal measures before acting again.
- **External Uncertainty:** Trade tensions, tariffs, and geopolitical instability could affect exports and capital flows.
- **Domestic Strength:** Stable inflation, strong consumption, and ongoing reforms justify maintaining policy continuity.
- **Flexibility Maintained:** Keeping rates steady gives the RBI room for **future easing** if global risks intensify.

MONETARY POLICY

- **Neutral Stance** – The RBI maintains a balanced approach, keeping interest rates steady while watching both inflation and growth trends before deciding future moves.
- **Accommodative Stance** – The RBI focuses on boosting economic growth by lowering interest rates to encourage borrowing, investment, and spending.
- **Calibrated Tightening** – The RBI gradually increases interest rates to control rising inflation while avoiding sudden or excessive tightening of monetary policy.

MONETARY POLICY COMMITTEE (MPC)

- The **Monetary Policy Committee (MPC)** is a **six-member body** formed by the **RBI Act, 1934 (amended in 2016)**.
- It is responsible for **deciding the policy repo rate** to achieve the **inflation target** set by the Government of India.

Composition

- **RBI Governor** – Chairperson (ex-officio)
- **RBI Deputy Governor (Monetary Policy)** – Member
- **One RBI Officer** – nominated by the RBI Board
- **Three External Members** – appointed by the Government of India (for 4-year terms)

Conclusion

By holding the repo rate steady, the **RBI prioritises stability while nurturing growth through reforms** and financial sector strengthening. The approach reflects confidence in India's macroeconomic fundamentals and a readiness to respond flexibly to global and domestic challenges.

2. RBI'S MARKET LIQUIDITY REFORMS

Why in News?

- The Reserve Bank of India (RBI) recently announced a series of measures to improve market liquidity and expand retail investor access.

Need for Market Liquidity Support

- **Global uncertainties** — including trade tensions, US visa restrictions, and geopolitical conflicts — have impacted investor sentiment.
- Foreign portfolio investors have withdrawn billions from Indian equities, weakening liquidity and the rupee.
- The RBI's relaxations aim to stimulate domestic market activity and ensure steady access to credit for both retail and corporate sectors.

Key Measures Announced by the RBI

Greater Access to IPO Financing

- The limit for IPO financing to retail investors increased from ₹10 lakh to ₹25 lakh.
- This encourages wider public participation and ensures steady fund inflow into the primary market.
- The move supports the current wave of large IPOs and boosts market depth.

Loans Against Shares and Debt Securities

- **Loan limit** against shares raised to **₹1 crore from ₹20 lakh.**
- Ceiling on loans against listed debt securities has been removed.
- Banks can now lend against new collateral types like REITs and InvITs, improving funding flexibility.
- These steps aim to improve liquidity while giving investors easier access to capital without selling assets.

Lending to Large Borrowers

- **The RBI scrapped the 2016 restriction discouraging banks from lending** to corporates with large exposures (over ₹10,000 crore).
- This **aligns with the existing Large Exposure Framework** and allows banks to finance major projects more freely.

- The reform enhances corporate credit access while keeping systemic risks in check.

NBFC Funding for Infrastructure Projects

- Risk weights on loans to operational infrastructure projects have been reduced.
- This lowers capital requirements for NBFCs, making loans cheaper for sectors like power, roads, and transport.
- The measure supports India's infrastructure-led growth model and long-term economic expansion.

Easier Rules for External Commercial Borrowing (ECB) and IFSC Accounts

- Broadened eligibility for ECB lenders and borrowers with simplified norms.
- **Extended repatriation period** for IFSC foreign currency accounts from one to three months.
- These measures make cross-border funding smoother and help position GIFT City as a global financial hub.

Broader Implications

- **For Banks:** More lending avenues and diversification of credit portfolios.
- **For Investors:** Enhanced access to capital and increased participation in equity and debt markets.
- **For Economy:** Strengthened financial resilience and reduced reliance on foreign portfolio inflows.
- **For Infrastructure:** Easier long-term funding for projects critical to growth.

Conclusion

The RBI's liquidity reforms reflect a proactive approach to deepen India's financial markets and reduce external vulnerabilities. By improving access to credit and empowering domestic investors, these measures aim to build a more inclusive, stable, and resilient financial ecosystem.

3. WHY INDIAN CAPITAL MUST REINVEST AT HOME

Why in News?

- With global trade slowing and rising protectionism, experts urge Indian capital to prioritize domestic reinvestment.

Evolution of Indian Capital and Need for Change

Pre-Liberalisation: Protected Growth

- Before 1991, Indian industries grew under state protection, using tariffs and import barriers.
- Profits came from limited domestic competition rather than global competitiveness.

Post-Liberalisation: Global Expansion

- Economic reforms in the 1990s opened global opportunities.
- Many Indian companies invested abroad, creating global footprints in energy, steel, and telecom sectors.

Now: Need for Public-Interest Capitalism

- With world trade weakening and global demand slowing, Indian firms must shift focus inward.
- The goal is to balance private profit with **national development**, emphasizing **employment, equity, and innovation**.

Domestic Demand vs Global Dependence

- **Global shocks** like tariff wars and supply chain disruptions have hurt export-driven growth.
- Expanding **domestic consumption** through better wages and employment can reduce dependence on external markets.

- Sustainable growth requires **robust internal demand**, driven by a strong middle class and productive industries.

Reviving Private Investment

- Despite **record corporate profits**, private investment in India has remained sluggish.
- **Public capex** rose sharply from ₹3.4 lakh crore in FY20 to ₹10.2 lakh crore in FY25, led by infrastructure spending.
- Meanwhile, **outward FDI** has grown faster than domestic investment, showing an imbalance.
- A **strategic redirection** of capital towards local industries, MSMEs, and innovation is essential to create jobs and expand capacity.

Addressing Wage Imbalances

- The **Economic Survey 2024–25** revealed that profits are at a 15-year high while real wages stagnate.
- Falling real incomes weaken purchasing power and reduce domestic demand.
- Promoting **wage-linked growth** — where rising productivity benefits workers — can ensure equitable and sustained expansion.

Boosting Research and Innovation

- India's **R&D spending is just 0.64% of GDP**, far below major economies.
- The **private sector contributes only 36%** of total R&D, concentrated in a few industries.
- Indian firms must increase R&D funding to enhance **competitiveness, productivity, and technological independence**.

Way Forward

- **Policy–Industry Coordination:** Economic resilience requires cooperation between government and business.
- **Domestic Reinvestment:** Channel corporate profits into local industries, manufacturing, and startups.
- **Wage-Led Demand:** Strengthen labour income to boost consumption.
- **Innovation-Led Growth:** Make R&D a structural pillar of business strategy.
- **National Responsibility:** Treat inclusive growth as part of corporate social duty.

Conclusion

India's next growth phase depends on **reorienting private capital toward domestic development**. A collaborative model — where the **state builds the foundation** and **industry drives inclusive innovation** — can ensure long-term stability, competitiveness, and social progress in the post-globalisation era.

4. INDIA'S LONG HISTORY OF RESISTANCE TO ECONOMIC DOMINATION

Why in News?

- India–US trade talks have stalled due to U.S. tariffs on Indian goods and curbs on Russian oil imports. The standoff reflects India's push to protect its economic autonomy while balancing global ties.

Colonial Economic Exploitation

- **Transformation of Economy:** During British rule, India's self-reliant economy was dismantled. The country became a **supplier of raw materials** and a **market for British goods**.
- **Drain of Wealth:** Economists like **Dadabhai Naoroji** argued that India's wealth and labour financed Britain's prosperity, creating a long-term economic drain.

- **Phases of Exploitation:**
  - ***Mercantile Capitalism:*** Monopoly trade by the East India Company.
  - ***Industrial Capitalism:*** India turned into an exporter of cotton and importer of textiles.
  - ***Finance Capitalism:*** British capital dominated plantations, railways, and banking.
- **Impact:** Led to **de-industrialisation, agrarian decline, and famines**, leaving India impoverished.

Intellectual Response and Economic Nationalism

- **R. C. Dutt:** Exposed deliberate destruction of Indian industries in *The Economic History of India*.
- **M. G. Ranade:** Advocated for Indian-led industrialisation to break dependency.
- **R. Palme Dutt:** Described the evolution of imperial control through different capitalist stages. These thinkers laid the foundation for **India's economic self-reliance movement**.

Post-Independence Reconstruction

- **Inherited Challenges:** At independence (1947), India faced poverty, inequality, and lack of capital.
- **Planning Framework:** Adopted a **mixed economy model**—blending state planning with private initiative.
- **Key Plans:**
  - ***First Plan (1951–56):*** Focus on agriculture and irrigation.
  - ***Second Plan (1956–61):*** Mahalanobis Model prioritising heavy industries.
- **Institutional Set-up:** Establishment of the **Planning Commission (1950)** and **Finance Commission (Article 280)** created a centralised planning structure.

Transition to Liberal and Federal Governance

- **1991 Reforms:** The **economic crisis** led to liberalisation — ending the Licence Raj, reducing tariffs, and promoting global trade.
- **Shift to Federalism:**
  - Planning Commission abolished (2014) → NITI Aayog (2015) introduced cooperative federalism.
  - GST unified the tax system but raised concerns over **state autonomy**.

Contemporary India–US Trade Friction

- **Tariff Barriers:** The U.S. increased import duties, citing protectionist motives, violating WTO norms.
- **India's Stand:** India advocates **fair trade and reciprocity**, not dependence.
- **Philosophical Continuity:** External Affairs Minister **S. Jaishankar** reiterated that India will protect its **economic red lines** while engaging globally.

Legacy and Way Forward

- **Continuity of Self-Reliance:** From Naoroji's Drain Theory to NITI Aayog's cooperative model, India's policies reflect a **consistent defence of economic sovereignty**.
- **Policy Steps:**
  - Negotiate trade deals based on **mutual respect and reciprocity**.
  - Strengthen **domestic manufacturing and exports** through PLI and innovation.
  - Maintain **federal balance** in fiscal sharing.
  - Promote **technology and digital partnerships** to counter trade dependency.

Conclusion

India's resistance to economic domination has evolved from **colonial-era struggles** to **modern trade assertiveness**. Today's disputes with global powers reaffirm India's commitment to **self-reliance, fairness, and strategic autonomy** in a changing global economy.

5. RBI LAUNCHES UNIFIED MARKETS INTERFACE (UMI) FOR ASSET TOKENISATION

Why in News?

- The **Reserve Bank of India (RBI)** has launched the **Unified Markets Interface (UMI)** to enable **tokenisation and settlement of financial assets using wholesale CBDC**.

About the Unified Markets Interface (UMI)

- **Purpose:** Transform India's financial ecosystem by **tokenising assets** and using **wholesale Central Bank Digital Currency (CBDC)** for settlement.
- **Launch Platform:** Announced at the **Global Fintech Fest 2025** by the RBI Governor.
- **Scope:** Initially covers **financial assets** like government securities, corporate bonds, Treasury bills, and derivatives.
- **Objective:** Improve **market efficiency, reduce settlement risks, and support India's leadership in fintech innovation.**

About Asset Tokenisation

- **Definition:** Conversion of real-world assets (bonds, securities, commodities) into **digital tokens** on a blockchain.
- **Benefits:**
  - **Fractional Ownership:** Enables small investors to participate in high-value assets.
  - **Liquidity:** Tokens can be **traded instantly** across platforms.
  - **Transparency:** Immutable blockchain records all transactions.
  - **Faster Settlements:** Reduces intermediaries using **smart contracts**.
- **Global Context:** Countries like **Singapore, Switzerland, and the UK** are piloting tokenised securities. India becomes a **pioneer in wholesale CBDC-based tokenisation.**

Integration with Wholesale CBDC

- **Wholesale CBDC:** Digital form of central bank money for **institutional transactions**.
- **Advantage:** Offers **secure, real-time settlements** without intermediaries.
- **UMI Role:** Leverages wholesale CBDC to enable **tokenised trading**, enhancing **market integration** and **operational efficiency**.

Data Integration & Financial Inclusion

- RBI strengthens **Digital Public Infrastructure (DPI)** and **Account Aggregator (AA) system** for safe data sharing.
- **AA Ecosystem (2025):** 17 aggregators, 650 financial users, 150 providers, 160+ million accounts, 3.66 billion data requests.
- Goals include **data security, improved consent management, customer onboarding, and interoperability**.

Other Fintech Innovations

- **UPI HELP:** AI tool for transaction assistance in multiple languages.
- **IoT Payments via UPI:** Machine-to-machine automatic payments.
- **Banking Connect:** Interoperable net banking platform.
- **UPI Reserve Pay:** Reserve part of credit limit for recurring payments.

Significance of UMI

- **Modernisation:** Moves India towards **fully digital markets**.
- **Transparency:** Every transaction is **verifiable and tamper-proof**.

- **Global Integration:** Supports **cross-border trading**.
- **Efficiency:** Reduces transaction costs and settlement time.
- **Inclusivity:** Small investors can access high-value financial assets through **fractional tokenisation**.

Conclusion:S

The Unified Markets Interface (UMI) modernises India's financial ecosystem by integrating **tokenisation and wholesale CBDC**, enhancing efficiency, transparency, and inclusivity. It positions India as a **global leader in digital financial infrastructure** while enabling broader market participation.

6. RBI GOVERNOR ADVOCATES CBDCs OVER STABLECOINS FOR SAFER GLOBAL PAYMENTS

Why in News?

- Recently, the **RBI Governor** urged global central banks to promote **Central Bank Digital Currencies (CBDCs)** instead of **stablecoins** for international payments.

Background

- The remarks were made during the **IMF–World Bank Annual Meeting** in Washington, D.C.
- The RBI reiterated its **cautious approach towards cryptocurrencies** due to their potential risks to financial stability and policy control.

About Stablecoins

- Stablecoins are private digital currencies designed to maintain a fixed value by linking to a stable asset like the **US dollar or gold**.
- **Purpose:** Reduce volatility seen in cryptocurrencies such as Bitcoin and Ethereum.
- **Key Features:** Backed by fiat currency, crypto assets, or controlled by algorithms. Enable faster cross-border transfers than traditional banking channels.

Types of Stablecoins

- **Fiat-backed** – Pegged to currencies (e.g., USDT, USDC).
- **Crypto-backed** – Backed by other cryptocurrencies (e.g., DAI).
- **Algorithmic** – Value maintained through supply–demand algorithms (e.g., TerraUSD, now defunct).

Concerns

- Lack of **regulatory oversight** and **transparency** in reserve holdings.
- Risk of **financial instability** and **"dollarisation"** in developing economies.
- Can be misused for **illicit transactions** and **money laundering**.

CENTRAL BANK DIGITAL CURRENCY (CBDC)

- A **CBDC** is a **digital form of a nation's official currency**, issued and regulated by its **central bank**.
- In India, the **Digital Rupee (e₹)** serves as a CBDC, backed by the **RBI and Government of India**.

Types of CBDCs in India

- **Retail CBDC (e₹-R):** (launched in 2022) Used by individuals and businesses as digital alternative to cash.
- **Wholesale CBDC (e₹-W):** Used for interbank settlements and securities trading. Improves efficiency and transparency in large-value payments.

Objectives of CBDC

- Reduce reliance on physical cash.
- Improve transaction speed and reduce costs.
- Strengthen monetary control and prevent financial fraud.
- Offer a **secure, sovereign** alternative to private stablecoins.

RBI's Position and Global Context

- The RBI supports **CBDCs** as they ensure **monetary integrity** and **policy control**, unlike stablecoins that depend on private issuers.
- The Governor called for **international coordination** among central banks for smoother cross-border CBDC transactions.
- Globally, however, stablecoins are gaining traction:
  - The **US, South Korea, and Hong Kong** have begun introducing regulatory frameworks.
  - The **US Senate** passed the **GENIUS Act (2025)** to govern stablecoin operations.

RBI's Key Concerns

- Growing dominance of **US dollar-backed stablecoins** may lead to **rupee displacement** in domestic markets.
- This could cause **"dollarisation"**, weakening India's **monetary sovereignty** and control over money supply.

Way Forward

- Strengthen **CBDC pilots** and promote interoperability with foreign systems.
- Develop **global standards** for digital currencies to ensure transparency and regulation.
- Encourage collaboration under **G20 and IMF frameworks** to balance innovation with financial security.

Conclusion

The RBI's stance reflects India's focus on **financial sovereignty, security, and policy control**. While stablecoins promise innovation, **CBDCs offer a safer and state-backed pathway** toward the future of global digital payments.

II. Growth and Development, Employment

1. ANALYSING INDIAN STATES' MACRO-FISCAL HEALTH

Why in News?

- The **Comptroller and Auditor General (CAG)** has released a decade-long review of India's State finances. It reveals that **most States are now facing rising debt and fiscal stress**.

State Finances Under Stress

- India's States are **key providers of welfare, healthcare, and infrastructure**, bearing major fiscal responsibilities.
- **Early 2000s** reforms and strong economic growth allowed many States to maintain **healthy budgets and surpluses**.
- The **COVID-19 pandemic** caused a sharp drop in revenues and a surge in emergency spending, leaving States **heavily indebted and fiscally constrained**.

Changing Borrowing Patterns of States

- **Post-pandemic surge:** State debts rose sharply after 2020 as governments borrowed heavily to manage the crisis.

- **Examples of fiscal stress:**
  - ***Uttar Pradesh*** – Revenue surplus shrank from ₹37,000 crore in FY20 to barely ₹2,000 crore.
  - ***Kerala*** – Borrowed over ₹80,000 crore during 2020–22, and debt exceeded ₹1 lakh crore later.
- **National trend:** Total State borrowings increased from **₹5.6 lakh crore (2017)** to **₹8.2 lakh crore (2022-23)**, showing widespread fiscal pressure.

Why Are States Borrowing More?

- **Pandemic impact:** Sharp fall in tax revenues and high spending on health, relief, and welfare schemes.
- **Welfare burden:** Populist measures like free power, pensions, and subsidies continue despite shrinking revenues.
- **GST-related challenges:** Heavy dependence on GST compensation and delays in payments from the Centre.
- **Low capital spending:** Resources diverted from infrastructure to social schemes, risking long-term growth.

Emerging Fiscal Risks

- **Debt sustainability issues:** States such as Punjab, Kerala, and Rajasthan have **debt-to-GSDP ratios exceeding safe limits**.
- **Reduced revenue capacity:** Dependence on central transfers and weak tax collection weaken autonomy.
- **Persistent fiscal deficits:** High **Gross Fiscal Deficit (GFD)** limits States' ability to invest productively.
- **Growth crowding-out:** Borrowing for consumption reduces funds for capital formation and employment generation.

How States Are Managing the Pressure

- **Increased borrowing:** Major States like Tamil Nadu and Maharashtra are leading borrowers.
- **Cuts in investment:** Capital projects are postponed to fund subsidies and salaries.
- **Centre's aid:** Reliance on Union transfers and GST compensation remains high.
- **Alternate revenue sources:** Kerala uses **lotteries** and **land monetisation** to raise funds.

Way Forward for Fiscal Stability

- **Fiscal prudence:** Prioritise **long-term debt management** and avoid excessive short-term populism.
- **Targeted welfare:** Design **focused subsidy programmes** instead of broad giveaways.
- **Stronger GST mechanism:** Ensure **timely compensation** and allow more **State-level tax flexibility**.
- **Balanced expenditure:** Shift spending toward **capital investment and infrastructure**, while maintaining essential welfare.

