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IAS STUDY CIRCLE**

40+ Years Institute's History

MAY 2026

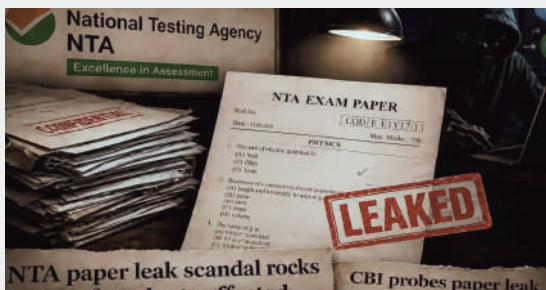
CURRENT AFFAIRS

MAINS **UPSC CSE** **2026**
IAS Exam

Monthly Magazine



**Most Important
Current Affairs
Topics for CSE
Mains 2026**



**Topics Based on
Syllabus and
Previous Year
Questions**



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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.....	4
A. MODERN INDIAN HISTORY.....	4
I. Significant events, personalities, issues.....	4
1. RAJA RAMMOHAN ROY	4
B. INDIAN SOCIETY	5
I. Role of Women and Women's Organization, Population and Associated Issues, Poverty and Developmental issues, Urbanization, their problems and their remedies.	5
1. THE ROAD TO WOMEN'S SAFETY AND EQUALITY.....	5
2. ACCESSIBILITY CHALLENGES IN INDIA'S PRISONS.....	7
3. REPRODUCTIVE RIGHTS	9
4. INEQUALITY IN INDIA'S GROWTH STORY	10
5. LANCET FINDINGS ON YOUTH VULNERABILITY.....	12
6. GEN Z AND DEMOCRACY	14
II. Social Empowerment, Communalism, Regionalism & Secularism.	15
1. INTERCASTE MARRIAGES AND THE UNFINISHED LAW.....	15
C. GEOGRAPHY	17
I. Key Natural Resources	17
1. UPPER GANGA NO-DAM CONSENSUS	17
GS 2 - GOVERNANCE, CONSTITUTION, POLITY, SOCIAL JUSTICE AND INTERNATIONAL RELATIONS.....	21
A. POLITY	21
I. Fundamental Rights, DPSPs and Fundamental Duties.....	21
1. Right to Safe Passage on Highways	21
II. Federal structure of the Constitution	22
1. Empowering India's Local Governments.....	22
III. Separation of Powers.....	24
1. Governor's Role in Hung Assembly	24
IV. Parliament and State legislatures.....	25
1. Rising Electoral Participation.....	25
2. Scope of Legal Fiction in Party Mergers.....	27
V. The Judiciary	28
1. Supreme Court Observation on Hate Speech	28
2. Should the PIL Jurisdiction be Reconsidered?.....	29
3. Judicial Reforms.....	31
4. Sedition Law under Section 124A	32
VI. Representation of People's Act.....	33
1. Forest Rights Act (FRA) 2006	33
B. GOVERNANCE.....	35
I. Government policies and Interventions.....	35
1. The RTE Act and the Idea of Social Inclusion.....	35
2. 546 Die Every Day in Traffic Accidents.....	36
3. Press Freedom in India.....	39
4. Promotion and Regulation of Online Gaming Act, 2025	40