STATE INCOME AND EXPENDITURES

State Income/Revenue Sources

- **Own Tax Revenue:** Taxes collected by the State government, e.g., **sales tax/ GST share, state excise, stamp duty, property tax, vehicle tax**.
- **Non-Tax Revenue:** Fees, fines, charges for services, profits from State-owned enterprises, interest receipts.
- **Central Transfers:** Grants and shared taxes from the **Union government**, including **GST compensation, finance commission transfers, and central schemes**.
- **Other Sources:** Dividends from public sector undertakings, lottery revenue, and royalties (e.g., mining).

State Expenditures/Spending

- **Revenue Expenditure:** Day-to-day spending such as **salaries of government employees, pensions, subsidies, interest payments on debt, and welfare programs**.

- **Capital Expenditure:** Long-term investments like **roads, bridges, hospitals, schools, irrigation projects**, and infrastructure development.
- **Debt Repayment:** Repaying loans borrowed from the Centre, banks, or capital markets.

Sources of State Borrowing

- **Market Borrowings:** Selling **bonds and securities** to raise money from investors.
- **Loans from Centre:** Special loans or advances from the **Union government**.
- **Financial Institutions:** Borrowing from **banks, NABARD, or other development institutions**.
- **Alternative Sources: Lotteries, land monetisation, and public-private partnerships (PPPs)**.

Conclusion

State income comes from **own taxes, non-tax revenues, and central transfers**, while **expenditure** covers **welfare, salaries, subsidies, and infrastructure**. States borrow through **market bonds, loans from the Centre or banks, and alternative sources like lotteries or land sales**.

2. FEMALE LABOUR FORCE PARTICIPATION IN INDIA

Why in News?

- India has recently seen a significant **rise in female labour force participation. Despite** more women entering the workforce, the majority remain in low-paid, informal, or unpaid roles rather than in stable, salaried jobs.

What does FLFPR mean

- Measures the proportion of women engaged in any economic activity.
- **Recent Trend:** Dropped from 31.2% (2011-12) to 23.3% (2017-18), then sharply rose to 41.7% (2023-24).
- **Significance:** Often seen as an indicator of gender equality and economic inclusion.

LABOUR FORCE PARTICIPATION RATE (LFPR)

- **Labour Force Participation Rate (LFPR)** refers to the percentage of a country's working-age population (usually ages 15–64) that is either **employed or actively seeking employment**.
- In simple terms: It shows **how many people are participating in the labour market**.
- A higher LFPR indicates more people are working or looking for work, while a lower LFPR suggests fewer people are economically active.

Drivers of Rising Female Participation

- **Rural Women Leading:** Majority of the increase comes from rural areas.
- **Shift from Domestic Duties:** Women reporting "domestic duties" fell from 57.8% to 35.7%.
- **Unpaid Household Work:** Helpers in family enterprises increased from 9.1% to 19.6%.
- **Self-Employment Growth:** Own-account workers and employers rose from 4.5% to 14.6%.

Employment Patterns and Sectoral Trends

- **Agriculture Dominance:** 76.9% of rural women engaged in agriculture (up from 71.1%).
- **Decline in Industry & Services:** Women's participation in secondary and tertiary sectors has fallen.
- **Blurry Boundaries:** Overlap of unpaid household duties and enterprise helpers raises questions on actual employment.

Earnings and Job Quality

- **Falling Real Income:** Earnings have declined across self-employed, salaried, and employer categories.

- **Vulnerability:** Self-employment has increased but has not led to higher income.
- **No Secure Jobs:** Wage-based employment growth has not kept pace with rising participation.

Implications for Economy and Gender Equality

- **False Empowerment:** Higher participation without income security indicates distress-driven employment.
- **Economic Vulnerability:** Low-paid and unpaid work reduces household resilience and women's autonomy.
- **Policy Challenge:** Structural labour market issues prevent women from accessing quality and secure jobs.

Way Forward

- Focus on creating secure, formal wage jobs for women.
- Promote skill development and entrepreneurship targeted at high-paying sectors.
- Strengthen labour protections and social security for women in informal and self-employed roles.

Conclusion:
The rise in India's FLFPR hides deeper issues of poor job quality and declining earnings. True economic empowerment for women requires policies that prioritize **secure, well-paid, and dignified work**, not just higher participation numbers.

3. TRANSFORMING INDIA'S WORKFORCE

Why in News?

- India faces the challenge of creating enough quality jobs to absorb its growing working-age population and fully harness its demographic dividend.

India's Employment Challenge: Demographic Window Closing

- **Demographic Opportunity:** India will contribute nearly 18% of the global addition to the workforce by 2047.
- **Time-Bound Window:** Working-age population is expected to peak by 2043; delay in creating jobs risks wasting potential.
- **Economic Link:** Quality employment expands consumption, supports equitable growth, and stabilizes the economy.

Need for a Unified Employment Policy

- **Fragmented Efforts:** Schemes like Skill India and PMEGP exist but lack an integrated framework.
- **Inter-Ministerial Coordination:** Labour, Skill Development, Industry, and Education ministries must work together.
- **Institutional Mechanism:** Proposal for Empowered Group of Secretaries for policy oversight and District Planning Committees for local implementation.
- **Policy Alignment:** Industrial, trade, labour, and education policies need synchronisation to ensure job-oriented growth.

Bridging Labour Demand–Supply Gap

- **High-Employment Sectors:** Textiles, tourism, healthcare, agro-processing, real estate, and MSMEs can generate large-scale jobs.
- **Skill Deficit:** Graduates often lack employable skills; curricula need updating with AI, robotics, and green tech training.

- **Mobility Support:** Centre–State coordination required to facilitate migration and worker support for a unified labour market.

Key Employment Drivers

- **Labour Codes:** Timely implementation ensures protection while easing compliance for businesses.
- **MSMEs:** Employ over 25 crore people; need better access to finance, markets, and technology.
- **Urban Employment Guarantee:** Pilot urban schemes similar to MGNREGA for rural areas.
- **Regional Focus:** Target underdeveloped districts and promote rural internships for youth.

Emerging Opportunities

- **Gig Economy:** Expected to employ 9 crores by 2030; formalisation can provide social security and financial inclusion.
- **Female Labour Force Participation:** Low FLFP can be improved through incentives, childcare, eldercare, and formalising ASHA/Anganwadi roles; a 10% increase could add ~$700 billion to GDP.

Data for Policy Effectiveness

- **Gap:** Existing surveys understate informal and rural employment.
- **Solution:** High-frequency, real-time employment data can guide sector-specific interventions.

Conclusion

India's demographic dividend is fleeting. Integrated employment policies, skill alignment, labour reforms, female workforce inclusion, and data-driven interventions are essential to convert growth into jobs. Employment is not just an economic target but a foundation for social justice, inclusive prosperity, and national development.

4. INNOVATION AS A DRIVER OF ECONOMIC GROWTH

Why in News?

- The **2025 Nobel Prize in Economic Sciences** was awarded to Joel Mokyr, Philippe Aghion, and Peter Howitt for their work on **innovation-driven economic growth**.

Introduction

- The laureates' research answers a key economic question: **how countries sustain growth over centuries, not just decades**.
- Combines **historical analysis** (Mokyr) with **modern growth theory** (Aghion & Howitt) to explain the link between knowledge, innovation, and economic expansion.

Joel Mokyr's Insights

Role of Useful Knowledge

- Long-term growth relies on a steady flow of **useful knowledge**, divided into:
  - **Propositional knowledge:** Theoretical understanding of why things work.
  - **Prescriptive knowledge:** Practical know-how to implement ideas.

- Before the Industrial Revolution, societies had theory without technical ability.
- **Scientific Revolution:** Experiments and reproducibility transformed abstract knowledge into applied technology.
- **Policy Implication:** Technical education and skill development are essential; ideas alone do not generate growth.

Openness to Change

- Societies resistant to change stifle innovation.
- Historical Example: Britain thrived by enabling artisans and engineers to apply scientific ideas in industry.
- Governments must **support retraining, inclusivity, and redistribution** to ensure innovation benefits society.

Creative Destruction and Growth (Aghion & Howitt)

- Innovation **replaces outdated technologies**, creating winners and losers — termed **"creative destruction"**.
- Mathematical models show that technological progress drives **sustained long-term growth**.
- Raises productivity while continuously displacing old industries, forming a **dynamic equilibrium**.

R&D Investment

- **Underinvestment:** Society benefits from spillovers; subsidies may be needed.
- **Overinvestment:** Excessive profits can distort competition.
- **Optimal Level:** Economy-specific; balances innovation incentives with social welfare.

Relevance for Developing Economies (India)

- Growth requires **not just ideas, but translation** into scalable, practical solutions.
- India's R&D investment is currently ~0.7% of GDP; needs expansion.
- Policy focus should include **vocational training, entrepreneurship, and ease of doing business**.
- The **Innovation Index** and Economic Survey already stress knowledge-driven growth.

Conclusion

Innovation, knowledge creation, and societal openness are the **true drivers of sustained prosperity**. For countries like India, **investing in human capital, research ecosystems, and tolerance for disruption** is essential to ensure long-term economic growth and global competitiveness.

5. NAVIGATING THE GLOBAL ECONOMIC TRANSFORMATION

Why in News?

- Recently, major structural changes in the global economy shaped by the growing U.S.–China rivalry emphasized how state-led capitalism and digital dominance are redefining global trade and power dynamics.

Introduction

- The global economy is undergoing a **structural transformation**, not just cyclical changes.
- Post–Cold War **neoliberalism** is giving way to **protectionism, state control, and digital dominance**.
- This shift creates an opportunity for India and other developing nations to influence the emerging global order.

Populist Politics and State-Driven Capitalism

- **State-Capital Fusion:** Populist regimes mix state power with corporate interests, favouring oligopolies.
- **Corporate Dominance:** Crony capitalism prioritises corporate gains over public welfare, weakening the social contract.
- **Socio-Political Impact:** Centralised control reduces accountability, distorts competition, and promotes plutocracy.

Resurgence of Power Politics in Economics

- **Economic Nationalism:** US policies like "Make America Great Again" reflect a return to protectionism.

- **Strategic Control:** Measures like securing supply chains (Taiwan chips, Arctic access) aim to contain rivals geopolitically.
- **Ecological Imperialism:** Control over energy and resources extends influence, often under strategic autonomy narratives.
- **Global Instability:** Zero-sum strategies risk conflict, resource disputes, and humanitarian crises.

Digital Colonialism

- **Big Tech Influence:** Cloud and data monopolies dominate economic and political landscapes.
- **Digital Imperialism:** AI, state-backed digital currencies, and cross-border financial controls can reduce national sovereignty.
- **Political Risks:** Digital systems can influence elections, fiscal policy, and governance structures.

Aid Withdrawal and Global Inequalities

- **Funding Cuts:** G-7 development aid reductions ($44B) could push millions into poverty.
- **Humanitarian Fallout:** Reduced grants and aid exacerbate migration, hunger, and conflict in the Global South.
- **Moral Crisis:** Shift from shared prosperity to self-preservation increases global inequities.

Opportunities for India and the Global South

- **Debt and Inequality:** Address sovereign debt traps and wealth concentration.
- **Collaborative Alternatives:** Promote **South–South cooperation**, debt relief, and institutional reforms.
- **Strategic Alliances:** Strengthen BRICS and regional economic partnerships to reduce Western dominance.

Domestic Policy Recalibration for Global Leadership

- **Strategic State Role:** Lead in sectors like energy, data, healthcare, agriculture, and infrastructure.
- **Anti-Monopoly Measures:** Create sovereign wealth funds and enforce competition laws.
- **PSU Reimagining:** Use state enterprises to achieve national and geopolitical objectives.
- **Knowledge Economy:** Invest heavily in R&D, education, and innovation.
- **True Non-Alignment:** Maintain substantive independent foreign policy.

Conclusion:
India faces a critical choice: follow established powers or lead **a new era of fair, sustainable globalization**. With strategic vision, the Global South can shape an economy grounded in **justice, resilience, and shared prosperity**.

6. INDIA'S PRIVATE INVESTMENT SLOWDOWN

Why in News?

- India's economy continues to record high GDP growth rates, yet **persistent weakness in private investment** despite several reforms and fiscal incentives.

Role of Investment in India's Growth

- India's GDP is primarily driven by **private consumption (around 60%)** and **investment spending**, also called **Gross Fixed Capital Formation (GFCF)**.
- Investment includes capital formation by **private firms, government projects, and households** in assets like infrastructure, housing, and machinery.
- Since 2011–12, the share of investment in GDP has **steadily declined**, staying below **30%** in most years after 2014.

- This suggests India's growth is **more consumption-led** than investment-led — a structure that may not sustain high growth over the long term.

Importance of Private Investment

- Private investment is essential to **expand production capacity**, **create jobs**, and **improve productivity**.
- It acts as a multiplier — higher business spending increases incomes, which further stimulates demand.
- The government's goal is to **shift growth drivers** from public expenditure to private enterprise, consistent with the model of *"Minimum Government, Maximum Governance."*
- By boosting infrastructure and offering incentives like **tax cuts and PLI schemes**, the government aims to "**crowd in**" private investment — i.e., use public spending to attract private participation.

Declining Private Sector Contribution

- Data shows a **decline in private sector investment** even after major reforms such as the 2019 corporate tax cuts.
- The **government's share in total investments** has risen, while the shares of **private companies and households** have fallen.
- The **FY24 data** indicates that GDP grew strongly, but this growth was largely **driven by public spending**, not by private enterprise.
- This pattern suggests that the private sector remains **risk-averse**, possibly due to demand uncertainty, global slowdown, and weak profitability in some industries.

Concerns and Implications

- The **reluctance of private firms to invest** poses a risk to India's medium-term growth model.
- Overdependence on public expenditure can lead to **fiscal stress** and limit the government's ability to maintain high capital spending.
- Without strong private participation, **job creation** and **income distribution** will remain weak, slowing progress on reducing **unemployment and inequality**.
- Persistent underinvestment could also hinder India's ambition to become a **global manufacturing hub** and achieve its **$5-trillion economy target**.

Way Forward

- **Enhance business confidence** through stable regulatory policies and faster project clearances.
- **Improve ease of doing business**, especially for MSMEs and start-ups.
- **Address demand constraints** by supporting consumption in rural and low-income segments.
- **Promote credit availability** through lower interest rates and strong banking sector health.
- **Encourage public-private partnerships (PPP)** in infrastructure and green sectors.

Conclusion

The government continues to play a dominant role through public spending; long-term growth will depend on **reviving private sector confidence** and **stimulating productive investment**. Without this, India's growth story risks becoming uneven and unsustainable.

III. Inclusive growth and issues

1. REASSESSING POVERTY IN INDIA

Why in News?

- A recent study by RBI's Department of Economic and Policy Research (DEPR) has updated India's poverty estimates for major states using the 2022–23 Household Consumption Expenditure Survey (HCES).

Revisiting the Rangarajan Committee Approach

- The **Rangarajan Committee (2014)** was formed to review the methodology for poverty estimation in India.
- It defined the poverty line based on **minimum monthly expenditure** required for essential food and non-food needs.
- The committee's findings placed around **one-third of India's population** below the poverty line in 2011–12.
- Since then, **no official update** to the national poverty line had been made until the RBI economists' recent study.

Key Findings from the RBI Study (2022–23)

- **Widespread decline in poverty:** Most states recorded major reductions in poverty levels compared to 2011–12.
- **Top performers:** States such as **Odisha and Bihar** showed significant progress in both rural and urban poverty reduction.
- **Lowest poverty levels:** States like **Himachal Pradesh, Kerala, and Tamil Nadu** now have very low rural and urban poverty rates.
- **Regional disparities:** Despite overall improvement, **Chhattisgarh, Jharkhand, and Uttar Pradesh** continue to face high poverty levels.

Methodological Approach

- Instead of relying on general inflation data (CPI), the study created a **new price index** based on the **Poverty Line Basket (PLB)** developed by the Rangarajan Committee.
- This approach better captures **actual changes in consumption patterns and price differences** between rural and urban areas.
- It also produced **state-specific poverty lines**, allowing for more accurate inter-state comparisons.

From Income to Multidimensional Poverty

- Poverty estimation in India has evolved from measuring **income or consumption levels** to assessing **multidimensional deprivation**.
- The **Multidimensional Poverty Index (MPI)** includes indicators related to **health, education, and standard of living** — such as nutrition, schooling, sanitation, electricity, and housing.
- As per **NITI Aayog (2024)**, over **20 crore people have moved out of multidimensional poverty** in the last decade, showing major welfare gains.
- Different institutions (SBI, IMF, World Bank) use **diverse methodologies**, leading to varied poverty estimates.

Analysis

- The **Rangarajan line** focuses on basic expenditure needs, while the **MPI** reflects broader human development progress.
- The new RBI estimates revive the discussion on **monetary poverty**, complementing MPI-based findings.
- However, poverty reduction remains **uneven across states**, indicating gaps in welfare delivery, employment, and regional development.

Way Forward

- **Regular revision of poverty lines** to reflect new consumption patterns and cost structures.
- **Integrate monetary and multidimensional metrics** for a complete poverty profile.
- **Ensure data transparency** and timely release of national surveys.
- **Target lagging regions** with focused welfare and employment programmes.
- **Use digital tools and DBTs** for efficient benefit delivery.

Conclusion

The RBI's new poverty estimates have reignited the debate on how poverty is measured in India. While income-based metrics remain useful, the growing emphasis on multidimensional poverty reflects a broader approach to assessing well-being and regional inequality.

IV. Agriculture and allied

1. INDIA'S MAKHANA REVOLUTION

Why in News?

- The Prime Minister recently inaugurated the **National Makhana Board** in Bihar, describing it as a "revolutionary step" for farmers.

Makhana and Its Importance

- **What is Makhana?** It is the edible seed of the prickly water lily (*Euryale ferox*), cultivated mainly in ponds and wetlands.
- **Nutritional Value:** Low in fat and high in protein, fibre, and antioxidants — making it a **superfood** with global demand.
- **Cultural Significance:** Traditionally used in religious rituals, it has now evolved into a major health snack.

Bihar – The Heart of India's Makhana Production

- Bihar produces nearly **90% of India's makhana**, concentrated in districts like **Darbhanga, Madhubani, Purnea, and Katihar**.
- However, **most of it is sold raw**, allowing other states such as Punjab and Assam to process and export it at higher profits.
- As a result, **farmers receive minimal returns**, and Bihar loses potential tax and export revenue.

Challenges Facing the Makhana Sector

- **Lack of Value Addition:** Absence of modern processing and packaging facilities limits earnings.
- **Dominance of Middlemen:** Farmers depend on intermediaries and get a small share of the market value.
- **Manual and Labour-Intensive Harvesting:** Traditional underwater harvesting is time-consuming and costly.
- **Low Adoption of High-Yield Varieties:** Improved varieties like *Swarna Vaidehi* remain underused.
- **Poor Institutional Support:** Earlier initiatives like the National Research Centre for Makhana suffered from underfunding and staff shortages.

The National Makhana Board

- **Launched with ₹100 crore funding** to boost cultivation, processing, branding, and exports.
- Will **train farmers**, link them with government schemes, and promote sustainable cultivation.
- **Focus areas:** Modern technology adoption, mechanisation, cold-chain infrastructure, and farmer cooperatives.

Recent Developments and Policy Support

- **GI Tag:** *Mithila Makhana* received a **Geographical Indication (GI) tag** in 2022, giving it brand identity.
- **MSP Proposal:** Bihar government has urged the Centre to fix a **Minimum Support Price (MSP)** to ensure fair income.
- **Export Vision:** Plans for new **processing hubs and cargo airports** in Darbhanga and Purnea to enable direct exports.

The Way Forward

- Increase **investment in research and technology** for mechanised harvesting.
- Encourage **private participation and FPO-led value chains** for better market access.
- Ensure the **National Makhana Board** remains functional, transparent, and accountable to farmers.

Conclusion

India's makhana revolution offers both economic and social potential — empowering farmers and boosting rural incomes. For Bihar to truly benefit, sustained investment, innovation, and farmer-centric reforms are key to turning this traditional crop into a global success story.

2. 10 YEARS OF PARAMPARAGAT KRISHI VIKAS YOJANA (PKVY)

Why in News?

- The Paramparagat Krishi Vikas Yojana (PKVY) has completed a decade (2015–2025), transforming organic farming, certification, and market linkages for farmers.

About Paramparagat Krishi Vikas Yojana (PKVY)

- **Launch & Objective:** Started in 2015 under the Ministry of Agriculture & Farmers Welfare as part of the National Mission for Sustainable Agriculture (NMSA) to promote chemical-free, traditional organic farming.
- **Cluster-Based Approach:** Farmers organize 20 ha+ clusters for collective adoption of organic practices, easier certification, and shared resources.
- **Eligibility & Funding:** Open to farmers or institutions with land up to 2 ha; funding flows through Regional Councils → State Plans → DBT to farmers.
- **Financial Support:** ₹31,500 per hectare over 3 years covering inputs, training, certification, and marketing.

Certification Systems

- **NPOP (National Programme for Organic Production):** Third-party certification for exports and formal markets.
- **PGS-India (Participatory Guarantee System):** Community-driven, peer-reviewed certification for domestic markets.
- **Large Area Certification (LAC):** Launched in 2020 to fast-track certification in areas with no prior chemical use, reducing transition time.

Digital & Institutional Integration

- **Jaivik Kheti Portal:** Connects farmers, buyers, and input suppliers for transparent, traceable organic trade.
- **FPO Formation:** 9,268 Farmer Producer Organisations formed to strengthen collective marketing and value addition.
- **Market Linkages:** Enhanced access to premium markets for organic produce.

Achievements (as of Jan 2025)

- **Scale:** ₹2,265.86 crore released; 15 lakh hectares under organic cultivation, 52,289 clusters, 25.3 lakh farmers benefited.
- **Certification:** Sikkim fully organic; LAC certifications in Lakshadweep, Dantewada, expanding to Nicobar and Ladakh.
- **Digital Reach:** 6.23 lakh farmers, 19,016 groups, and 8,676 buyers engaged via Jaivik Kheti.
- **Ecological Gains:** Reduced chemical use, improved soil health, strengthened local input ecosystems.

Challenges

- **Yield Reduction:** Transitional dip in productivity affects small farmers.
- **Certification Costs:** Verification and residue testing remain expensive.
- **Market Gaps:** Price premiums and buyer networks uneven across regions.
- **Cluster Dependence:** Success relies on local leadership and coordination.
- **Sustainability:** Continuity post-funding uncertain; technical support gaps remain.

Organic Farming & Marketing Schemes

- **Mission Organic Value Chain Development for North Eastern Region (MOVCDNER)**: Boosts organic farming and marketing in NE states with ₹46,500/ha assistance.
- **Organic Certification under Agri-Export Policy**: Facilitates export of certified organic products via APEDA.
- **Jaivik Kheti Portal**: Online platform for organic produce marketing and farmer–buyer linkage.
- **Soil Health Card Scheme**: Encourages balanced fertilization and organic inputs based on soil analysis.
- **Zero Budget Natural Farming (ZBNF)**: Promoted under Sub-Mission on Agroecology to reduce input costs and enhance sustainability.

Conclusion:
India promotes organic farming through schemes like PKVY and MOVCDNER, offering financial aid and market support. Certification, export facilitation, and digital platforms like Jaivik Kheti enhance visibility and value for organic produce.

3. INDIA'S MISSION FOR SELF-SUFFICIENCY IN PULSES

Why in News?

- Recently, the Union Cabinet approved the **"Mission for Atmanirbharta in Pulses"** to reduce dependence on imports and boost domestic production.

Background

- India is both the **largest producer and consumer** of pulses globally but still struggles to meet its domestic demand.
- This gap affects food security, farmer incomes, and the trade balance. The new mission aims to achieve **complete self-reliance** in key pulses by 2031.

Why Farmers Moved Away from Pulses

- **Price Disadvantage:** Market prices often fall **below MSP** due to cheaper imports.
- **Import Competition:** Duty-free imports from countries like **Canada, Australia, and Myanmar** lower domestic demand.
- **Policy Focus on Cereals:** Support for rice and wheat (subsidies, irrigation) overshadows pulses.

- **Low Productivity:** Mostly grown on **rain-fed, poor-quality soils** vulnerable to droughts.
- **Weak Procurement:** Inconsistent government purchases discourage cultivation.
- **Limited R&D:** Lack of improved seeds and pest-resistant varieties.

Structural Challenges

- **Low Yields:** Indian yield averages **740 kg/ha**, below the global average.
- **Climatic Risk:** Droughts, erratic monsoons, and El Niño severely affect production.
- **Small Landholdings:** 85% of farmers are small/marginal with poor access to irrigation or mechanisation.
- **Institutional Gaps:** Weak linkages between research, seed supply, and extension services.

Benefits of Pulse Cultivation

- **Improves Soil Fertility:** Pulses fix atmospheric nitrogen naturally.
- **Eco-friendly:** Require less water and fertilizer than cereals.
- **Carbon Benefits:** Increase soil organic carbon and reduce emissions.
- **Economic Advantage:** Offer better long-term sustainability and lower input costs.

Way Forward

- **Seed Development:** Promote climate-resilient, high-yielding varieties through ICAR–IIPR.
- **Expand Cultivation:** Encourage pulse farming in **rice-fallow lands** of eastern India.
- **Assured Procurement:** Strengthen NAFED/NCCF operations with timely payments.
- **Infrastructure:** Build processing and storage hubs in pulse clusters.
- **Smart Imports:** Introduce flexible import duties to protect farmers.
- **Sustainability Link:** Align pulses with carbon farming and green agriculture missions.

PULSES IN INDIA

Edible seeds of legume plants such as gram, tur, urad, moong, and masoor. High in protein, fibre, and micronutrients; crucial for dietary security.

- **Agro-climatic Conditions:** Grow well in both **kharif and rabi** seasons with moderate temperature and rainfall.
- **Production Facts:**
  - India produces around **25 million tonnes**, accounting for **25% of global output**, but consumes 27%.
  - **Major Crops:** Gram (40%), Tur (15–20%), Moong/Urad (8–10%).
  - **Key States:** Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh, and Karnataka.

Conclusion

India's push for **pulse self-sufficiency** is vital for nutritional security, environmental sustainability, and reducing import dependence. The new mission, if effectively implemented, could transform India's pulse economy and empower millions of farmers.

4. INDIA'S ETHANOL REVOLUTION DRIVEN BY GRAINS

Why in News?

- Recently India's ethanol blending programme has shifted from sugarcane to **grain-based ethanol**, with maize emerging as the main source.

About Ethanol Blending Programme (EBP)

- Ethanol Blending Programme (EBP) was launched to **reduce crude oil imports** and support **sugarcane farmers**.
- Initially sugarcane-focused, the programme has evolved into a **multi-feedstock ethanol industry** driven by grains such as maize and rice.
- Investments in grain-based ethanol exceed **₹40,000 crore**, reshaping rural industry and agricultural markets.

Sugarcane as the Initial Foundation

- Early ethanol production relied on **molasses**, a sugarcane by-product.
- Between 2013–14 and 2018–19, ethanol supply to Oil Marketing Companies (OMCs) rose from 38 crore litres to 189 crore litres, increasing blending from 1.6% to 4.9%.
- Higher ethanol prices encouraged mills to use B-heavy molasses and cane juice, stabilising the sugar sector.

Shift to Grain-Based Ethanol

- Since 2018–19, ethanol production from **maize, rice, and damaged grains** was allowed.
- Initially supplementing sugarcane distilleries in off-season, standalone **grain-based plants expanded rapidly** in Punjab, Haryana, Bihar, Andhra Pradesh, MP, Maharashtra, Karnataka, Rajasthan, and Chhattisgarh.
- By 2023–24, **grain-based ethanol (59.8%) surpassed sugarcane-based (40.2%)** in supply to OMCs.

Maize as the Main Feedstock

- 2024–25 projections: 920 crore litres ethanol supply, with 620 crore litres from grains, including 420 crore litres from maize.

- **Drivers of shift:**
  - **Reduced sugarcane availability** due to droughts (sugar production fell from 359 lakh tonnes to ~261 lakh tonnes).
  - **Higher pricing:** Maize ethanol (~₹71.86/litre) more lucrative than cane/syrup alternatives.

Sector Growth and Capacity

- 2025–26 blending target: 20% ethanol in petrol.
- OMCs tendered 1,050 crore litres; received **1,776 crore litres** offers (majority grain-based).
- 499 operational distilleries with **1,822 crore litres capacity** demonstrate sector's expansion potential.

Challenges and Concerns

- **Overcapacity:** Blending ceiling limits may cause oversupply and price distortions.
- **Food vs Fuel:** 420 crore litres maize ethanol consumes ~11 mt (~26%) of India's maize output, affecting livestock feed and food inflation.
- **Environmental Impact:** Large-scale grain use raises concerns over **water, land, and fertiliser use**.

Government Strategy

- Adopt **dual-feedstock policy**: sugarcane + grains to balance supply and food security.
- Promote **second-generation (2G) biofuels** from agricultural residues (e.g., paddy straw).
- Continue focus on ethanol to **diversify rural income, reduce crude imports, and meet 20% blending target sustainably**.

Conclusion:
India's ethanol programme is evolving from sugarcane to **grain-led biofuel**, highlighting energy security, rural development, and climate goals. Future strategy balances **feedstock diversity, food security, and sustainable biofuel growth**.

V. Industry and Industrial Policies

1. INDIA TO REVISE IIP BASE YEAR

Why in News?

- The **Ministry of Statistics and Programme Implementation (MoSPI)** plans to **revise the base year of the Index of Industrial Production (IIP) from 2011–12 to 2022–23**.

Index of Industrial Production (IIP)

- The IIP measures the **short-term performance of India's industrial sector**, including **manufacturing, mining, and electricity.**
- It is released **monthly** by the **National Statistical Office (NSO)**.
- **Purpose:** It tracks **changes in industrial output volume** compared to a chosen base year, serving as an important **indicator for policy and forecasting.**
- **Current Base Year: 2011–12**, now outdated due to rapid industrial and technological shifts.
- **Historical Context:** Introduced in **1937**, the IIP has seen **nine base-year revisions** so far to reflect evolving industrial structures and international standards (as per **IRIIP 2010**).

Why the Revision Is Needed

- India's **industrial landscape has transformed** with new sectors like **electronics, renewable energy, and pharmaceuticals** emerging strongly.
- **Old product weights and outdated items** no longer represent actual production patterns.

- The revision aims to ensure **timely, reliable, and relevant data** for decision-making and align IIP with **GDP and WPI updates.**
- A **Technical Advisory Committee (TAC-IIP)** has recommended the base year shift to **2022–23** for data consistency.

Key Features of the New IIP Base Year (2022–23)

Expanded Product Coverage
- Outdated items like **CFLs, kerosene lamps, and typewriters** will be dropped.
- **New products** such as **LED bulbs, laptops, vaccines, and aerospace components** will be added.
- Inclusion of **minor minerals** and **gas supply data** aligns with international practices.

Improved Accuracy and Representation
- Over **276 previously "miscellaneous" items** have been reassigned to proper industrial categories.
- This reduces **data gaps and duplication**, improving reliability.

Dynamic Factory Replacement
- When factories close or shift production, **new units will be substituted** using a **12-month overlapping data method** for smooth transition.
- A **de-seasonalised IIP** will also be introduced to identify real production trends and business cycles.

Integration of Digital and GST Data
- Linking **GST returns and digital platforms** will improve **data timeliness and verification**.
- Enables **near real-time industrial monitoring** and reduces reporting delays.

Significance of the Revision
- Provides a **more realistic picture** of industrial growth.
- Aligns India's data framework with **global statistical standards.**
- Enhances **policy formulation**, **budget planning**, and **investment assessment.**
- Reflects India's **shift toward modern, technology-driven industries** under **Make in India** and **PLI schemes.**

Conclusion
- Revising the **IIP base year to 2022** strengthen the **accuracy of industrial growth measurement**, support **evidence-based policymaking**, and reinforce India's reputation for **credible and updated economic data.**

VI. Trade and External sector

1. NORTH-EASTERN STATES EXPORTS

Why in News?
- The recent **25% U.S. tariff on Indian exports** has revealed deep internal imbalances in India's trade structure.

Unequal Export Geography
- Despite sharing **5,400 km of international borders**, the **eight northeastern states together contribute only 0.13% of India's exports**, showing the region's economic marginalisation.
- India's export economy is **heavily concentrated** in a few western and southern states.

- **Gujarat, Maharashtra, Tamil Nadu, and Karnataka** together make up **over 70% of exports**, while the **entire Northeast contributes less than 1%**.
- This centralisation reflects **decades of policy neglect**, weak infrastructure, and limited industrial linkages in the eastern and northeastern frontiers.

Why is the Northeast Marginalised in Trade?

- **Neglected potential:** The region shares borders with five countries (China, Bhutan, Bangladesh, Nepal, and Myanmar), yet remains disconnected from cross-border commerce.
- **Security-first approach:** Border areas are treated as **military zones** rather than trade gateways, prioritising surveillance over movement of goods.
- **Policy invisibility:** Key national trade documents and export strategies **barely mention the Northeast**.
- **Lack of representation:** No northeastern voices are present in major trade policy bodies such as the **PM's Economic Advisory Council** or **Board of Trade**.

Ground Realities and Economic Impacts

- **Tea sector in distress:** Assam, which produces over half of India's tea, struggles with branding and export logistics. The new U.S. tariff raises production costs and risks job losses.
- **Oil dependency issues:** Expansion of **Numaligarh Refinery** relies on imported crude; global disruptions or sanctions can directly affect livelihoods in Assam.
- **Border trade collapse:** Once active routes like **Zokhawthar (Mizoram)** and **Moreh (Manipur)** have become inactive due to the **scrapping of the Free Movement Regime (FMR)** in 2024 and lack of logistics infrastructure.

External Context and Missed Opportunities

- **China's growing presence:** Beijing is deepening influence in **northern Myanmar** through infrastructure and militia networks.
- **India's stalled connectivity:** Projects like the **India-Myanmar-Thailand Highway** remain unfinished, symbolising delays in integrating the region with Southeast Asia.
- **Global shift in supply chains:** As global trade corridors move toward Southeast Asia, India's overdependence on its western ports looks increasingly outdated.

Strategic and Policy Implications

- **Trade vulnerability:** Overreliance on a few states makes India's exports fragile to regional disruptions.
- **Structural exclusion:** The Northeast's neglect is **systemic**, not accidental — reflecting policy, planning, and institutional biases.
- **Strategic contradiction:** India's **Act East Policy** cannot succeed if its eastern frontier remains economically weak.

Way Forward

- **Diversify export hubs** by investing in northeastern logistics, cold storage, and border markets.
- **Promote local industries** like tea, handicrafts, and agro-processing through branding and export incentives.
- **Strengthen border infrastructure** under **BADP** and **BIM schemes** with a focus on trade, not just security.
- **Include regional representation** in trade policymaking to ensure equitable development.

Conclusion

India's ambition to be a major trading power requires **balanced regional integration** through Strengthening its infrastructure, policy inclusion, and institutional voice will not only boost exports but also enhance **national security, regional stability, and economic cohesion**.

2. NAVIGATING WTO PRESSURES AFTER CHINA'S SDT EXIT

Why in News?

- Recently China has announced that it will **no longer seek Special and Differential Treatment (SDT)** at the **World Trade Organisation (WTO)**, despite retaining its "developing country" status.

What is SDT and Why It Matters

- **Special and Differential Treatment (SDT)** allows developing countries **flexibility in trade rules**, such as higher subsidy limits and longer timelines for compliance.
- India has relied on SDT since joining the WTO in **1995** to **protect farmers, food security programs, and small industries**.
- With China voluntarily stepping away from SDT, India now stands more isolated among major developing economies.

Why China's Decision is Significant

- **First major economy to withdraw:** China's exit marks the first time a major developing country has **given up SDT privileges**.
- **Contrast with India:** India continues to use SDT to maintain its **MSP and food subsidy programs**.
- **Rising pressure:** The U.S. and EU argue that fast-growing economies like India no longer need special concessions.

Implications for India

- **Food security at risk:** Reduced subsidy space could impact **NFSA and PDS operations**, affecting millions of poor households.
- **Rural income decline:** If subsidy caps are enforced, rural earnings could **drop by 10–15%**, worsening inequality.
- **Trade exposure:** Indian **farmers and MSMEs** could face tougher competition without SDT protection.
- **Global criticism:** Developed nations accuse India of **distorting global trade** through high MSP and export restrictions.

Options Available for India

- **Subsidy redesign:** Move from **price-based subsidies** to **direct income support** for farmers to avoid WTO violations.
- **Use Green Box measures:** Increase spending on **R&D, irrigation, and sustainable agriculture**, which are WTO-compliant.
- **Negotiate transition time:** Seek **longer adjustment periods** for subsidy and tariff reforms.
- **Push digital sovereignty:** Safeguard **data localisation** and **digital trade interests** in new WTO negotiations.

Way Forward

- **Gradual reform:** Phase out non-essential SDT protections while keeping key food programs intact.
- **Empower MSMEs:** Integrate small businesses with **global e-commerce** platforms like **ONDC**.
- **Defend pharma sector:** Protect **generic drug exports** while balancing intellectual property obligations.
- **Build coalitions:** Strengthen alliances such as the **G33** to collectively defend agricultural interests.
- **Focus on competitiveness:** Enhance farm productivity and diversify export markets to reduce WTO dependence.

WTO Agreement on Agriculture (AoA) – Article 6.2 Exemptions

- Developing countries can give **investment and input subsidies** (like fertilizer, irrigation, or power) to **poor and small farmers** without counting them under the subsidy limit.
- **India's use:** India uses this rule to defend its **support to small and marginal farmers**, who make up about **85% of the farming community**.
- **Why it matters:** This clause helps India justify its **MSP and food subsidy programs** in WTO talks.

Aggregate Measurement of Support (AMS)

- **Meaning:** AMS is the WTO's way of measuring **trade-distorting subsidies** (also called **Amber Box** subsidies).
- **India's issue:** India's **MSP and food procurement** often exceed the **10% limit** set for developing nations.
- **Example:** India's **rice subsidies** have been questioned several times at the WTO.
- **Importance:** India wants the **AMS calculation rules changed** because they don't reflect the real needs of developing countries.

Green Box vs Amber Box Subsidies

- **Amber Box:** Includes **price-based subsidies** like MSP and government grain procurement — considered **trade-distorting**.
- **Green Box:** Includes **non-trade-distorting supports** such as R&D, crop insurance, and environmental programs.
- **India's stance:** India still depends on **Amber Box support**, but is now increasing **Green Box schemes** for **climate-friendly and digital farming**.
- **Why it matters:** Shifting to **Green Box** helps India **avoid WTO disputes** and **modernise agriculture**.