C. SOCIAL JUSTICE.....	41
I. Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.....	41
1. Residential Segregation and Public Health	41
2. Medical and Wellness Tourism in India.....	43
3. Childhood Diabetes Care	46
4. World Health Statistics Report by WHO	48
5. Bringing Dropout Children Back into Mainstream Education through Inclusive Schooling.....	49
6. Sample Registration Survey 2024	50
D. INTERNATIONAL RELATIONS.....	51
I. India and its Neighborhood- Relations.....	51
1. Indian Ocean Rim Association (IORA)	51
II. India & World	53
1. India and New Zealand Free Trade Agreement (FTA)	53
2. Impact of Iran War on Printed Circuit Board (PCB) Supply Chain.....	55
3. India-Vietnam Relations	56
4. India - UAE Relations	58
5. India - Italy Relations.....	59
6. India - US Relations.....	60
III. Bilateral, Regional and Global Groupings and Agreements	61
1. Principles to Guide India's Diplomacy	61
IV. Important International Institutions, agencies and fora.....	63
1. Rules that Govern International Waters	63
2. UAE Announces Exit from OPEC	65
3. WTO and Its Relevance.....	66
GENERAL STUDIES - 3	71
A. INDIAN ECONOMY.....	71
I. Indian economy issues relating to planning, mobilization of resources.....	71
1. PRODUCTIVITY AS THE ENGINE OF VIKSIT BHARAT 2047”	71
II. Growth and Development, employment.....	72
1. ORANGE ECONOMY IN INDIA	72
2. MEDICAL AND WELLNESS TOURISM IN INDIA.....	73
3. AI-POWERED FINANCIAL INCLUSION IN INDIA.....	75
III. Inclusive growth and issues.....	77
1. INDIA'S PENSION ARCHITECTURE AND TRANSITION TO SUSTAINABILITY	77
IV. Agriculture and allied.....	78
1. MAKING INDIAN FARMING FUTURE-READY	78
2. TWIN CRISIS IN INDIAN AGRICULTURE AND FERTILIZER SHORTAGES	79
V. Inflation	81
1. SHOULD THE RUPEE BE LEFT TO DEPRECIATE.....	81
VI. Infrastructure	82
1. INDIA'S ENERGY SECURITY AMID CONFLICTS.....	82
2. INDIA'S EV TARGETS AND GRID CONNECTIVITY	84
3. MAKE IN INDIA IN THE DEFENSE SECTOR.....	85
VII. Trade and External sector.....	87
1. INDIA-NEW ZEALAND FREE TRADE AGREEMENT (FTA)	87

VIII. Investment models	88
1. THE PRIVATE INVESTMENT PARADOX IN INDIA	88
B. ENVIRONMENT	90
I. Biodiversity and conservation	90
1. HUMAN-ANIMAL CONFLICT ZONES AND SUSTAINABLE SOLUTIONS	90
II. Environmental pollution.....	92
1. NGT'S AIR QUALITY FINANCE REFORM AND CLEAN AIR	92
2. A DECENTRALISED SOLUTION FOR WASTE CRISIS.....	94
3. ROAD DUST AND THE HIDDEN POLLUTION THREAT	96
III. Land Degradation.....	97
1. SAND AND SUSTAINABILITY	97
IV. Renewable Energy	98
1. INDIA'S ETHANOL BLENDING PROGRAMME AND PATH TO E100	98
2. DECENTRALIZED BIOENERGY SYSTEMS	100
V. Global Warming and Climate Change	102
1. SHAPING INDIA'S CLIMATE TRAJECTORY	102
2. ECOCIDE, WAR AND ENVIRONMENT	103
VI. Global and Indian Initiatives, efforts and Commitments	105
1. TURNING CARBON BORDER TAXES INTO A STRATEGIC OPPORTUNITY	105
2. GLOBAL ELECTRIFICATION DRIVE AND COP31	106
C. DISASTER MANAGEMENT.....	107
I. Disasters and their management.....	107
1. DELHI HEAT CRISIS.....	107
2. ELECTRICAL FIRE RISKS IN INDIA.....	108
D. SCIENCE AND TECHNOLOGY	109
I. Awareness in the fields of IT, Space,	109
1. GAGANYAAN'S ENVIRONMENTAL CONTROL AND LIFE SUPPORT SYSTEM (ECLSS)	109
E. SECURITY	111
I. Role of External State and Non-state Actors in creating challenges to Internal Security.	111
1. RUSSIA CHINA PROXIMITY AND INDIA'S SECURITY CHALLENGE	111
II. Cyber Security.....	112
1. CYBER WARFARE AND THE LEGAL VACUUM.....	112
GENERAL STUDIES - 4.....	116
A. ETHICS, INTEGRITY AND APTITUDE.....	116
I. Ethics in Public Administration	116
1. Recusal in Judiciary	116
II. Probity in Governance.....	117
1. NTA and NEET Paper Leak.....	117

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

A. MODERN INDIAN HISTORY

I. Significant events, personalities, issues

1. RAJA RAMMOHAN ROY

Why in News?

- Recently, the union Home minister paid tribute to **Raja Rammohan Roy** on his birth anniversary and appreciated his contribution towards social reform and modernization of Indian society.

Raja Rammohan Roy

- Raja Rammohan Roy** (1772-1833) is regarded as the **Father of Modern India** and the pioneer of the **Bengal Renaissance**.
- He played a major role in reforming Indian society by promoting rational thinking, women's rights, modern education, and religious reform.
- His ideas laid the intellectual foundation for social awakening and later nationalist movements in India.

Early Life and Education

- Raja Rammohan Roy was born in **Radhanagar village** in present-day West Bengal in 1772.
- He studied **Persian, Arabic, Sanskrit, Bengali, Hindi, and English**, gaining knowledge of Hindu, Islamic, and Western philosophies.
- He read the **Vedas, Upanishads, Quran**, and works of Greek philosophers, which shaped his liberal and rational outlook.
- He also worked in the Revenue Department of the East India Company before dedicating himself fully to reform activities.

Social Reforms

Abolition of Sati

- Raja Rammohan Roy strongly opposed the **Sati system**, in which widows were forced to burn themselves on their husband's funeral pyre.
- He argued that the practice was inhuman and not supported by true Hindu scriptures.
- Through public campaigns, writings, and petitions, he created awareness against Sati.
- His efforts influenced **Lord William Bentinck** to pass the **Bengal Sati Regulation Act, 1829**, which abolished Sati.

Women's Rights

- He opposed child marriage, polygamy, and the social oppression of widows.
- He supported women's education, inheritance rights, and social equality.
- His reformist ideas inspired later reformers such as **Ishwar Chandra Vidyasagar**.

Opposition to Caste System

- Raja Rammohan Roy criticized caste discrimination and untouchability.

- He believed that all individuals were equal and deserved dignity irrespective of birth.

Religious Reforms and Brahmo Samaj

- Raja Rammohan Roy believed in **monotheism** and opposed idol worship, blind rituals, and superstition.
- In 1814, he founded the **Atmiya Sabha** to encourage rational religious discussions.
- In 1828, he established the **Brahmo Samaj**, which promoted belief in one formless God, social equality, and universal brotherhood.
- The Brahmo Samaj became one of the earliest socio-religious reform movements in modern India.

Contribution to Education

- Raja Rammohan Roy strongly supported modern scientific education and English-language learning.
- He believed that Western science and rational knowledge were essential for India's progress.
- He supported the establishment of **Hindu College** in 1817.
- He also founded an English school and the Vedanta College to combine Indian philosophy with Western sciences.

Journalism and Political Ideas

- Raja Rammohan Roy used newspapers as a tool for spreading awareness and reformist ideas.
- He started publications such as **Samvad Kaumudi** and **Mirat-ul-Akbar**.
- He supported freedom of the press, equality before law, civil liberties, and Indian participation in administration.

Contemporary Relevance

- The ideas of Raja Rammohan Roy remain highly relevant in present-day India because society still faces challenges such as gender inequality, caste discrimination, social intolerance, and superstition.
- His emphasis on **women's empowerment** continues to guide policies related to gender justice and education.
- His advocacy of **scientific temper and rational thinking** is important in combating misinformation and blind faith.
- His ideas of **equality, human dignity, and religious harmony** reflect the core values of the Indian Constitution.
- His life demonstrates that social reform requires courage, intellectual clarity, and commitment to justice and humanity.

Conclusion

Raja Rammohan Roy was a visionary reformer who transformed Indian society through social reform, religious awakening, and promotion of modern education. His fight against social evils and his emphasis **on equality, rationalism, and human dignity** continue to inspire modern India.

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. THE ROAD TO WOMEN'S SAFETY AND EQUALITY

Why in News?

- Recently, women's safety in Telangana has come under scrutiny due to the rise in NCRB-reported crimes, along with growing incidents of street harassment and online abuse.