G33 Coalition

- A group of **47 developing countries** including India, China, and Indonesia that work together in WTO farm negotiations.
- **India's role:** Leads the group in demanding a **Special Safeguard Mechanism (SSM)** and a **permanent solution for food stockholding**.
- **Importance:** Gives India **stronger bargaining power** by making subsidy and food security issues **a collective developing-country demand**.

National Food Security Act (NFSA), 2013

- Provides **subsidised food grains** to 75% of rural and 50% of urban people through the **PDS**.
- **WTO concern:** India's **large MSP purchases and subsidies** under NFSA are seen as **breaking WTO limits**.
- **Why it matters:** If WTO rules tighten, it could **impact food supply** for over **800 million Indians**.

Conclusion

To stay resilient, India must **modernise its subsidy system**, pursue **WTO-aligned reforms**, and **lead a coalition of developing nations** defending equitable trade rights. Through this India can protect its farmers and food security while evolving as a **responsible global trading power**.

3. BOOSTING RUPEE INTERNATIONALISATION

Why in News?

- The **Reserve Bank of India (RBI)** recently announced a series of policy measures aimed at **deepening India's financial markets** and **advancing the internationalisation of the rupee**.

RBI's Recent Reforms

Supporting Corporate Consolidation

- **Takeover Financing:** Banks are now allowed to finance **corporate mergers and acquisitions**, a move earlier restricted due to risk concerns.
- **Impact:** Enables structured and cost-effective funding for Indian corporates to expand, enhancing competitiveness.
- **Safeguards:** Banks must ensure strict risk-control measures and compliance with regulatory standards.
- **Alignment:** Complements the **Insolvency and Bankruptcy Code (IBC)** framework and boosts corporate consolidation.

Promoting Rupee Internationalisation

- **Cross-Border Rupee Lending:** Indian banks and their overseas branches can now lend in rupees to entities in **neighbouring countries** like Nepal, Bhutan, and Sri Lanka.
- **Objective:** Reduce dependency on the **US dollar** and strengthen India's regional financial influence.
- **Context:** Aligns with global efforts by BRICS nations to diversify away from dollar-based settlements.

Expanding Financial Market Access

- **IPO Financing:** Lending limit for IPO applications increased from ₹10 lakh to ₹25 lakh.
- **Loans Against Shares:** Limit raised to ₹1 crore (from ₹20 lakh, last revised in 1998).
- **Bond Market Support:** Ceiling on loans against listed debt removed to enhance **bond market liquidity**.
- **SRVA Surplus Use:** Balances in **Special Rupee Vostro Accounts** (SRVAs) can now be invested in **corporate bonds and commercial papers**, improving rupee liquidity.

Enhancing Forex Market Benchmarking

- **Currency Expansion:** Financial Benchmarks India Limited (FBIL) will now include more global currencies beyond the **USD, Euro, Pound, and Yen**.
- **Significance:** Reduces inefficiencies of dollar-based routing and strengthens the **rupee as a trade and settlement currency**.

Relaxing Large Borrower Lending Rules

- **Framework Revision:** The 2016 restrictions on lending to large borrowers (exposure above ₹10,000 crore) have been relaxed.
- **Effect:** Provides banks more flexibility in extending large corporate loans, with risks managed under the **Large Exposure Framework** and macro-prudential tools.

Broader Economic Implications

- **Corporate Sector:** Easier access to takeover financing boosts **investment and competitiveness**.
- **Banking System:** Diversifies loan portfolios and opens **new revenue channels**.
- **Financial Markets:** Deeper IPO and bond markets improve **market liquidity and investor confidence**.
- **Regional Influence:** Rupee internationalisation strengthens India's role in **South Asia's financial architecture**.
- **Geopolitical Context:** Reinforces India's financial sovereignty amid global currency realignments.

Way Forward

- Strengthen **risk management** to avoid asset bubbles.
- Encourage **regional rupee trade settlements**.
- Deepen **corporate bond markets** through transparency and investor safeguards.
- Ensure **gradual integration** with global markets to prevent volatility.

Conclusion

The RBI's latest reforms signal a bold shift toward making the **rupee a globally relevant currency** and deepening India's financial ecosystem. While challenges persist, these steps mark India's growing confidence in its **economic strength and monetary independence** in a changing global order.

VII. Investment models

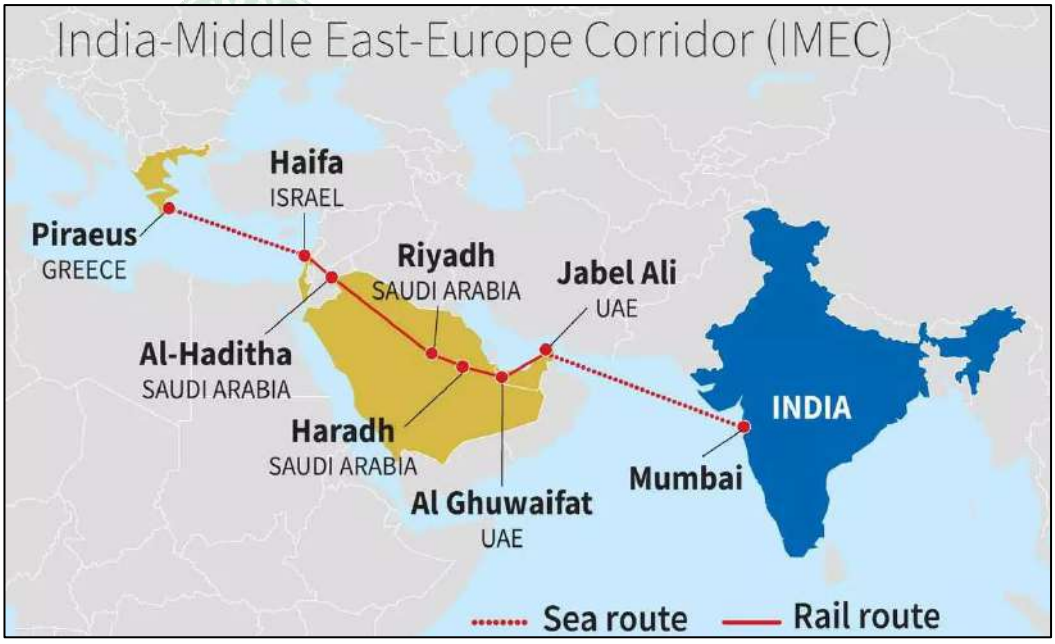
1. INDIA–MIDDLE EAST–EUROPE ECONOMIC CORRIDOR (IMEC)

Why in News?

- Recently the India–Middle East–Europe Economic Corridor (IMEC) has gained renewed attention amid rising tensions in West Asia and disruptions in Red Sea trade routes

About IMEC

- The India–Middle East–Europe Economic Corridor (IMEC) is a **multimodal connectivity initiative** announced during the **G20 Summit in New Delhi (2023)**.
- It aims to **link India, the Arabian Peninsula, and Europe** through an integrated network of **ports, railways, energy grids, and digital infrastructure**.
- IMEC is envisioned as an **alternative to China's Belt and Road Initiative (BRI)**, promoting transparent, sustainable, and secure trade corridors.



Structure of the Corridor

- **Eastern Corridor:** Connects **Indian ports** (like Mumbai) to the **UAE** by sea.
- **Middle Corridor:** A **rail link across Saudi Arabia, Jordan, and Israel**, leading to **Haifa Port** on the Mediterranean Sea.
- **Western Corridor:** Maritime route from **Haifa to major European ports**.
- Additionally, the corridor will include a **hydrogen pipeline**, **electricity grid**, and **high-speed digital cable network**.

Geopolitical Context

- The project emerged following the **Abraham Accords**, which normalised relations between Israel and several Arab nations.
- It builds on growing **India–Gulf partnerships** and the **I2U2 alliance (India, Israel, UAE, U.S.)** for regional economic cooperation.
- The initiative is backed by **the U.S., European Union, France, Germany, Italy, Saudi Arabia, and the UAE**.

Challenges and Geopolitical Risks

- The **Israel–Hamas conflict** since October 2023 has strained regional stability, directly affecting the corridor's viability.
- **Maritime insecurity** in the **Red Sea** due to Houthi attacks has disrupted global shipping.
- Emerging **Arctic routes** and alternative trade corridors are reshaping global trade dynamics, adding competition.

Strategic Importance for India

- Offers **an alternative to the Suez Canal** and reduces dependence on **China-dominated supply chains**.
- Strengthens **India–Europe connectivity**, boosting trade and logistics efficiency.
- Enhances India's **'Act West' policy**, expanding strategic and energy ties with Gulf nations.
- Promotes **green energy cooperation** and supports India's leadership in **digital and clean hydrogen sectors**.

Infrastructure and Technology Integration

- Focuses on **sustainable transport** and **digital transformation** through:
  - A **green hydrogen pipeline** between India and Europe.
  - **Cross-border electricity sharing** for renewable energy.
  - **Digital highways** via undersea fibre cables.
  - **Upgraded port–rail infrastructure** to streamline trade flow.

Way Forward

- Treat IMEC as a **long-term strategic corridor** rather than a short-term trade project.
- Establish a **joint coordination body** for policy continuity.
- Encourage **public–private investments** and **multilateral financing**.
- Strengthen **security and diplomatic cooperation** to protect trade routes.
- Align with global connectivity frameworks such as the **EU's Global Gateway** and **U.S.-led PGII**.

Conclusion

The IMEC represents a bold step toward reshaping global trade architecture and enhancing India's strategic reach. Its success will depend on sustained regional cooperation, stable geopolitics, and collective investment in resilient connectivity.

B. ENVIRONMENT

I. Biodiversity and conservation

1. WILD ELEPHANT DNA-BASED CENSUS

Why in News?

- India's first DNA-based elephant census has revealed a significant decline in the wild elephant population.

Elephants: Ecological and Cultural Importance

- Elephants are **keystone species** that help maintain forest ecosystems by dispersing seeds and clearing vegetation.
- In Indian culture, they symbolise **strength, wisdom, and prosperity**, deeply rooted in religion and folklore.
- India supports **over 60% of the global Asian elephant population**, making its conservation vital for the species' survival.

Distribution and Habitat

- Found across **four major landscapes**:
  - **Western Ghats**
  - **North Eastern Hills and Brahmaputra Plains**
  - **Shivalik Hills and Gangetic Plains**
  - **Central India and Eastern Ghats**
- **Major states:** Karnataka, Assam, Tamil Nadu, Kerala, Uttarakhand, and Odisha — together host over **80% of India's wild elephants**.

Major Threats

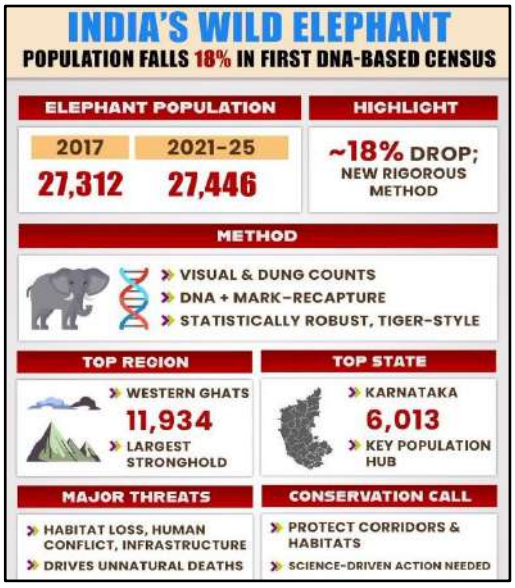
- **Habitat loss and fragmentation** due to farming, mining, and urban expansion.
- **Human-elephant conflict**, leading to deaths and crop loss.
- **Poaching** for ivory and **retaliatory killings**.
- **Infrastructure barriers** — highways, railways, and power lines block migration paths.
- **Invasive species and land-use changes** degrading habitats in key regions like the Western Ghats and Northeast.

Conservation Status

- Listed as **Endangered** on the **IUCN Red List**.
- Protected under **Schedule I** of the **Wildlife (Protection) Act, 1972**.
- Included in **CITES Appendix I**, banning international trade in elephant parts.

Government Initiatives

- **Project Elephant (1992):** Ensures long-term protection of elephants and habitats.
- **Elephant Corridors Programme:** Identifies and secures **101 migration corridors**.
- **Gaj Yatra Campaign:** Promotes awareness and human-elephant coexistence.
- **Technology use:** Satellite mapping, camera traps, and apps like **M-Stripes** for monitoring and conflict management.



India's First DNA-Based Elephant Census

- Conducted under **Synchronous All-India Elephant Estimation (SAIEE) 2021–25** by **MoEFCC, Project Elephant, and WII**.
- Used **genetic mark-recapture** techniques, collecting over **21,000 dung samples** from **20 states**.
- Identified **4,065 unique elephants**, extrapolating total population through scientific models.
- Covered **6.7 lakh km** of forest trails and **3.1 lakh dung plots** — ensuring accuracy without disturbing animals.

KEY FINDINGS

- **Total elephants:** 22,446 (range: 18,255–26,645)
- **Regional breakup:**
  - Western Ghats – 11,934
  - Northeast – 6,559
  - Shivalik & Gangetic Plains – 2,062
  - Central India & Eastern Ghats – 1,891
- **Top states:** Karnataka (6,013), Assam (4,159), Tamil Nadu (3,136), Kerala (2,785)

Conservation Implications

- Decline reflects both **methodological refinement** and **real habitat pressure**.
- Corridors disrupted by plantations, fencing, and infrastructure.
- Government urges **habitat restoration, stronger protection**, and **community-based conflict mitigation**.
- The DNA-based survey sets a **scientific benchmark** for future tracking under **Project Elephant 2.0**.

Conclusion

The decline in elephant numbers signals an urgent need for **landscape-level protection, conflict reduction, and inclusive conservation**, ensuring that India continues to be the **global stronghold of the Asian elephant**.

2. FAO HONOURS SUNDARBANS' SUSTAINABLE AQUACULTURE MODEL

Why in News?

- Recently, the **Food and Agriculture Organisation (FAO)** recognised the **Sustainable Aquaculture in Mangrove Ecosystems (SAIME)** project from the **Sundarbans** for its innovative blend of mangrove restoration and aquaculture.

About Sundarbans

- The **Sundarbans**, shared by **India and Bangladesh**, form the world's **largest mangrove delta** and a **UNESCO World Heritage Site**.
- In India, it spans **West Bengal's North and South 24 Parganas districts**, covering nearly 9,600 sq km.
- Millions rely on fishing, aquaculture, and honey collection for survival.
- However, **climate change, rising sea levels, and frequent cyclones** like Amphan and Yaas have severely affected both biodiversity and livelihoods.

Sustainable Aquaculture in Mangrove Ecosystems (SAIME)

- Developed by the **Nature Environment and Wildlife Society (NEWS)**, SAIME promotes **eco-friendly shrimp farming** while restoring mangroves.
- It combines **livelihood improvement with ecosystem conservation** through a community-based approach.

Key Features

- **Integrated Design:** Aquaculture ponds maintain **5%–30% mangrove cover**, supporting biodiversity and coastal protection.
- **Eco-friendly Feed:** Mangrove leaf litter acts as **natural fish feed**, reducing dependency on costly chemical inputs.
- **Profitability:** Implemented over **nearly 30 hectares**, farmers' net income **doubled** due to lower costs and better yields.

FAO's Global Recognition

- On **October 15, 2025**, during its **80th Anniversary and World Food Forum** in Rome, the **FAO** granted **Global Technical Recognition** to the SAIME model.
- The award celebrates it as a **replicable model for climate-resilient, community-based aquaculture**.

Benefits of the SAIME Model

- **Environmental:** Mangroves act as natural barriers against storms and erosion while enhancing **carbon capture**.
- **Economic:** Lower feed costs and higher productivity have improved **farmers' earnings**.
- **Social: Local participation** empowers communities and ensures ownership of conservation work.
- **Climate:** The model aids **carbon sequestration**, aligning with India's **Paris Agreement goals**.

Relevance to India's Blue Economy

- Supports India's **Blue Economy Policy**, which integrates **marine conservation with economic growth**.

- Contributes to several **UN Sustainable Development Goals (SDGs):**
  - **SDG 1 – No Poverty:** Through livelihood diversification.
  - **SDG 13 – Climate Action:** Enhancing resilience to climate risks.
  - **SDG 14 – Life Below Water:** Sustainable aquaculture practices.
  - **SDG 15 – Life on Land:** Restoration of mangrove habitats.

Broader Significance and Replication Potential

- The SAIME approach can guide **coastal states like Odisha, Andhra Pradesh, and Kerala**, where shrimp farming is widespread but ecologically fragile.
- Demonstrates that **economic development and environmental protection** can go hand in hand through **community ownership**.

Way Forward

- **Policy Integration:** Include mangrove conservation in all aquaculture frameworks.
- **Incentivisation:** Offer **carbon credits and subsidies** for eco-friendly practices.
- **Capacity Building:** Train coastal communities in **Good Aquaculture Practices (GAPs)**.
- **Scaling Up:** Expand sustainable aquaculture models nationwide for a **low-carbon, inclusive blue economy**.

Conclusion

The **Sundarbans SAIME model** proves that **sustainability and livelihood security** can coexist. Its global recognition by FAO sets a benchmark for **climate-smart aquaculture** and offers a blueprint for India's coastal resilience strategy.

II. Environmental pollution

1. INDIA'S E-WASTE MANAGEMENT

Why in News?

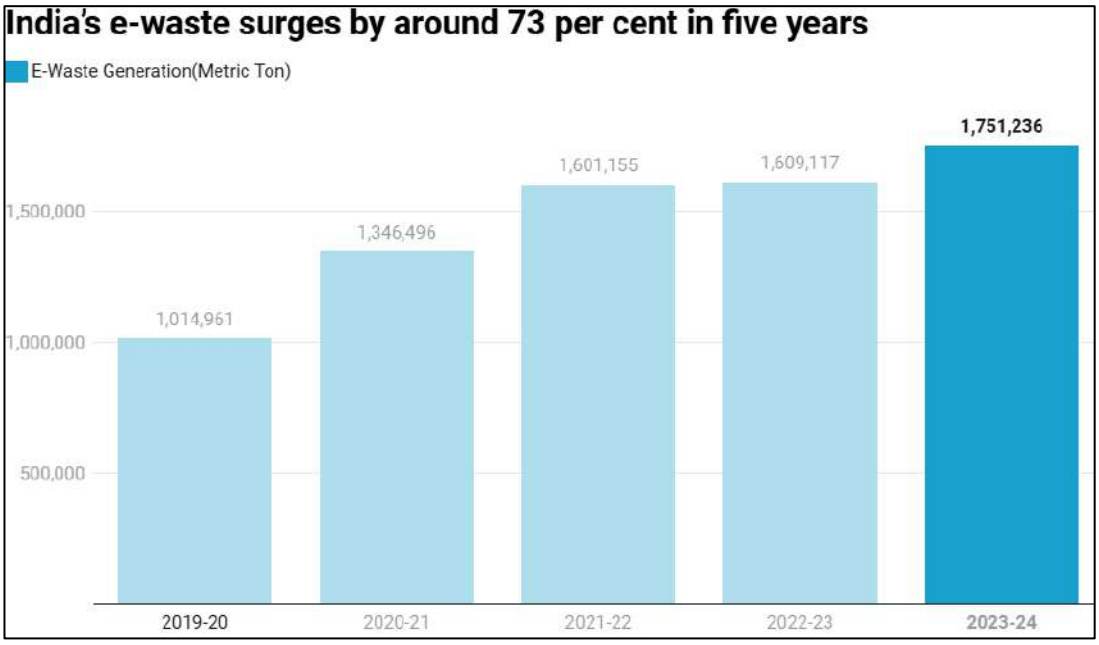
- India's rapidly expanding electronics market has led to a surge in e-waste generation, prompting the government to introduce new reforms and incentives to boost recycling and resource recovery.