Women's Safety in Telangana

- **Rising Crime Rates:** NCRB data shows crimes against women in Telangana increased from **22,066 cases in 2022 to 24,495 in 2024**, a rise of **3.4%**.
- **High-Profile POCSO Case:** The case involving a Union Minister's son became a **litmus test for judicial impartiality**, highlighting challenges in equal enforcement of law.
- **Street Harassment:** A safety audit revealed that in one undercover session, **40 men approached a female officer inappropriately**, showing the scale of casual sexism.
- **Digital Abuse:** In 2025, legal action was taken against **73 individuals** in a single coordinated trolling incident, reflecting the growing menace of online harassment.
- **Youth Vulnerability:** POCSO filings indicate minors remain highly exposed, often with perpetrators from **influential backgrounds**, complicating justice delivery.

Challenges Faced by Women

- **Online Space:** **AI-driven smear campaigns** and **bot-led trolling**. **Anonymity** makes tracing offenders difficult. **Mental health impact** and reputational damage.
- **Offline Space:** **Casual sexism** in public and workplaces. **Persistent threats of assault and domestic violence**. **Workplace hostility** undermining women's authority.

Government Initiatives

- **Stand with Her Campaign:** Launched in **March 2026** to tackle sexism and promote male allyship.
- **Special Investigation Teams:** Dedicated to probing **digital smear campaigns**.
- **Technical Policing:** Collaboration with tech platforms; use of **UAPA provisions** to unmask anonymous abusers.
- **SHE Teams:** Expanded undercover units to curb **street harassment** and provide immediate assistance.

Challenges

- **Systemic Delays:** Investigation bottlenecks, overburdened courts, and frequent adjournments prolong trials.
- **Regional Disparities:** Some states clear backlogs rapidly, while others accumulate long-pending cases.
- **Impact on Survivors:** Delays aggravate trauma for child victims and weaken trust in justice delivery.

Way Forward

- **Equal Enforcement:** Swift resolution of **high-profile POCSO cases** to show law applies equally.
- **Digital Protection:** Strengthen legal framework against **online smear campaigns**.
- **Institutional Sensitization:** Mandatory **gender-sensitivity training** for police and judiciary.
- **Male Allyship:** Scale campaigns to **schools and colleges** to tackle sexism early.
- **Advanced Cyber Tools:** Invest in **AI-based detection systems** for faster tracing of online abuse.

Recommendations from Reports

- **Dedicated e-POCSO Courts:** Establish **600 additional courts** to clear backlog within four years.
- **Funding Needs:** Estimated **₹1,977 crore** required, suggested to be drawn from the **Nirbhaya Fund**.
- **Sustained Momentum:** Continued disposal above registration rates is essential to prevent pendency from rising again.

POCSO Cases (2025)

- **Cases Registered:** **80,320 fresh POCSO cases** were filed across India in 2025.
- **Cases Disposed:** **87,754 cases disposed**, marking a **109% disposal rate** - the first-time disposal exceeded registration.

- **Backlog Reduction:** 24 states/UTs achieved disposal rates above 100%, clearing not only new cases but also part of the backlog.
- **High Performers:** 7 states/UTs recorded disposal rates above **150%**, while another 7 achieved between **121-150%**.
- **Persistent Pendency:** Despite progress, **2.62 lakh cases** remained pending as of 2023, nearly half unresolved for over two years.
- **Long-Pending Cases:**
 - **Uttar Pradesh:** 37% of cases pending over five years.
 - **Maharashtra:** 24%.
 - **West Bengal:** 11%. Together, these three states account for nearly **three-fourths of the longest-pending cases**.

Conclusion

Women's safety in Telangana requires bridging the gap between **policy promises and legal outcomes**. Tackling both **street harassment and digital trolling** can set a **national benchmark for justice and equality**.

2. ACCESSIBILITY CHALLENGES IN INDIA'S PRISONS

Why in News?

- Recent reports by the **National Human Rights Commission (NHRC)** have exposed **severe accessibility gaps in Indian prisons**, especially for **inmates with disabilities**.