What is E-Waste?

- E-waste includes discarded electronic items like smartphones, laptops, TVs, fridges, and chargers.
- Contains valuable metals (gold, silver, copper) but often dumped instead of recycled.
- Improper disposal poses **health risks** (lead, mercury, cadmium), **environmental harm**, and **economic losses**.

Importance of Effective E-Waste Management

- **Health:** Prevents soil, water, and air contamination, reducing chronic illnesses.
- **Environment:** Limits greenhouse gas emissions and ecosystem damage from hazardous recycling.
- **Economy:** Recovers precious metals, reducing import dependence and supporting domestic manufacturing.
- **Global Goals:** Aligns with **SDG 12** (Responsible Consumption) and **SDG 13** (Climate Action) and enhances India's **ESG compliance**.



Electronics Market and Consumption

- India has over **93.9 crore mobile broadband connections** but contributes only 4% to global consumption.
- Electronics industry projected to grow from USD 215 billion (FY19) to USD 540 billion (FY25), adding to e-waste.
- India generated **4.17 million tonnes of e-waste in 2022**, but only one-third processed formally.

Legal and Regulatory Framework

- **E-Waste (Management) Rules, 2022**, enforced from April 2023, govern disposal and recycling.
- **State Pollution Control Boards** conduct inventorying but methods are inconsistent.
- **Central Pollution Control Board** audits recyclers to formalize operations.
- **Extended Producer Responsibility (EPR):** Manufacturers must collect and recycle end-of-life products, especially metals like lithium, cobalt, copper, and aluminium.

Challenges in E-Waste Recycling

- **Informal Sector Dominance:** Repairs and component harvesting occur outside formal systems, hindering circular economy goals.
- **Traceability Issues:** Paper trading and overstated recycling volumes create gaps in accountability.
- **Technical Capacity:** Many recyclers lack proper metal extraction technologies.
- **Inventory Weakness:** India lacks systematic tracking from point of sale to end-of-life, unlike Western countries.

Opportunities and Future Potential

- Recycling could supply **up to 70% of India's rare earth needs** within 18 months if policies are strengthened.
- Formalization, audits, and better life-cycle tracking can make e-waste a key pillar of India's electronics and semiconductor ecosystem.
- Growth in recycling contributes to **resource security, environmental protection, and economic resilience**.

Conclusion:
India faces a growing e-waste challenge due to rapid electronics adoption, but effective management through **EPR, formalization, and recycling incentives** can turn this crisis into an opportunity for **sustainable industrial growth and strategic resource security**.

2. UNRELIABLE AIR AND NOISE DATA

Why in News?

- Recent revelations about **faulty air and noise monitoring systems** in Delhi and Lucknow have raised serious concerns over India's environmental data reliability.

Weak Monitoring Despite Heavy Investments

- India has set up large-scale networks to track pollution through programmes like the **National Clean Air Programme (NCAP)** and the **National Ambient Noise Monitoring Network**.
- These systems were designed to collect **real-time air and noise pollution data** to guide policies and protect public health.
- However, **audits and independent reviews** found major issues such as **faulty sensors, poor upkeep, and lack of data accuracy**.
- Many monitoring stations are either **malfunctioning or wrongly placed**, leading to misleading pollution readings.
- As a result, **environmental policies based on this weak data are often ineffective**, failing to address real pollution levels.

- This raises serious concerns about the **Right to Health and Clean Environment**, protected under **Article 21 of the Indian Constitution**.

Data Distortion:

- **Faulty Sensor Placement:** Several air-quality sensors in Delhi are installed in shaded or low-emission areas, giving artificially low readings.
- **Misleading Air Quality Index (AQI):** Official AQI data often reports "moderate" pollution while ground realities show severe smog.
- **Governance Breakdown:** Inaccurate data affects critical policies on stubble burning, vehicular restrictions, and industrial emissions.
- **Global Repercussions:** Such lapses weaken India's credibility in meeting its **Paris Agreement** and **WHO Air Quality Guideline** commitments.

Noise Pollution:

- **Malfunctioning Sensors:** Lucknow's noise monitoring stations often fail to record real levels due to faulty calibration.
- **Outdated Regulations:** India still follows the **Noise Pollution (Regulation and Control) Rules, 2000**, which fall short of global standards.
- **Poor Enforcement:** Penalties for violations are minimal; noise from traffic, airports, and loudspeakers remains unchecked.
- **Judicial Concern:** The **Supreme Court** recently transferred noise-related petitions to the **NGT**, reaffirming that excessive noise violates the **Right to Life and Health**.

Science Without Transparency

- **Technology Over Truth:** Governments showcase modern sensors but rarely ensure data validation or third-party audits.
- **Selective Data Sharing:** Pollution figures are sometimes downplayed to project compliance, misleading citizens.
- **Democratic Deficit:** Inaccurate data weakens public participation and delays urgent judicial or policy interventions.

Human Cost and Health Impact

- Air pollution reduces **life expectancy by nearly five years** on average across India.
- In Delhi, meeting **WHO air standards** could add more than **eight years of life expectancy**, according to the Air Quality Life Index.
- Pollution exposure leads to **respiratory diseases, asthma, and even eye disorders** such as early myopia in children.
- When monitoring fails, **policy failure translates directly into health loss**.

The Way Forward

- **Independent Audits:** Establish an autonomous authority to verify air and noise monitoring systems.
- **Transparent Data Sharing:** Public access to raw data should be mandatory for scrutiny by researchers and citizens.
- **Updated Regulations:** Align noise and air standards with **revised WHO guidelines**.
- **Citizen Oversight:** Community-based monitoring can ensure accountability.
- **Scientific Integrity:** Treat environmental monitoring as a **public health responsibility**, not a bureaucratic task.

Conclusion

Without **accurate data and independent oversight**, environmental governance risks becoming hollow. Real-time monitoring must serve the people, not deceive them — for clean air and silence are not luxuries, but **constitutional rights**.

3. STUBBLE BURNING IN PUNJAB

Why in News?

- Recent satellite data shows a reported decline in Punjab's stubble burning incidents this year, but the total area of farmland affected by fires has remained almost unchanged.

The Recurring Stubble Burning Issue

- Every year after the paddy harvest, farmers in Punjab and Haryana **burn crop residue** to prepare fields for the next wheat crop.
- The short time gap (about three weeks) between harvest and sowing leaves little room for manual or mechanical residue removal.
- Though burning is quick and cheap, it leads to **high emissions of PM2.5, carbon monoxide, and greenhouse gases**, worsening air pollution in Delhi-NCR and northern India.
- Despite multiple awareness drives and technology-based interventions, stubble burning remains one of **India's most persistent environmental problems**.

Trends and Contradictions in Data

- The Punjab government's 2024 satellite records show a **sharp drop in the number of fire incidents**, indicating fewer visible burnings.
- However, data from the **Punjab Remote Sensing Centre (PRSC)** and **Punjab Pollution Control Board (PPCB)** show that **the total burnt area has barely changed** compared to last year.
- This suggests that either each fire covers a larger area or that smaller fires are being **missed by current satellite detection systems**.

Understanding the Data Gaps

- Satellites like **MODIS and VIIRS** detect fires using heat signatures but pass over Punjab only a few times a day.
- Many small or short-duration fires, common in fragmented farms, go **undetected due to limited observation frequency, haze, or cloud cover**.
- A study by **IISER Mohali** found that farmers often **burn at night or under cover** to avoid detection.
- This results in **underreporting of actual burn cases**, making policy planning less accurate.

Technological Improvements in Monitoring

- New tools such as **Sentinel-2 optical sensors** can detect **burn scars and discolouration** post-fire, giving a better estimate of burnt area.
- Experts recommend combining **thermal, optical, and ground-based data** to improve accuracy.
- Integrated monitoring using drones, sensors, and satellites could close existing data gaps.

Policy Efforts and Challenges

- **Crop Residue Management (CRM) Machines** – providing happy seeders, mulchers, and straw choppers at subsidised rates.
- **Ex-situ use of stubble** – encouraging biomass power plants and ethanol units to use leftover straw.

- **Financial incentives and awareness campaigns** promoting in-situ management. However, experts say **short-term incentives and machinery subsidies** are not enough.
- A lasting solution needs **crop diversification, early paddy varieties**, and **better price support** for farmers using sustainable practices.

Rethinking How Progress Is Measured

- Counting the number of fire incidents alone does not show real progress.
- Future tracking should include **burnt area, emission levels, and fire intensity** to get a true picture.
- Reducing air pollution will require **integrated strategies** combining technology, economic support, and behavioural change at the grassroots.

Conclusion

Punjab's stubble burning challenge is evolving, not disappearing. While fewer fires are being detected, data gaps and unchanged burnt areas reveal that **monitoring must become more accurate and policies more farmer-focused**.

III. Renewable Energy

1. INDIA'S CLEAN ENERGY GROWTH AND CLIMATE FINANCE NEEDS

Why in News?

- India has become the world's third-largest solar power producer but a major climate finance gap risks slowing its clean energy transition.

India's Accelerating Clean Energy Transition

- India's clean energy expansion has been rapid, with significant solar and wind capacity additions.
- The sector is boosting jobs, GDP, and global leadership in renewables. Despite progress, the
- lack of sufficient climate finance could stall growth and affect energy security. change heading

Economic and Employment Impact:

- Solar and renewable growth: India emerged as a global leader in solar power, with wind energy also expanding.
- Employment generation: The renewable sector provides over one million jobs; off-grid solar alone employs tens of thousands.
- GDP contribution: Clean energy adds around 5% to India's economic growth.
- Global recognition: UN 2025 Climate Report and International Solar Alliance (ISA) highlight India's leadership in renewables.

Climate Finance Gap:

- Estimated funding need: Over $2.5 trillion by 2030 to meet national and 1.5°C climate targets.
- Critical areas: Battery storage, green hydrogen, grid infrastructure, sustainable agriculture, and transport electrification.
- Green bonds: Issuance rose significantly, but mainly dominated by large corporates; small firms face access challenges.
- Public finance shortfall: Government budgets alone cannot meet the growing investment needs.

Unlocking Climate Finance:

- **Public-private synergy:** Governments can use incentives, guarantees, and risk-sharing mechanisms to attract private capital.
- **Blended finance models:** Use partial guarantees, subordinated debt, and performance-based funding to improve investment viability.
- **Institutional capital:** Mobilise funds from pension, insurance, and social security institutions for green investments.
- **Policy tools:** Carbon trading, sovereign green bonds, and digital tracking (Blockchain/AI) can expand finance access.

Way Forward:

- Expand innovative finance mechanisms for MSMEs and renewable projects.
- Strengthen regulatory frameworks and ESG-based investments.
- Balance mitigation and adaptation financing for holistic climate action.

INDIA'S CLEAN ENERGY TRANSITION

Renewable Energy Capacity & Growth

- **Total renewable capacity**: Over **180 GW** installed (solar, wind, hydro, bio)
- **Solar capacity**: Surpassed **82 GW**, among the fastest-growing globally
- **Renewable electricity generation**: Rose from **205,608 GWh (2014–15)** to **370,320 GWh (2023–24)** at **6.76% CAGR**
- **Renewable potential**: Estimated at **21,09,655 MW**, led by wind and solar

Climate Goals & Commitments

- **Net-zero target**: By **2070** (announced at COP26)
- **Emission intensity reduction**: Target to cut **GDP emission intensity by 45% by 2030** (from 2005 levels)
- **Non-fossil capacity goal**: **500 GW by 2030**

Energy Mix & Challenges

- **Coal dominance**: Still contributes **79% of domestic energy supply** and **~70% of electricity generation**
- **Primary energy supply**: Increased by **7.8%**, reaching **9,03,158 KToE** in FY 2023–24
- **Per capita energy consumption**: Rose to **18,410 MJ/person**, up **25% in 10 years**

Conclusion:

India's renewable energy growth demonstrates economic and employment gains, but finance remains the key bottleneck. Expanding and innovating climate finance mechanisms is critical to sustain the country's clean energy momentum and meet global climate commitments.

2. THE CRITICAL FACTOR IN INDIA'S CLEAN ENERGY AMBITION

Why in News?

- India launched the **National Critical Mineral Mission (NCMM)** to reduce dependence on imported minerals like lithium and cobalt, crucial for achieving its 500 GW renewable energy target by 2030 and net-zero emissions by 2070.

Strategic Push for Mineral Self-Reliance

- India's clean energy dream rests on renewable technologies that rely heavily on **critical minerals** — the raw materials for **EV batteries, solar panels, and wind turbines**.
- Currently, **nearly all lithium, cobalt, and nickel** used in India are imported, making the nation's energy security vulnerable to **global market and geopolitical disruptions**.
- The focus now is to build a **self-reliant supply chain** through local mining, foreign tie-ups, and circular economy practices.

Critical Minerals and Their Role in India's Energy Transition

- **Enablers of Green Technology:** Essential for electric mobility, energy storage, and renewable power systems.
- **Rising Market Demand:** India's EV industry is expected to grow at **49% annually till 2030**, driving up mineral needs.
- **Battery Revolution:** The **battery storage sector**, valued at **$2.8 billion in 2023**, is expanding rapidly alongside renewable power integration.
- **Import Dependence:** Over **90% of India's lithium, cobalt, and REEs** are sourced from abroad — a major strategic risk.

Global Supply Chain Risks and China's Dominance

- **Monopoly Power:** China accounts for **60% of global REE output** and **85% of processing**, giving it control over supply chains.
- **Geopolitical Uncertainty:** Trade tensions and conflicts can disrupt access to these critical inputs.
- **Security Dimension:** These minerals are vital not only for energy but also for **defence and electronics**, making self-reliance essential.

India's Domestic Mineral Prospects

- **New Discoveries:** The Geological Survey of India found **5.9 million tonnes of lithium reserves** in Jammu & Kashmir in 2023.

- **Policy Reforms:** The **National Mineral Exploration Policy (2016)** and **MMDR Act (2021, 2023)** now allow **private and foreign participation** in exploration.
- **Active Auctions:** Over **20 critical mineral blocks** (lithium, graphite, REEs) have been auctioned, attracting major investments.
- **Resource-Rich States:** J&K, Rajasthan, Odisha, and Andhra Pradesh show strong potential for mineral extraction.

Challenges in Processing and Value Addition

- **Processing Gap:** India contributes **less than 1% of global REE production** due to weak refining capacity.
- **Need for Technology Partnerships:** Collaborations can bring expertise in refining and recycling.
- **Government Incentives:** Grants, subsidies, and R&D support are vital to develop **domestic refining and pilot production facilities**.

Building a Sustainable and Circular Mineral Economy

- **Waste as a Resource:** India generates **4 million tonnes of e-waste yearly**, but only **10% is recycled**.
- **Policy Push:** The **Battery Waste Management Rules (2022)** and **E-Waste Management Rules (2022)** promote recovery of valuable minerals.
- **Implementation Gaps:** Weak enforcement and limited infrastructure slow progress.
- **Circular Path Forward: Public-private recycling hubs** can enhance mineral recovery, lower costs, and reduce import dependency.

Government Initiatives and Strategic Moves

- **National Critical Mineral Mission (₹34,300 crore):** Strengthens the entire value chain — from exploration to recycling.
- **Institutional Roles:**
  - **NMDC:** Expanding mining through its Australian subsidiary.
  - **IREL (India) Ltd.:** Extracting REEs like neodymium and dysprosium.
  - **KABIL (Khanij Bidesh India Ltd.):** Acquiring overseas mineral assets.

Conclusion

With coordinated policy reforms, private participation, and global partnerships, India can evolve from a **mineral importer to a green technology leader**, powering a self-reliant and sustainable energy future.

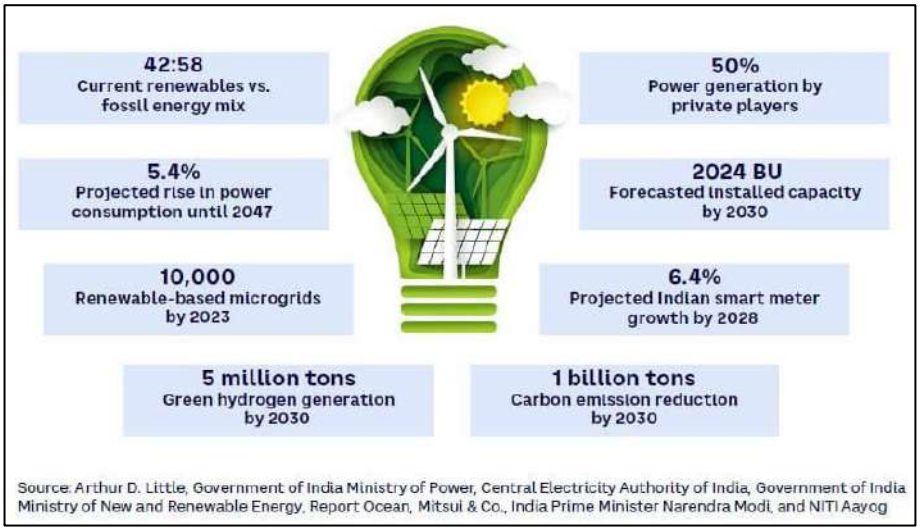
3. INDIA'S NEXT STEP IN THE GLOBAL SOLAR SUPPLY CHAIN

Why in News?

- India aims to boost solar exports to overcome high production costs and sustain its growth, India aims to boost solar exports.

India's Solar Power Growth

- **Historic Achievement:** India generated over **one lakh GWh** of solar energy in 2024–25, surpassing Japan.
- **Manufacturing Expansion:** Production capacity grew from a mere few GW in 2014 to nearly **100 GW by 2025**.
- **Global Ranking:** India is now **3rd largest solar producer**, behind only China and the USA.
- **Installed Capacity:** Over **117 GW of solar energy** capacity has been installed across the country.



India's 2030 Solar Vision

- **Clean Energy Target:** India aims for **50% of total electricity** to come from non-fossil sources by 2030.
- **Solar Contribution:** Around **250–280 GW** is expected from solar power.
- **Growth Requirement:** India must add **30 GW every year** to meet targets but currently adds 17–23 GW annually.
- **Key Challenge:** Bridging the gap through cost reduction, supply chain strengthening, and policy incentives.

Why Indian Solar Modules Are Costlier

- **China's Dominance:** China leads in raw materials, machinery, and economies of scale.
- **Import Dependence:** India still imports wafers, cells, and critical components.
- **Fragmented Industry:** Smaller firms and limited domestic innovation raise costs.
- **Export Gap:** India exported only a few GW of solar modules, while China exported **hundreds of GW**, maintaining global dominance.

The Way Forward:

- **Expanding Markets:** India must find new buyers for its solar modules beyond domestic demand.
- **Africa as a Partner:** Only **4% of African farmland** is irrigated due to energy shortages. India can supply **solar-powered pumps** and systems based on its **PM-KUSUM** model.
- **Leveraging ISA:** Through the **International Solar Alliance**, India can promote affordable solar access and strengthen South-South cooperation.
- **Diplomatic Advantage:** Exporting clean energy technology boosts India's global influence and supports climate-friendly diplomacy.