A Crisis in Indian prisons

- **Systemic Failures:** Indian prisons continue to reflect **overcrowding, poor infrastructure, and denial of basic rights**, often violating **Article 21 (Right to Life and Dignity)**.
- **Ignored Reform Recommendations:** Despite the **Mulla Committee (1980s)** and subsequent reform proposals, implementation has remained **fragmented and ineffective**, with little structural change.
- **Historical Abuses:** Incidents like the **Bhagalpur Blindings (1979-80)** exposed extreme custodial violence, drawing global criticism and highlighting the urgent need for humane prison conditions.
- **Recent Cases of Injustice:** The plight of **Father Stan Swamy** (denied basic aids despite Parkinson's) and **Prof. G.N. Saibaba** (wheelchair-bound, kept in inaccessible cells) underline the **continuing neglect of vulnerable inmates**.

State of Indian Prisons (NCRB 2023)

- **Excess Occupancy:** As of 2022, Indian prisons had a sanctioned capacity of **4.36 lakh inmates**, but were housing **5.73 lakh prisoners**, resulting in an **average occupancy rate of 131%**, with several prisons exceeding **200% of their sanctioned capacity**.
- **Undertrial Dominance:** Over **75% of inmates are undertrials**, awaiting trial due to judicial delays. India has one of the **highest undertrial proportions globally**, worsening overcrowding.
- **State-Level Variations:** Uttar Pradesh houses **~22% of India's total prison population**, with occupancy rates above **180%**. Delhi prisons report **over 170% occupancy**, reflecting severe strain on infrastructure.

Consequences of Overcrowding:

- **Poor hygiene and sanitation**, leading to frequent disease outbreaks.
- **Inadequate medical facilities** and neglect of mental health care.
- **Rising inmate violence** due to cramped living conditions.
- **Denial of rehabilitation opportunities**, as overcrowding limits access to education and skill programs.

International Comparison:

- India's occupancy rate (131%) is higher than the **global average of ~118%** (UNODC, 2023).
- Countries with similar rates face **UN criticism** for violating basic human rights standards.

Marginalized Within the Marginalized - Prisoners with Disabilities

- **Unique Challenges:** Lack of **ramps, wheelchairs, accessible toilets**, and assistive devices. Dependence on others for basic mobility and hygiene.
- **Notable Cases:** Father Stan Swamy (Parkinson's): Denied straw and sipper. Prof. G.N. Saibaba (90% disabled): Confined in a non-accessible cell, leading to injuries.
- **Audit Findings:** 2018 Delhi audit found **non-functional wheelchairs, inaccessible toilets, and water coolers placed out of reach**.

Judicial and Legal Safeguards

- **Key Judgments:** Rama Murthy vs State of Karnataka (1996) - Highlighted overcrowding and neglect. Upendra Baxi vs State of U.P. (1983) - Affirmed **right to dignity under Article 21**.
- **Domestic Laws:**
 - **Rights of Persons with Disabilities Act, 2016** - Mandates protection and reasonable accommodation.
 - **Model Prison Manual, 2016** - Recommends universal accessibility and health safeguards.
 - **Accessibility Guidelines, 2024** - Provide blueprints for inclusive prison infrastructure.
- **International Norms:** **Nelson Mandela Rules (2015)** and **UN CRPD** demand humane, non-discriminatory treatment.

Challenges

- **Policy-Execution Gap:** Although India has frameworks like the **Model Prison Manual (2016)** and **Accessibility Guidelines (2024)**, enforcement remains weak. For example, NCRB data (2023) shows that despite directives, **over 60% of prisons lack proper medical staff**.
- **Societal Apathy:** Prisoners are often perceived as undeserving of rights. Surveys by NHRC (2022) revealed that **over 40% of respondents believed prisoners should not receive equal healthcare**, reflecting deep stigma.
- **Fiscal Constraints:** States cite budget shortages. In 2023-24, only **₹1,800 crore** was allocated nationwide for prison infrastructure, far below the estimated **₹5,000 crore** needed for modernization.
- **Decentralized Governance:** Prison administration falls under the **State List (Schedule VII)**, leading to uneven compliance. For instance, Kerala reports **better rehabilitation programs**, while Bihar and UP struggle with occupancy rates above 170%.

Way Forward

- **Enforce Guidelines:** Uniform adoption of the **Model Prison Manual** and **Accessibility norms** across all states.
- **Infrastructure Upgrade:** Build **ramps, accessible toilets, and functional wheelchairs**. As per NHRC (2023), **only 12% of prisons have disability-friendly facilities**.
- **Data Transparency:** Establish a **national database of prisoners with disabilities** to design targeted interventions.
- **Monitoring & Training:** Conduct **regular audits** and train staff in **human rights and disability sensitivity**.
- **Judicial Oversight:** Courts should monitor reforms through **suo motu reviews**. In *Rama Murthy vs State of Karnataka (1996)*, SC highlighted overcrowding, but follow-up remains minimal.

Conclusion

India's prisons mirror a **crisis of conscience and accountability**. Despite constitutional and international safeguards, inmates especially those with disabilities face denial of dignity and humane treatment. Reforming prison infrastructure and attitudes is not optional but a **constitutional obligation**.

3. REPRODUCTIVE RIGHTS

Why in News?

- The **Supreme Court of India** recently reaffirmed that the **right to reproductive choice** is a fundamental part of **Article 21**, emphasizing that the decision to terminate a pregnancy lies solely with the individual.

Reproductive Rights

- Shift from Mercy to Rights:** The Supreme Court has moved India's abortion framework from a **doctor-centric mercy model** to a **rights-based approach**, ensuring that reproductive choice is a matter of **individual autonomy**.
- Bodily Autonomy & Article 21:** The judgment firmly establishes **bodily autonomy, dignity, and privacy** as inseparable from the **Right to Life and Personal Liberty** under Article 21.
- Equality under Article 14:** By extending abortion rights to **unmarried women**, the Court corrected earlier biases, ensuring **equal access to reproductive healthcare** irrespective of marital status.
- Global Alignment:** India's stance now resonates with **international standards of reproductive justice**, comparable to frameworks in countries like **Canada and South Africa**, where autonomy is central to reproductive health laws.
- Updated Legal Context:** The **MTP Amendment Act, 2021** raised the abortion limit to **24 weeks for special categories** and mandated **medical boards for foetal anomalies beyond 24 weeks**, reflecting evolving social realities.

Autonomy of Choice: The Evolution of Reproductive Rights in India

Evolution of the MTP Act (1971 vs. 2021)

MTP Act, 1971

Shift from "Doctor-Centric" to "Patient-Centric"
 The 2021 amendment prioritizes the individual's choice over a doctor's singular opinion.



The Constitutional Pillars of Autonomy

Article 21: The Right to Bodily Integrity
 Reproductive choice is firmly established as a component of the Right to Life.

Article 14: Radical Equality
 The Court corrected legal disparities between married and unmarried women seeking care.

MTP Amendment Act, 2021



Organic Law vs. Public Morality
 Law must evolve with society, shielding individuals from entrenched patriarchal stigmas.

Evolution of Abortion Laws in India

Provision	MTP Act, 1971	MTP Amendment Act, 2021
Upper Limit	20 weeks	24 weeks (for special categories)
Doctor's Opinion	1 doctor (up to 20 weeks)	2 doctors (20-24 weeks)
Eligibility	Married women only (contraceptive failure)	Any woman or her partner
Medical Board	Not required	Required for cases beyond 24 weeks (foetal anomalies)

The **2021 amendment** expanded access and recognized **unmarried women's rights**, ensuring equality under **Article 14**.

Dimensions of the Supreme Court's Ruling

- **Legal Dimension:** Law must be **organic**, evolving with social realities; gestational limits should not restrict survivors of sexual assault.
- **Social Dimension:** The Court challenged **patriarchal stigma** around unwed mothers and minors, prioritizing **constitutional morality** over public morality.
- **Constitutional Dimension:** **Article 21:** Protects bodily integrity and privacy. **Article 14:** Ensures equal access to abortion for all women, married or unmarried.

Challenges in Implementation

- **Medical Board Delays:** Bureaucratic hurdles for pregnancies beyond 24 weeks.
- **Awareness Gap:** Rural women often unaware of updated rights.
- **POCSO Conflict:** Mandatory reporting discourages minors from seeking safe abortions.