Model Schemes for Export Inspiration

- **PM-KUSUM Scheme:** Empowers farmers with solar pumps — replicable for African agriculture.
- **PM-Surya Ghar Scheme:** Encourages rooftop solar systems, ideal for decentralized power solutions in developing nations.

Conclusion

India's solar success marks a turning point in its clean energy journey. But to maintain momentum, it must **diversify markets and become a trusted global solar supplier**, especially to Africa. This will not only **secure its manufacturing ecosystem** but also **strengthen India's role in shaping the world's renewable future**.

IV. Global Warming and Climate Change

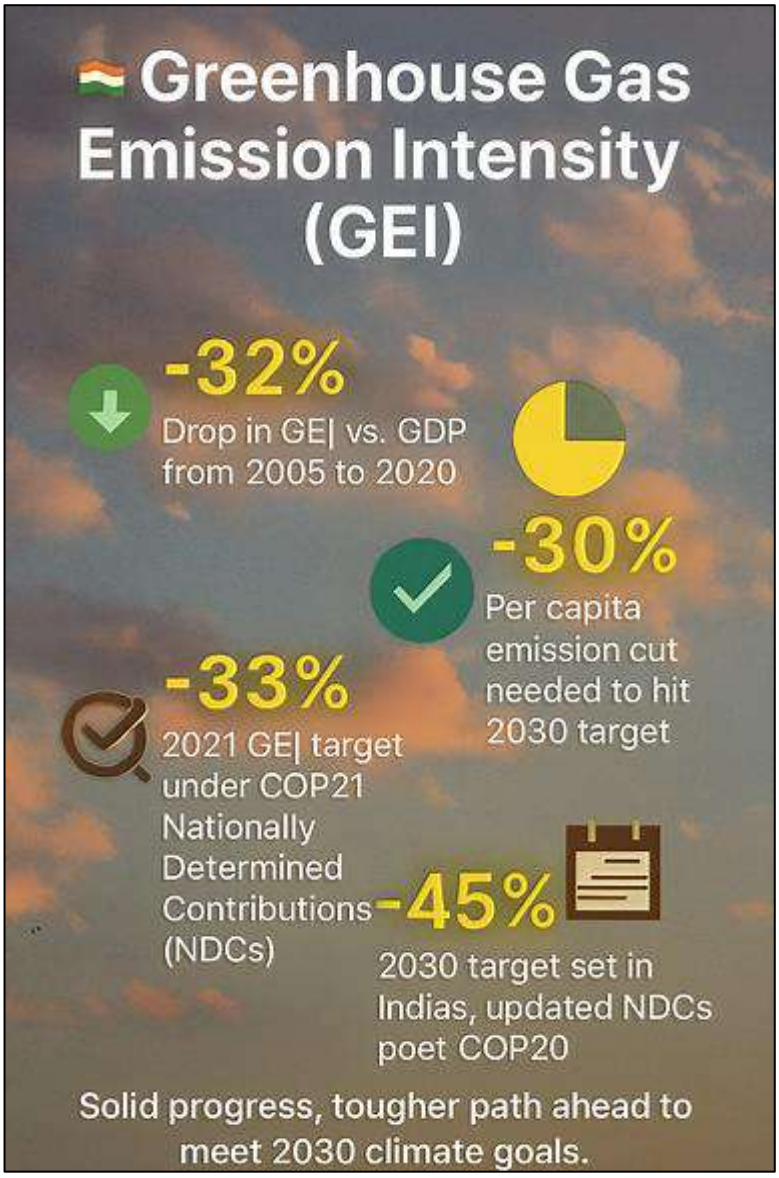
1. GREENHOUSE GAS EMISSION INTENSITY (GEI) TARGET RULES, 2025

Why in News?

- The **Union Ministry of Environment, Forest and Climate Change (MoEFCC)** has introduced India's **first legally binding Greenhouse Gas Emission Intensity (GEI) targets** for four key polluting industries like **aluminium, cement, chlor-alkali, and pulp & paper.**

Greenhouse Gas Emission Intensity (GEI)

- GEI refers to the **volume of greenhouse gases emitted per unit of production or output**. Example – emissions from producing one tonne of cement or aluminium.
- **Measurement Unit:** Expressed in **tonnes of carbon dioxide equivalent (tCO_2e)** per unit of product.
- **Included Gases:** CO_2, CH_4, N_2O, HFCs, PFCs, SF_6.
- It measures **how efficiently industries produce** while keeping emissions low — a key metric for sustainable growth.
- India has pledged to **cut its emission intensity of GDP by 45% by 2030**, compared to 2005 levels.



Key Features of GEI Target Rules, 2025

- **Objective:** Limit emissions **per unit of industrial output** and promote low-carbon technologies.
- **Sectoral Coverage:** Cement – 186 units, Aluminium – 13 units, Chlor-alkali – 30 units, Pulp & Paper – 53 units
- **Compliance Period: 2025–26 to 2026–27.**
- **Monitoring:** Targets expressed in **tCO_2e per unit of product**, verified by the **Bureau of Energy Efficiency (BEE).**
- **Incentive System:**NUnits that **meet or surpass** targets earn **carbon credits**.
- **Non-compliant** industries must **buy credits** or face **environmental penalties** under **CPCB** supervision.

Significance

- Shifts from **voluntary energy-saving schemes (PAT)** to **mandatory emission limits.**
- Encourages **clean technology adoption** and **industrial efficiency.**
- Creates a **market-based approach** to emission control, making carbon a **tradable economic asset.**
- Strengthens India's roadmap to achieve **net-zero emissions by 2070.**

CARBON CREDIT TRADING SCHEME (CCTS), 2023

- **Launched by:** Ministry of Power (2023).
- **Aim:** To set up a **domestic carbon market** for trading verified emission reductions.
- **Managed by: Bureau of Energy Efficiency (BEE)**, which issues **Carbon Credit Certificates (CCC).**
- **Mechanism:**
  - Industries with lower emissions gain credits.
  - Others purchase credits to balance excess emissions.
  - Trading happens through the **Indian Carbon Market (ICM)** platform.
- **Global Comparison:** Inspired by the **EU Emissions Trading System (2005)** and **China's National Carbon Market (2021).**

Conclusion

The **GEI Target Rules, 2025** mark a major transition in India's climate policy — from **energy efficiency** to **legally enforced carbon accountability**. By linking emissions with economic incentives, India is setting the stage for a **transparent and competitive carbon market**, aligning industrial growth with environmental sustainability.

2. WMO REPORT RECORDS CO_2 RISE IN 2024

Why in News?

- The World Meteorological Organization (WMO) reported that global carbon dioxide levels recorded their sharpest annual increase between 2023 and 2024, reaching the highest concentration ever observed in the atmosphere.

Record Surge in CO_2 Levels

- **Highest Annual Rise:** CO_2 concentrations rose by 3.5 ppm — the largest increase since records began in 1957.
- **Current Levels:** The global average of 423.9 ppm is **152% higher** than pre-industrial levels (278 ppm).
- **Consistent Growth:** Despite international efforts, CO_2 levels have increased steadily for over four decades without any yearly decline.
- **Accelerating Trend:** The annual rise has tripled — from 0.8 ppm per year in the 1960s to 2.4 ppm during 2011–2020 - and reached an unprecedented spike in 2024.

Causes of the Sharp Increase

- **Human-Induced Factors:**
  - Burning of fossil fuels for energy and transport.
  - Industrial processes and deforestation.
- **Natural Factors:**
  - **Reduced carbon absorption** by oceans and forests due to warming.
  - **Widespread wildfires** released additional CO_2.
  - **Droughts** and **heatwaves** lowered the carbon uptake capacity of vegetation.
- **Feedback Loop:** Global warming reduces natural absorption while increasing emissions — intensifying CO_2 buildup.

CO_2 and Other Greenhouse Gases (GHGs)

- **Dominance of CO_2:** Accounts for over 90% of accumulated GHGs and about 66% of total global warming since the industrial era.
- **Comparative Heat-Trapping Capacity:**
  - **Methane (CH_4):** 25 times stronger than CO_2 but lasts ~12 years.
  - **Nitrous Oxide (N_2O):** 270 times stronger, lasting over a century.
  - **CO_2:** Persists for hundreds to thousands of years, making its warming effect long-lasting.
- **2024 GHG Trends:**
  - **CH_4:** Rose to 1,942 ppb (below the decade average).
  - **N_2O:** Increased to 338 ppb, slightly slower than the previous decade's rate.

Implications of the WMO Findings

- **Crossed Critical Threshold:** 2024 marked the first year global temperatures remained **1.55°C above pre-industrial levels** for the entire year.
- **Weakening Carbon Sinks:** Forests and oceans — the planet's main CO_2 absorbers — are losing efficiency due to rising heat and droughts.
- **Policy and Climate Failure:** The findings expose the **limited success of the Paris Agreement (2015)**, as emission cuts are insufficient to meet the 1.5°C goal.
- **Future Risks:** Without deep emission cuts, the world faces irreversible impacts — such as melting ice caps, sea-level rise, extreme weather, and biodiversity loss.

GREENHOUSE GASES (GHGS)

Greenhouse gases are gases in the Earth's atmosphere that trap heat and keep the planet warm — a process called the **greenhouse effect**.

Main Greenhouse Gases:

- **Carbon Dioxide (CO_2)** – released from burning fossil fuels and deforestation.
- **Methane (CH_4)** – comes from livestock, rice farming, and landfills.
- **Nitrous Oxide (N_2O)** – released from fertilizers and industrial activities.
- **Ozone (O_3)** – found naturally in the atmosphere, but ground-level ozone is a pollutant.
- **Water Vapour (H_2O)** – the most abundant GHG, which increases with temperature.

How They Work:

- These gases trap some of the Sun's heat in the atmosphere, preventing it from escaping into space.
- This keeps Earth's surface warm enough to support life.

Conclusion

With CO_2 levels at their highest in human history and warming surpassing 1.5°C, the urgency for **global cooperation, renewable transition, and carbon sink restoration** has never been greater. The data underscores a defining truth — **climate inaction is no longer an option.**

V. Indian Initiatives, efforts and Commitments

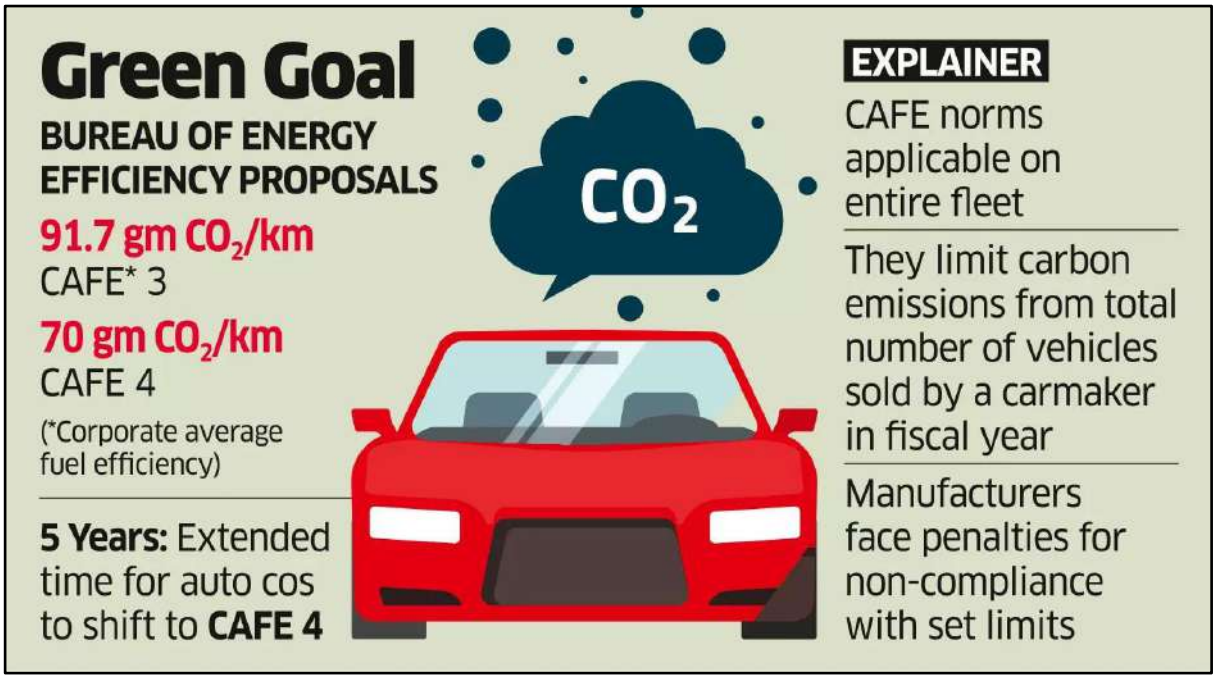
1. CAFE 3 NORMS TO PUSH GREEN MOBILITY

Why in News?

- India has released draft **Corporate Average Fuel Efficiency (CAFE) 3 norms** to tighten fuel efficiency and emission standards, promote electric and hybrid vehicles.

India's corporate average fuel efficiency (CAFE) framework

- CAFE norms aim to **reduce fuel consumption and CO_2 emissions** from passenger vehicles.
- Introduced by the **Bureau of Energy Efficiency (BEE) in 2017**, covering vehicles under 3,500 kg.
- Encourages **EVs, hybrids, CNG vehicles**, and reduces **oil dependency and air pollution**.
- CAFE 2 (2022-23) tightened standards: **fuel capped at 4.78 L/100 km** and **CO_2 emissions at 113 g/km**, with penalties for non-compliance.



Need for CAFE 3

- India's current norms **favor heavier SUVs** over small cars, unlike **USA, EU, China, Japan**.
- Small cars face stricter emission targets, discouraging production and sales.
- CAFE 3 seeks to **align with global practices** and **revive the small car segment**.

Key Features of Proposed CAFE 3

Applicability and Penalties

- Covers **M1 passenger vehicles**: max 9 seats, max weight 3,500 kg.

- **Non-compliance** attracts penalties under **Energy Conservation Act, 2001**.

Efficiency Targets

- Formula: **[0.002 × (W – 1170) + c]**, measured in petrol-equivalent litres/100 km.
- 'c' decreases from **3.7264 in FY28** to **3.0139 in FY32**, making standards stricter over time.
- **Lighter vehicles** find it easier to comply than SUVs.

Incentives for Small Cars

- Relaxation of **3 g CO_2/km**, capped at 9 g/km for compact cars (≤909 kg, engine ≤1,200 cc).
- Small car revival supported by **GST reduction from 28% to 18%**.

Boost for EVs and Alternative Fuels

- **Super credits:** EVs counted 3x, plug-in hybrids 2.5x, strong hybrids 2x, ethanol cars 1.5x.
- **Carbon Neutrality Factor (CNF):** further emission relaxations based on fuel type.
- **Pooling:** Up to three manufacturers can **combine targets**, reducing compliance costs.

Expected Benefits

- Reduce **oil imports** and **carbon emissions**.
- Encourage **green mobility adoption**, EV production, and small car sales.
- Align India's policies with **Paris Agreement commitments**.

Challenges

- Industry adaptation to stricter norms.
- Consumer acceptance of small and electric vehicles.
- Infrastructure readiness for **charging and alternative fuels**.

Conclusion

CAFE 3 norms aim to **revive small cars, incentivise EVs, and tighten long-term efficiency standards**, supporting India's climate goals and reducing oil dependency. Successful implementation depends on **industry adaptation, consumer acceptance, and alternative fuel infrastructure readiness**.

C. DISASTER MANAGEMENT

I. Disasters and their management

1. INDIA'S NEW STRATEGY TO PREVENT CROWD DISASTERS

Why in News?

- Recently, a deadly crowd crush at a political rally in Tamil Nadu's Karur district claimed several lives, prompted for stronger, science-based crowd management systems and enforceable safety laws.

Background

- India has witnessed several fatal crowd disasters at **political, religious, and cultural gatherings** over the years.
- Such tragedies often result from **poor planning, lack of coordination, and absence of real-time monitoring systems.**

- Recognising this, central and state agencies are updating guidelines and laws to ensure structured crowd management.

National Framework for Crowd Management

Central Guidelines and Institutional Support

- In **2025**, the **Bureau of Police Research and Development (BPR&D)** issued Comprehensive Guidelines on Crowd Control and Mass Gathering Management.
- The guidelines emphasize **scientific planning**, crowd density control, emergency routes, and training for police and event organisers.
- The **National Disaster Management Authority (NDMA)** continues to implement its **2020 framework**, focusing on pre-event risk assessment, entry–exit management, and communication systems.
- The **National Institute of Disaster Management (NIDM)** has introduced training modules on managing mass gatherings.

Railway and Public Venue Reforms

- After a **February 2025 crush at a Delhi railway station**, Indian Railways upgraded safety manuals for 60 stations.
- Key features include **holding zones, dispersal areas, barricades, and live monitoring systems.**

State-Level Legal Measures

Karnataka's New Law

- Following the **June 2025 Bengaluru stadium stampede**, Karnataka introduced the **Crowd Control (Managing Crowd at Events) Bill, 2025.**
- It assigns responsibility to event organisers, empowers district officials to regulate gatherings, and provides penalties for safety violations.

Other State Initiatives

- **Uttar Pradesh (2023)** issued state guidelines for managing religious congregations.
- **Uttarakhand** ordered updated safety plans and removal of encroachments at major temples after the **Haridwar tragedy (2025)**.
- **Maharashtra** empowered the **Nashik–Trimbakeshwar Kumbh Mela Authority** to plan temporary infrastructure for large gatherings.

Scientific and Preventive Measures

- Research shows that danger increases when crowd density exceeds five persons per square metre.
- Best practices include:
  - Avoiding **bottlenecks, slopes, and counter-flows**.
  - Using **drones, CCTV, and computer-linked monitoring** to assess crowd pressure in real time.
  - Establishing **multiple exits, one-way routes, and clear signage.**

Safety Advice for Individuals

- Move diagonally towards open spaces rather than pushing through crowds.
- Keep **arms across the chest** to protect breathing space.
- Avoid rigid barriers and avoid stopping for dropped items or filming videos.
- If fallen, **roll sideways and stand quickly** to avoid further pressure.

Challenges Ahead

- Most safety directions remain **advisory**, lacking legal enforcement.
- Coordination among local police, event organisers, and civic bodies remains inconsistent.
- Need for **uniform, legally binding crowd management legislation** across states.

Conclusion

India's crowd management approach is evolving from reactive policing to a **scientific, preventive, and legal framework.** While guidelines and training are improving, **consistent implementation and nationwide legal backing** are essential to prevent future tragedies and ensure public safety at mass gatherings.

D. SCIENCE AND TECHNOLOGY

I. Developments and their Applications and Effects in Everyday Life.

1. INDIA–US NUCLEAR ENERGY LIABILITY LAWS

Why in News?

- During recent **India–US trade talks in New York**, both sides discussed cooperation in **nuclear energy and small modular reactor (SMR) technologies**.

Push for Nuclear Cooperation

- India aims to **diversify its clean energy mix** and reduce carbon emissions by expanding nuclear power capacity.
- The U.S. has shown interest in partnering on **next-generation nuclear technologies**, including **SMRs**, as part of broader strategic and energy cooperation.
- But **legal and regulatory bottlenecks**, especially under India's liability framework, remain the main roadblocks.

US Regulatory Clearance:

- In **March 2025**, the **U.S. Department of Energy (DoE)** granted **Holtec International** clearance under **10CFR810** regulations.
- This allows Holtec to **share unclassified SMR designs** with Indian firms such as **Tata Consulting Engineers** and **L&T** through its Indian subsidiary, **Holtec Asia**.
- The clearance removes a **major U.S. regulatory barrier**, paving the way for technology transfer.
- Now, the responsibility lies with **India** to reform its domestic laws to enable actual project implementation.