Way Forward

- **Infrastructure Strengthening:** Ensure safe abortion facilities at primary healthcare centers.
- **Sensitivity Training:** Educate medical staff to respect autonomy and confidentiality.
- **Comprehensive Sex Education:** Empower youth with awareness to prevent unwanted pregnancies.
- **Decriminalization:** Treat abortion purely as a **healthcare and human rights issue**, not under IPC.

Conclusion

The Supreme Court's progressive stance has placed **choice and dignity** at the heart of reproductive rights. For true empowerment, India must ensure that every woman—regardless of age, marital status, or social background can exercise her reproductive autonomy safely and freely.

4. INEQUALITY IN INDIA'S GROWTH STORY

Why in News?

- The **HCES 2023-24 analysis** and recent policy debates around the **Viksit Bharat-GRAMIN Bill (2025)** and new **Labour Codes** have reignited concerns that **consumption inequality in India remains high**.

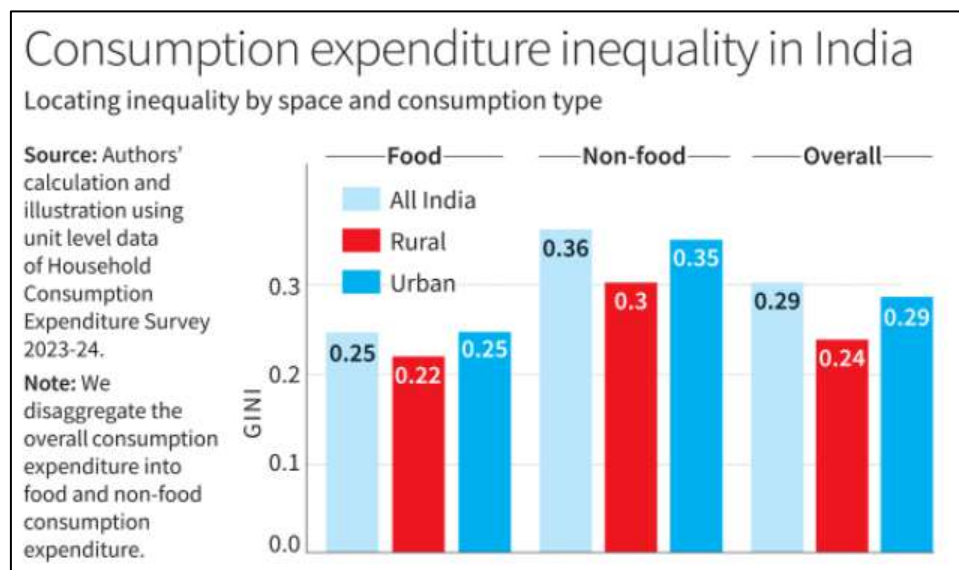
Inequality in India's Growth Story

- **Definition:** Inequality refers to the **unequal distribution of income, wealth, or consumption** across society, measured using tools like the **Gini Index**.
- **Multiple Dimensions:** In India, disparities are visible across **caste, class, gender, and rural-urban divides**, making inequality a **multi-layered challenge**.

- **Persisting Despite Growth:** Even with rapid GDP expansion, inequality persists, raising concerns about the **sustainability and inclusiveness** of India's development model.
- **Gini Index Data:** The **HCES 2023-24** places India's consumption Gini at **0.29**, higher than the World Bank's estimate of **0.25**, showing widening gaps.
- **Urban-Rural Divide:** Urban non-food monthly per capita expenditure (MPCE) is **1.5 times higher** than the all-India average, while the top urban decile spends **9 times more** than the bottom rural decile.

Recent trends

- **Gini Index:** Consumption Gini at **0.29**, higher than the World Bank's estimate of **0.25**.
- **Urban-Rural Gap:** Urban non-food MPCE is **1.5 times higher** than the all-India average.
- **Extreme Decile Ratios:** Top urban decile spends **9 times more** than the bottom rural decile.
- **Concentrated Spending:** Urban top 10% accounts for **27% of total non-food expenditure**.