India's Liability Law

- The **Civil Liability for Nuclear Damage Act (CLNDA), 2010**, gives operators a **"right of recourse"** under **Section 17(b)** to recover compensation from suppliers if defective equipment causes an accident.
- Foreign vendors like **Westinghouse (U.S.)** and **Framatome (France)** consider this clause **too harsh** compared to global norms.
- The **broad definition of "supplier"** also makes smaller Indian vendors cautious, fearing unlimited financial exposure.

Proposed Legal Amendments

India is preparing **11 amendments** to make the CLNDA more investor-friendly:

- **Revising Section 17(b):** To align with global conventions and limit supplier liability.
- **Defining "supplier" clearly:** To exclude small sub-contractors from automatic liability.

- **Capping liability:** Setting upper limits on compensation amounts and time periods.
- **Regulatory oversight:** The **AERB** will review contracts to ensure accountability while protecting vendors.

Opening Nuclear Power to Private & Foreign Players

- The government plans to **amend the Atomic Energy Act, 1962**, which currently reserves nuclear power generation for public sector undertakings like **NPCIL**.
- Proposed changes will:
  - Allow **private participation** in nuclear energy generation.
  - Permit **foreign equity stakes** in future projects.
  - Boost capacity through **joint ventures** and **private investment** in advanced reactors.

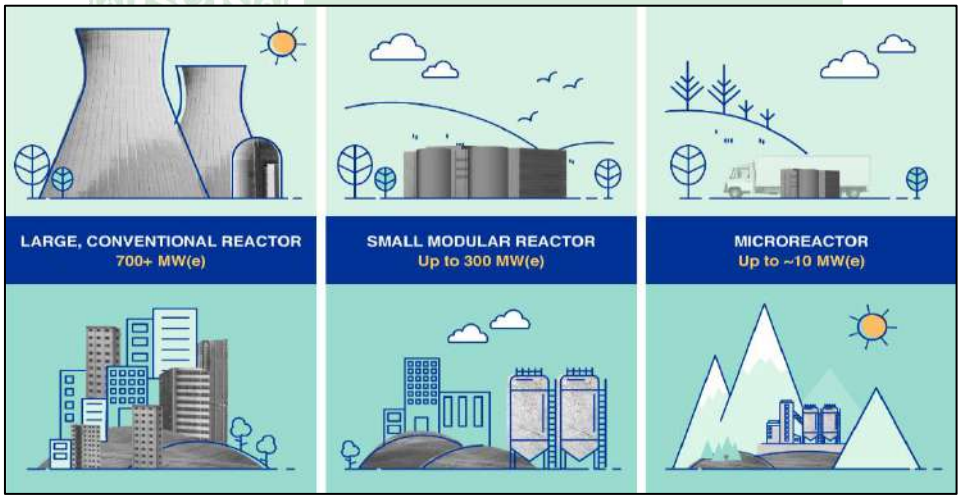
Aligning with Global Liability Standards

- India seeks to harmonise its framework with the **1997 Convention on Supplementary Compensation (CSC)**, to which it became a party in **2016**.
- The amendments aim to make India's laws **consistent with international standards**, improving investor confidence and enabling cross-border cooperation.

Political Consensus

- Despite economic urgency, the **CLNDA amendments** require **Parliamentary approval**, which remains politically sensitive.
- Delays in building consensus may **postpone reforms beyond the monsoon session**, slowing nuclear collaboration further.

SMALL MODULAR REACTORS (SMRS)



- **Compact Nuclear Plants:** SMRs are **small-sized nuclear reactors** that generate less power than traditional ones but are **safer and easier to build**.
- **Cost & Safety Advantage:** They can be **assembled in factories and transported** to sites, reducing costs and construction time, while using **advanced safety systems** that shut down automatically in emergencies.
- **Clean Energy Option:** SMRs can provide **steady, low-carbon electricity** for remote areas or industrial use, supporting India's goal of **clean and reliable energy**.

Conclusion

By **aligning domestic laws with global norms** and **opening the sector to private participation**, India can unlock foreign investment, boost clean energy output, and revive the long-stalled **civil nuclear cooperation** envisioned under the 2008 agreement.

2. AN ENGELS' PAUSE IN AN AI-SHAPED WORLD

Why in News?

- Recent studies shows Artificial Intelligence (AI) is **rising productivity but stagnant wages**, signalling a possible repeat of the ***"Engels' Pause".***

What is Engels' Pause

- The term **"Engels' Pause"**, introduced by economist **Robert Allen**, refers to 19th-century Britain, where **industrial production rose sharply**, but **wages remained stagnant** and inequality deepened.
- Today, **AI is seen as a new Industrial Revolution**, offering immense productivity gains but also raising fears of **unequal wealth distribution** and **job displacement**.
- Thinkers like **Geoffrey Hinton** warn that AI could **make a few rich while leaving many poorer**, echoing the earlier industrial paradox.

Why This Matters Today

- A **Stanford study** found young workers most at risk of AI-driven job losses.
- In India, an IT giant recently **laid off over 12,000 employees** due to automation.
- While **PwC projects AI will add $15.7 trillion** to global GDP by 2030, most of the benefits are **concentrated in the U.S., China, and a few firms**.
- The pattern mirrors early industrialisation — **high profits, low wages, and weak welfare spread**.

Signs of a Modern "Engels' Pause"

- **Rising Productivity, Flat Wages:** Example: Philippine call centres saw 30–50% efficiency gains but **no rise in salaries**.
- **High Adaptation Costs:** Workers now face **costly retraining and technology access**, widening inequality.
- **Unequal Benefits:** IMF (2024) warns **40% of jobs globally are AI-exposed**, with the richest nations gaining most.
- **Growing Wage Gap:** Similar to tech races in India where **stronger patent laws** increased income inequality.

How Governance Can Break the Pause

- **Reskilling and Education:** Initiatives like **Singapore's SkillsFuture** and **UAE's MBZUAI** show the value of lifelong learning.
- **Redistribution Mechanisms:** Ideas like **robot taxes** and **Universal Basic Income (UBI)** can redirect AI profits to social welfare.
- **Public AI Infrastructure:** Open-access platforms such as **K2Think.ai** (UAE) promote inclusive innovation.
- **Inclusive Policies:** Democratise access to data, cloud, and computing; ensure **ethical AI use** in governance.

Why This Time May Differ

- **Better Welfare Systems:** Modern democracies already have **social safety nets**.
- **Faster Tech Reach:** AI tools, like smartphones, may reach billions quickly.
- **Social Potential:** AI can reduce costs in **healthcare, education, and energy**, if equitably used.

India's Context

- **NITI Aayog's "AI for All" (2018)** focuses on using AI for **healthcare, agriculture, and education**.
- **IndiaAI Portal (2023)** serves as a hub for research and policy guidance.
- **NASSCOM's FutureSkills Prime** aims to **reskill 2 million professionals** in emerging tech.

Conclusion

AI's benefits will reach everyone only through **inclusive governance, fair redistribution, and continuous reskilling**. India must design policies that make AI **a force for human welfare**, not just for productivity ensuring growth with **equity, ethics, and trust**.

3. INDIA DRAFTS AI CONTENT LABELLING RULES TO COMBAT DEEPFAKES

Why in News?

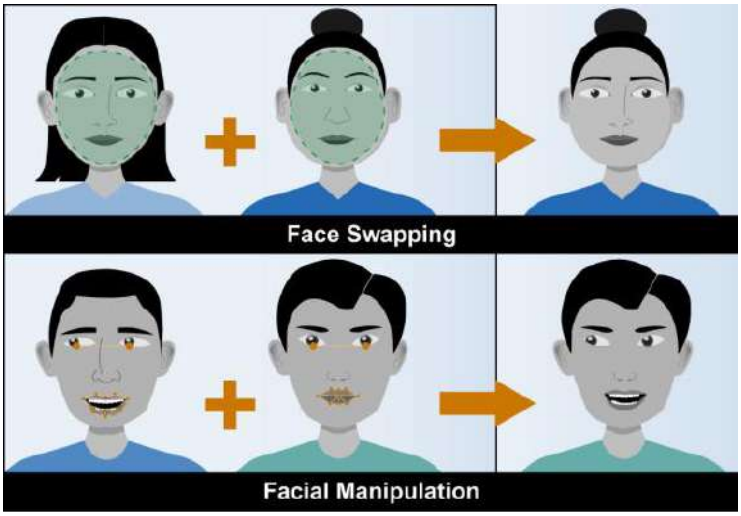
- The Government of India has proposed amendments to the **Information Technology Rules, 2021**, requiring social media platforms to **label AI-generated and deepfake content**.

Rise of Deepfakes and Digital Deception

- Deepfakes are **AI-generated or modified content** that imitate real people's faces, voices, or actions, often spreading misinformation.
- Incidents like the **Rashmika Mandanna deepfake** sparked national concern after going viral.
- Prime Minister Narendra Modi termed deepfakes a **new digital threat**, urging strong preventive frameworks.
- The Ministry of Electronics and IT (MeitY) is introducing **labelling mandates** to ensure transparency and authenticity in digital communication.

Key Features of the Draft AI Labelling Rules

- Platforms like YouTube, Instagram, and X must ask users to **declare if uploaded content is AI-generated or synthetic**.
- Such content must carry **visible or audible labels** — covering part of the screen or playing during audio duration.
- Companies must use **automated tools** to detect and verify false declarations.
- Failure to comply could lead to **loss of "safe harbour" protection** under Section 79 of the IT Act, making platforms legally accountable.
- The rules also introduce a definition for *synthetically generated information* — digital content altered by algorithms to appear real.



Existing Global and Indian Practices

- **Meta, Google, and YouTube** already use AI content tags like "AI Info" or "Altered or Synthetic Content," but enforcement remains weak.

- India's proposal is **stricter and preventive**, requiring **proactive detection** before content spreads, unlike global systems that act after flagging.
- The framework aligns with global trends:
  - **EU AI Act:** Mandatory disclosure of all AI-generated content.
  - **China:** Requires clear visible or hidden markers for all AI media.
  - **Denmark:** Proposes giving individuals ownership rights over their digital likeness.

Deepfake Threat to the Film Industry

- Bollywood celebrities such as **Amitabh Bachchan, Aishwarya Rai, and Akshay Kumar** have raised alarms over **AI misuse of voice and image**.
- The **Raanjhanaa** incident, where AI altered a film's ending without consent, showcased the legal vacuum in **personality and image rights**.
- India currently depends on general laws under the **Copyright Act and IT Act**, lacking a dedicated legal framework for AI-generated misuse.

Significance of the Move

- Builds **trust in digital content** and safeguards against misinformation.
- Promotes **responsible AI governance** while preserving **freedom of expression**.
- Enhances **citizen protection** against defamation and identity theft in the digital era.
- Positions India among **global leaders** developing ethical standards for AI regulation.

Conclusion

The proposed AI labelling rules mark a **progressive step toward transparent and accountable AI governance**. By making digital content traceable and authentic, India seeks to balance **innovation with ethics**, ensuring technology serves society — not manipulates it.

II. Achievements of Indians in Science & Technology

1. INDIAN ARMY INDUCTS 'SAKSHAM' COUNTER-UNMANNED AERIAL SYSTEM (CUAS) GRID

Why in News?

- The **Indian Army** has begun inducting **'Saksham'**, an indigenous **Counter-Unmanned Aerial System (CUAS) Grid**, aimed tackling the growing threat of enemy drones and unmanned aerial vehicles (UAVs).

Background and Context

- The use of drones for **surveillance, smuggling, and attacks** has risen sharply, especially along sensitive borders and high-value defence zones.
- The need for a **comprehensive anti-drone network** became evident after **Operation Sindoor**, which highlighted air defence gaps in low-altitude zones.
- 'Saksham' has been designed to protect the **Tactical Battlefield Space (TBS)** — the airspace up to about **3,000 metres (10,000 ft)** — from aerial intrusions.

About the 'Saksham' CUAS Grid

- **Developer:** Jointly developed by the **Indian Army** and **Bharat Electronics Limited (BEL), Ghaziabad**.
- **Procurement Mode:** Approved under **Fast Track Procurement (FTP)**, ensuring quick induction.

- **Alignment:** Supports the Army's **"Decade of Transformation (2023–2032)"** and the **Make in India** defence initiative.
- **Full Form: SAKSHAM** – *Situational Awareness for Kinetic Soft & Hard Kill Assets Management*. It serves as a **Command-and-Control (C2)** platform integrating surveillance systems, sensors, and weapons under one grid.

Key Features and Capabilities

- **Comprehensive Detection:** Tracks drones using **radar, radio-frequency scanners, and EO/IR (Electro-Optical/Infrared) sensors**.
- **AI-Enabled Analytics:** Uses **Artificial Intelligence** to predict drone behaviour and suggest the most effective countermeasure.
- **Fusion Technology:** Combines **soft-kill** (jamming, spoofing) and **hard-kill** (kinetic interceptors, directed energy weapons) systems.
- **3D Airspace Visualisation:** Displays a **Recognised UAS Picture (RUASP)** showing all aerial activities in real time.
- **Network Integration:** Linked to the **Army Data Network (ADN)** and the **Akashteer Air Defence Control System** for seamless coordination.
- **Mobility:** Compact, modular, and easily deployable in diverse terrains — from deserts to high-altitude zones.
- **Automation:** Offers **real-time command support** for quick decision-making in combat situations.

Significance and Strategic Importance

- **National Security:** Strengthens India's capability to **detect and neutralise hostile drones** used for surveillance or weapon delivery.
- **Operational Efficiency:** Enhances **battlefield awareness and response time** in modern hybrid warfare.
- **Self-Reliance:** Fully indigenous development demonstrates India's growing **technological autonomy in defence**.
- **Future Expansion:** Can be integrated with other services' air defence networks to form a **unified counter-UAV grid**.

Conclusion

The induction of **'Saksham' CUAS Grid** marks a significant leap in India's **counter-drone warfare capabilities**. It embodies the spirit of **Atmanirbhar Bharat** and prepares the Indian Army for **next-generation aerial threats**.

III. Medical science/vaccines/diseases

1. 2025 NOBEL IN MEDICINE: REDEFINING THE IMMUNE SYSTEM

Why in News?

- Recently, the 2025 Nobel Prize in Physiology or Medicine was awarded to Mary Brunkow, Fred Ramsdell, and Shimon Sakaguchi for discovering regulatory T-cells (Tregs) and the FOXP3 gene, which maintain immune self-tolerance.

Redefining the Immune System

- This work has reshaped our understanding of the immune system and paved the way for precision immunotherapy.
- **Previous Understanding:** Immune system was seen as binary – attacking invaders or ignoring the body's own cells.
- **Breakthrough Discovery:** Tregs act as "immune regulators," preventing overreaction and autoimmunity.
- **FOXP3 Gene Role:** Mutations in FOXP3 cause severe autoimmune diseases in humans and mice, proving its central role in immune self-regulation.

Key Milestones in the Discovery

- **Sakaguchi (1995):** Identified $CD4^+$ T-cells in mice that prevented autoimmune disorders. Removing them triggered disease.
- **Brunkow & Ramsdell:** Linked FOXP3 gene mutations to fatal autoimmune conditions in mice and humans.
- **Human Correlation:** Validated Tregs' role in human immune balance, confirming relevance beyond lab studies.

Therapeutic Implications

- **Autoimmune Diseases:** Expanding or stabilizing Tregs can control harmful immune responses without general immunosuppression.
- **Transplantation:** Engineered Tregs improve graft acceptance and reduce organ rejection.
- **Cancer:** Selective targeting of tumor-associated Tregs enhances anti-tumor immunity while minimizing autoimmunity.

Challenges in Translation

- **Complexity:** Immune system has multiple regulatory layers; translating discoveries into therapy is gradual.
- **Cost & Accessibility:** Cell-based treatments are expensive, limiting access for low-income populations.
- **Ethical Questions:** Regulation of genetic modification and equitable access remain major concerns.

Innovation and Policy Lessons

- **Private Sector Contribution:** Brunkow and Ramsdell made their discoveries in industry labs, highlighting the role of private research.
- **Public-Private Synergy:** Collaboration between academia and biotech accelerates discovery and application; a model India can adopt.
- **National Relevance:** Rising autoimmune diseases in India call for local immunogenetic research. Affordable therapies can support Ayushman Bharat and biotechnology strategies.

Broader Implications

- **Global Health:** Marks a new era of personalized, precise immunotherapy integrating molecular biology, ethics, and equity.

- **Conceptual Shift:** Immunity is now seen as a balance of attack and restraint, not merely defense.
- **Future Directions:** Encourages research in molecular precision, ethical responsibility, and equitable healthcare delivery.

Conclusion:
The 2025 Nobel Prize highlights that scientific progress lies in understanding the body's internal balance. Tregs and FOXP3 have rewritten immunology, inspired new therapies, and emphasized the importance of merging science, ethics, and social justice.

IV. Indigenization of Technology and Developing New Technology.

1. IAF RESTRUCTURES FIGHTER FLEET AFTER MIG-21 RETIREMENT

Why in News?

- On **September 26, 2025**, the **Indian Air Force (IAF)** officially **retired its last two MiG-21 squadrons** this marks the **end of India's longest-serving fighter jet**.

End of an Era: MiG-21's Legacy

- The **MiG-21**, inducted in **1963**, was once India's most advanced interceptor aircraft.
- It played key roles in the **1965, 1971, and Kargil wars**, earning a reputation for reliability and agility.
- Over **700 MiG-21s** were acquired, with later **Bison upgrades** adding radar and missile enhancements.
- Despite its success, the aircraft's **high accident record**—over **500 crashes and 170 pilot deaths**—made it controversial.
- Many veterans, however, credit the MiG-21 for its **longevity and combat effectiveness** despite its age.

Fighter Squadron Shortfall:

- After the MiG-21 phase-out, the IAF's operational strength stands at **29 fighter squadrons**, far below the **sanctioned 42**.
- This shortfall is alarming given the **two-front challenge** from **Pakistan (20–25 squadrons)** and **China (60+ squadrons)**.
- The gap is expected to **widen further** by 2035 as older aircraft such as **MiG-29s, Jaguars, and Mirage 2000s** are retired.
- Without rapid induction of new fighters, India risks **reduced air dominance** in the region.

Air Defence as a Stopgap

- To counter the shrinking fleet, the IAF has boosted its **air defence network**.
- **S-400 Triumf systems** (from Russia) and **indigenous Akashteer air-defence systems** have been deployed nationwide.
- These systems proved effective during **Operation Sindoor**, acting as crucial deterrents until more fighters join service.

Rebuilding the Fleet: Indigenous Efforts

- **Tejas Mk1 & Mk1A:**
  - The IAF currently operates **two Tejas Mk1 squadrons** and has ordered **180 upgraded Mk1A jets** from HAL.
  - Mk1A includes **AESA radar**, **electronic warfare suites**, and **ASTRA/Derby missile capability**.

- **Tejas Mk2 & AMCA:**
  - HAL is developing the **Tejas Mk2** and **Advanced Medium Combat Aircraft (AMCA)**, a stealth fighter, for future induction.
  - Both are expected to enter service in the **next decade**.

Global Fighter Procurement & Upgrades

- The IAF plans to buy **114 multirole fighters** under the **MRFA project**, with **Rafale** emerging as a likely choice.
- Some jets may arrive in **flyaway condition**, while others will be **manufactured in India**, boosting defence manufacturing.
- **Su-30MKI "Super-30" upgrade** aims to enhance 84 existing aircraft with new avionics and weapons, extending their lifespan.

Persistent Delays and Challenges

- **LCA Program Delays:** Only **38 of 40 Tejas Mk1s** have been delivered; Mk1A deliveries start in **October 2025**, two years late.
- **Engine Issues:** Slow progress in **GE-HAL F414 engine co-production** is delaying the Mk2 timeline.
- **AMCA & MRFA Uncertainty:** Both projects are still **in early stages**, risking further decline in squadron strength.

Conclusion

The **retirement of the MiG-21** symbolizes both **technological progress** and **strategic vulnerability**.

E. SECURITY

I. Linkages between development and spread of extremism

1. DECLINE OF THE MAOIST MOVEMENT IN INDIA

Why in News?

- After nearly sixty years since the Naxalbari uprising, India's Maoist (Left-Wing Extremism) movement is witnessing a steep decline.

Background of the Maoist Movement

- The Maoist insurgency traces its roots to the **Naxalbari uprising of 1967** in West Bengal, led by **Charu Mazumdar and Kanu Sanyal**.
- It emerged as a **peasant revolt** against feudal oppression, inspired by **Mao Zedong's ideology** of armed revolution.
- The movement later spread to several central and eastern Indian states — **Andhra Pradesh, Chhattisgarh, Jharkhand, Odisha, and Bihar** — forming what was called the *"Red Corridor."*
- The **CPI (Maoist)** was officially formed in **2004**, merging the People's War Group and the Maoist Communist Centre, with the goal of overthrowing the Indian state through guerrilla warfare.

Reasons for the Decline of the Movement

Sustained Security Operations

- Coordinated operations by central armed forces and elite state police units have dismantled key Maoist bases.
- Major leaders, including the top command, have been **killed or captured**, disrupting organisational networks.
- The number of affected districts has fallen from **nearly 180** in the 2000s to **less than 40** today.

Erosion of Ideological Appeal

- Maoist ideology has failed to adapt to changing social and economic realities.
- As **tribal regions gain education, jobs, and welfare benefits**, the revolutionary message no longer resonates.
- Youth prefer stable livelihoods over a life of violence and uncertainty.

Weak Recruitment and Aging Cadre

- Non-tribal recruitment stopped over a decade ago, and even tribal youth are hesitant to join.
- Most senior Maoist leaders are now elderly and suffering from health problems, making active leadership difficult.

Government Development and Connectivity Efforts

- Increased road connectivity, schools, healthcare, and digital access in remote tribal belts have bridged the isolation Maoists once exploited.
- Welfare programs and rehabilitation packages have encouraged **surrenders and reintegration** into society.

Internal Divisions and Calls for Peace

- Ideological splits have surfaced within the CPI (Maoist).
- Senior leader **Mallojula Venugopal Rao** has urged ending armed struggle, while others reject the idea, showing growing internal rifts.

The Current Situation

- Maoist presence today is limited to **pockets of Bastar, Dandakaranya, and the Chhattisgarh–Telangana border**.
- Arms and supply shortages have further reduced their operational strength.
- Over **1,000 cadres surrendered in 2025 alone**, reflecting loss of morale and organisational breakdown.

Conclusion:
The Maoist insurgency complete elimination may take time through combination of **strong security action, development-led governance, and internal disillusionment**.

GENERAL STUDIES - 4

ETHICS, INTEGRITY AND APTITUDE

I. Ethics and Human Interface

1. DOES INDIA HAVE A COUGH SYRUP PROBLEM?

Why in News?

- Toxic cough syrups produced in India have caused child deaths in **Madhya Pradesh and Rajasthan**, after similar global tragedies in **The Gambia, Uzbekistan, and Iraq**, raising serious concerns over **drug safety, ethics, and regulatory negligence** in India's pharmaceutical sector.

Recurring Pattern of Cough Syrup Tragedies

- **Repeated Contamination:** India has witnessed several DEG poisoning cases — from **Chennai (1973)** to **Gurugram (2020)** and abroad in **The Gambia and Uzbekistan (2022)**.
- **Cost-cutting Practices:** Use of **industrial-grade solvents** instead of pharmaceutical-quality ones to reduce costs.
- **Lack of Reform:** Investigations often end in short-term bans or arrests but **no lasting regulatory overhaul**.
- **Systemic Weakness:** Fragmented regulation and poor enforcement allow negligence to repeat across decades.

About Diethylene Glycol (DEG)

- **What it is:** A clear, sweet-tasting **industrial solvent** used in antifreeze and brake fluids.
- **Why it enters medicines:** Used as a **cheap substitute** for propylene glycol or glycerine.
- **Toxicity:** Causes **vomiting, kidney failure, and death** even in small amounts.
- **Legal Limit:** Only **0.1% allowed**, but recent tests showed **over 46%**—a sign of severe negligence.
- **Historical Precedent:** The 1937 *U.S. Elixir Sulfanilamide disaster* led to the creation of modern FDA laws.

Drug Regulation in India

- **Legal Framework:** Governed by the Drugs and Cosmetics Act, 1940 and Rules, 1945.
- **Regulatory Structure:**
  - **CDSCO (Central):** Oversees imports and national drug quality.
  - **State Authorities:** License manufacturing and monitor sales.
- **Key Issues:**
  - Fragmented authority, **poor coordination** between centre and states.
  - **Inadequate testing infrastructure** and manpower in states.
  - Weak enforcement and **rare independent audits** of manufacturers.

Regulatory & Ethical Gaps

- **Poor oversight:** No unified national database linking regulatory bodies.
- **Infrequent inspections:** Many small units escape quality checks.
- **Lenient penalties:** Minimal fines fail to deter violations.
- **Ethical lapse:** Prioritising profit over safety reflects **moral negligence** and disregard for human life.

Impact on India's Global Reputation

- **WHO warnings:** After international deaths, WHO issued **global alerts** against Indian-made syrups.

- **Export hurdles:** Many countries now demand **independent quality certificates.**
- **Loss of credibility:** India's reputation as a reliable drug exporter is **severely damaged.**
- **Economic cost:** Threatens India's **$25 billion pharma export industry** and global goodwill.

Way Forward

- **Centralised digital monitoring** of drug production, testing, and licensing.
- **Mandatory third-party audits** for raw materials and finished products.
- **Harsher penalties** and criminal accountability for top management in fatal cases.
- **Modernise state labs** with updated technology and trained professionals.
- **Uniform quality standards** for domestic and export medicines under WHO-GMP norms.

Conclusion

India's cough syrup crisis reflects a **moral and regulatory failure** rather than an isolated mistake. Ensuring **ethical responsibility, strict oversight, and stronger accountability** is crucial to restore public trust and protect global health.

2. ETHICS AT THE HEART OF GLOBAL CLIMATE ACTION

Why in News

- The upcoming **COP30 Summit in Brazil (2025)** has initiated a **Global Ethical Stocktake**, aiming to place **justice, equity, and moral responsibility** at the centre of global climate negotiations. This marks a decisive shift from a purely technical to an **ethics-based approach** in climate governance.

Ethical Dimensions of Climate Change

1. **Justice and Equity**
   - The UNFCCC principle of **Common but Differentiated Responsibilities (CBDR)** embodies distributive justice—recognising historical responsibility of developed nations.
   - Developing nations, still overcoming poverty, deserve equitable carbon space.
   - ***Example:*** The **Paris Agreement's "Leave No One Behind"** framework echoes fairness by demanding inclusive growth.
2. **Intergenerational Responsibility**
   - Today's emissions compromise tomorrow's existence. Ethics demands **planetary stewardship**, not exploitation.
   - ***Example:*** The **International Court of Justice (2025)** reaffirmed *intergenerational equity* as central to climate treaties.
3. **Human Rights Linkage**
   - Access to clean air, water, and food are essential to the **right to life (Article 21, Indian Constitution)**.
   - ***Example:*** The **Inter-American Court (2024)** declared the *right to a stable climate* a fundamental human right.
4. **Integrity and Credibility**
   - Many nations announce climate pledges but fail to deliver. Ethical governance requires **transparency and accountability** in NDCs.
   - ***Example:*** Corporate **greenwashing scandals** have eroded public trust in net-zero claims.
5. **Solidarity with the Vulnerable**
   - Ethics demands empathy for **marginalised and Indigenous communities** who bear disproportionate climate impacts.
   - ***Example:*** The **Snow Leopard Conservation Project** in Himachal Pradesh shows inclusive, community-led ethics in practice.

Role of Ethics in Climate Governance

- **Guiding Negotiators:** Diplomats must see climate talks not as political bargaining but as a **moral duty to protect lives**.
- **Institutionalising Ethical Frameworks:** The **Global Ethical Stocktake (Brazil 2025)** aims to assess countries not only on emissions but on **justice and fairness metrics**.
- **Judiciary as Ethical Guardian:** Courts increasingly link **law with morality**, ensuring states fulfil their environmental duties.
- **Corporate Responsibility:** Ethical business behaviour—based on **Hans Jonas's "Ethics of Responsibility"**—is vital for credible private sector climate action.

Ethics in the Indian Context

1. **Constitutional Mandates**
   - ***Article 48A:*** State's duty to protect environment.
   - ***Article 51A(g):*** Citizen's duty to conserve resources.

2. **Judicial Reinforcement**: *Vellore Citizens' Forum vs Union of India (1996):* Upheld **Polluter Pays** and **Precautionary Principles**.
3. **Gandhian Thought**: Gandhi's idea of **trusteeship** aligns with sustainable consumption—humans as caretakers, not exploiters, of nature.

Challenges in Ethical Climate Action

- **National Interest vs Global Good:** Rich nations delay commitments on **climate finance and technology transfer**, widening the trust deficit.
- **Political Polarisation:** Climate denial and populism weaken multilateral cooperation despite rising urgency.
- **Greenwashing and Weak Oversight:** Companies exaggerate achievements without accountability mechanisms.
- **Underfunded Adaptation Finance:** Vulnerable nations lack resources for resilience; only **12% of global climate finance (UNEP 2024)** reached adaptation goals.

Way Forward

- **Operationalise Global Ethical Stocktake** – Regular moral audits of climate policies through justice and equity frameworks.
- **Ensure Just Transition Policies** – Protect workers and local livelihoods during the green energy shift.
- **Strengthen Ethical Climate Jurisprudence** – Courts must uphold *rights-based* environmental protection.
- **Promote Ethical Leadership** – Policy decisions must prioritise **planet over politics**.
- **Integrate Ethics in Education** – Introduce **climate ethics** modules in schools and civil service training.

Conclusion

Ethics is the soul of climate action. Without **justice, transparency, and compassion**, technology and treaties alone cannot restore planetary balance. A truly sustainable world will emerge only when **human conscience becomes the climate policy's strongest weapon.**

II. Ethics in Public Administration

1. CODE OF ETHICS — ICAI REVISION AND ETHICAL MODERNIZATION

Why in News

- The **Institute of Chartered Accountants of India (ICAI)** is revising its **Code of Ethics (2025)** to allow **advertising and firm websites**, marking a significant step toward **ethical modernization and professional autonomy** in India's financial ecosystem.

About Code of Ethics

- A Code of Ethics is a **formal document of moral conduct** that prescribes how professionals should act in alignment with honesty, fairness, and responsibility.
- **Purpose:**
  - Ensures **ethical consistency** across decisions and actions.
  - Bridges the gap between **legal compliance and moral responsibility**.
  - Reinforces **trust between professionals and society**, safeguarding the credibility of institutions.

Core Features of a Code of Ethics

- **Defines Mission and Core Values** It encapsulates an institution's **ethical vision** — linking its purpose with integrity.
  - ***Example:*** The **ICAI's revised code** aims to balance modernization with professional dignity, reflecting evolving market realities.
- **Establishes Conduct Norms:** It lays down what is **acceptable or prohibited**, setting moral limits that separate **professionalism from opportunism**.
- **Guides Ethical Decision-Making:** Provides a **moral compass** when rules are ambiguous — ensuring choices are guided by conscience, not convenience.
- **Promotes Ethical Accountability:** It ensures ethics are **enforceable**, not symbolic — creating a basis for **disciplinary action** when standards are violated.

Types of Codes of Ethics

1. **Compliance-Based Code:**
   - Rooted in **legal mandates** and procedural discipline.
   - Ensures professionals act ethically even when driven by external compulsion.
   - ***Example:*** Financial reporting standards under SEBI that penalize misstatements.
2. **Value-Based Code:**
   - Goes beyond law, nurturing **self-regulation and moral introspection**.
   - Virtue becomes the internal regulator of conduct.
   - ***Example:*** Gandhi's idea of "Truth in Action" — ethics driven by inner conviction.
3. **Professional Code:**
   - Merges **technical competence with moral responsibility**.
   - ***Example:*** Doctors, lawyers, and chartered accountants follow codes integrating expertise with ethical conscience.

Importance in Public and Corporate Administration

1. **Integrity in Decision-Making:** Ethical codes inject **honesty and fairness** into official decisions.
   - ***Example:*** The **Supreme Court's Electoral Bonds judgment (2024)** upheld transparency over secrecy, restoring public trust.

2. **Public Trust and Institutional Legitimacy:** A transparent system converts **authority into service**, ensuring institutions command respect, not fear.
3. **Conflict Prevention:** Ethical norms prevent **corruption masked as efficiency**, ensuring procedures remain pure in intent.
4. **Cultural Standardization:** Creates a **uniform ethical ecosystem** across departments and professions.
   - ***Example:*** **Mission Karmayogi** introduced ethical learning modules for civil servants.
5. **Reinforcing Accountability:** Ethics transform responsibility into a **personal virtue** rather than a regulatory burden.

Challenges in Implementing Codes of Ethics

- **Ambiguity in Interpretation** leading to inconsistent enforcement.
- **Commercial Pressures** making profits override principles.
  - ***Example:*** Medical marketing scandals compromising patient care.
- **Lack of Ethical Training** reduces morality to paperwork.
- **Fragmented Oversight** blurs accountability between regulators.
- **Weak Enforcement Mechanisms** reduce deterrence.

2nd ARC Recommendations for Strengthening Ethics

1. **Unified Public Service Code** embedding values of **integrity, empathy, and impartiality**.
2. **Ethics Committees** to guide officers during real-time moral conflicts.
3. **Mandatory Ethics Training** through digital tools.
   - ***Example:*** LBSNAA's **GYAN platform** uses case-based learning.
4. **Ethical Appraisal Systems** linking promotions to ethical behaviour.
   - ***Example:*** **CVC's Integrity Index (2023)** measures institutional ethical performance.
5. **Legal Empowerment** of ethical codes to ensure **accountability with deterrence**.

Conclusion

The ICAI's decision to update its Code of Ethics marks **India's ethical evolution** — from rigid compliance to **value-driven professionalism**. By aligning **law, conscience, and culture**, India can build institutions where **trust becomes the true currency of governance**. **Integrity is not an occasional act — it is a continuous expression of national character.**

III. Probity in Governance

1. CORPORATE GOVERNANCE AND TRUST-BASED REGULATION

Why in News

- Recently, the **Confederation of Indian Industry (CII)** released a set of **15 action points** aimed at encouraging regulators to **reduce compliance burdens** and adopt a **trust-based approach** towards **corporate governance** in India.

About Corporate Governance

- **Corporate Governance** refers to the **framework of rules, principles, and processes** through which a company is directed, controlled, and held accountable.
- It defines the **relationship between management, board of directors, shareholders, and other stakeholders**, ensuring that business decisions uphold **transparency, fairness, and accountability**.

Principles of Corporate Governance

- **Transparency:** Open disclosure of financial and operational information to all stakeholders.
- **Accountability:** Management and the board must be answerable for their actions and performance.
- **Fairness:** Equal treatment of shareholders and stakeholders without bias.
- **Responsibility:** Commitment to act in the best interests of society, environment, and business ethics.
- **Sustainability:** Focus on long-term value creation through responsible business practices.

Significance of Corporate Governance

- **Ensures Ethical Management:** Prevents frauds, insider trading, and unethical conduct.
- **Protects Stakeholders:** Safeguards the rights of investors, employees, and communities.
- **Enhances Reputation:** Builds credibility and trust among customers and regulators.
- **Promotes Economic Growth:** Facilitates investment inflow and global competitiveness.
- **Improves Risk Management:** Identifies vulnerabilities and ensures timely mitigation.

Importance of Trust in Corporate Governance

- **A Valuable Corporate Asset:** Trust strengthens reputation and helps companies perform better in competitive markets.
- **Fosters Shared Goals:** Collaboration between **businesses, government, and society** promotes sustainable growth.
- **Strengthens Stakeholder Engagement:** Transparent governance builds **brand loyalty**, **employee morale**, and **public confidence**.
- **Encourages Better Policymaking:** A trustworthy corporate environment motivates regulators to **simplify compliance norms** and adopt **business-friendly policies**.
- **Boosts Business Growth:** Companies with integrity attract **investors, skilled workforce, and global alliances**, ensuring long-term success.

15 Action Points to Improve Corporate Governance

1. **Define a Clear Corporate Purpose:** Align company vision with **ethics, sustainability, and stakeholder welfare** to guide strategic decisions.
2. **Develop Robust Risk & Crisis Management:** Identify **geopolitical, financial, or technological risks** and prepare proactive mitigation frameworks.
3. **Ensure Regulatory Compliance & Financial Integrity:** Maintain **accurate disclosures**, strong internal controls, and prompt corrective mechanisms.
4. **Adopt Technology Responsibly:** Use **AI, blockchain, and automation** for efficiency while ensuring data privacy and ethical standards.
5. **Optimize Supply Chain Governance:** Promote **ethical procurement**, **transparency**, and **timely vendor payments** to build resilience.
6. **Assign Trust Leadership:** Designate a senior executive as a **"Trust Steward"** to coordinate compliance, risk, and stakeholder relations.
7. **Manage Conflicts Constructively:** Encourage **open dialogue** and institutionalize **grievance redressal mechanisms**.
8. **Maintain Transparent Communication:** Use feedback systems and honest reporting to enhance **stakeholder confidence**.
9. **Deliver on Promises:** Meet commitments consistently to strengthen **corporate reliability**.
10. **Uphold Ethics and Integrity:** Implement a **code of conduct**, regular ethics training, and **leadership accountability**.

11. **Empower Employees:** Encourage **inclusive workplaces**, recognize contributions, and promote **psychological safety**.
12. **Adopt Customer-Centric Policies:** Ensure **data privacy**, timely grievance handling, and responsive communication.
13. **Commit to ESG Principles:** Focus on **environmental stewardship**, **community welfare**, and **responsible governance**.
14. **Build Transparent Partnerships:** Ensure **fair negotiations** and **shared goals** for long-term collaborations.
15. **Champion the Trust Agenda:** Leaders should **model ethical behaviour**, ensuring that trust is embedded in corporate culture.

What Lies Ahead

- Adopting these 15 principles can **reshape Indian corporate governance** into a **trust-based system**.
- It can **reduce compliance complexities**, improve **stakeholder relationships**, and **strengthen India's global business credibility**.
- A transparent and trust-driven framework will help achieve **sustainable growth**, **policy efficiency**, and **inclusive prosperity**.

Conclusion

Building trust within corporate governance is no longer optional—it is a **strategic necessity**. By implementing CII's action points, India's corporate sector can move from a compliance-driven mindset to a **trust-based, transparent ecosystem**. Such transformation will ensure **ethical growth, investor confidence, and long-term national prosperity**.