Reasons for Rising Inequality

- **Urban-Centric Growth:** Economic activities concentrated in cities, leaving rural areas behind.
- **Agricultural Distress:** Rural incomes stagnate while urban affluence rises.
- **Class Gains:** Owners, managers, and professionals benefit disproportionately since the 1980s.
- **Informal Sector Stagnation:** Informal workers and farm labourers see little improvement.
- **Superrich Exclusion:** Surveys fail to capture wealth of the richest, underestimating true inequality.

Government Initiatives

- **Viksit Bharat-GRAMIN Act, 2025:** Introduced as a replacement for **MGNREGA**, aiming to modernize rural employment and livelihoods. It targets **5 crore households** with skill-linked jobs, but concerns remain about reduced wage-based employment opportunities.
- **PMGKY:** Provides food security and welfare support. As per government data (2024), **80 crore beneficiaries** received free food grains under this scheme, covering nearly **two-thirds of India's population**.
- **Labour Codes:** Consolidated 29 labour laws into **4 codes** (wages, social security, industrial relations, occupational safety). While streamlining regulations, critics argue that **informal workers (over 90% of India's workforce)** remain inadequately protected.
- **BPL Ration Cards:** Continue to provide subsidized food to vulnerable households. As per NFSA (2024), **75% of rural and 50% of urban households** are covered, but targeting errors mean **1 in 4 beneficiaries belong to higher income groups**.

Implications of Inequality

- **Policy Missteps:** Underestimating inequality (using Gini 0.25 vs actual 0.29) leads to **underfunded rural support systems**. Example: Budget 2024-25 reduced **MGNREGA allocation by 30%**, despite high demand.
- **Debt-Led Consumption:** NSSO surveys show **over 40% of rural households rely on borrowing** to sustain consumption, creating unsustainable growth patterns.
- **Weak Rural Demand:** RBI (2024) noted that **rural FMCG demand grew only 2%**, compared to **urban growth of 8%**, limiting domestic market expansion.
- **Reduced Social Mobility:** Class gaps hinder upward movement. Oxfam India (2024) reported that the **top 1% controls 40% of wealth**, while the bottom 50% owns less than 10%, restricting opportunities for lower deciles.
- **Welfare Leakages:** NFSA audits (2023) found that **25% of the richest households** still benefit from subsidized food schemes, while many poor families remain excluded.

Way Forward

- **Better Data:** Address survey gaps to capture true inequality, including the **superrich segment** often missed in NSSO/HCES surveys.
- **Class-Focused Analysis:** Move beyond interpersonal inequality to analyze **structural gaps between caste, class, and occupational groups**.
- **Target Non-Food Gap:** Bridge disparities in **non-food MPCE**, where the top 10% urban households account for **27% of total spending**.
- **Strengthen Informal Welfare:** Ensure labour codes provide **social security coverage** to informal workers, who form **over 90% of India's workforce**.
- **Inclusive Growth:** Shift from **debt-driven consumption** to systemic welfare reforms, focusing on **education, healthcare, and rural employment** to ensure equitable growth.

Conclusion

India's growth story is marked by **deepening rural-urban divides and class-based disparities**. While official narratives highlight progress, data shows inequality remains a **structural barrier to inclusive development**. Bridging these gaps requires **accurate data, stronger welfare targeting, and reforms that prioritize vulnerable groups**.

5. LANCET FINDINGS ON YOUTH VULNERABILITY

Why in News?

- The **Lancet Global Report (2024)** revealed alarming statistics on **child sexual abuse across 204 countries**, showing India among the worst affected.

A Structural Crisis in India

- **Global Crisis:** Child sexual abuse is recognized as a **worldwide epidemic**, cutting across socio-economic and cultural boundaries. WHO (2024) estimates that **1 in 4 girls and 1 in 13 boys globally** experience sexual violence before age 18.
- **Indian Context:** India faces a **structural failure in child protection systems**. NCRB (2023) recorded **over 1.6 lakh cases under POCSO Act**, marking a **12% rise from 2022**, yet conviction rates remain below **30%**.
- **Hidden Burden:** UNICEF reports that **nearly 50% of cases in India go unreported** due to stigma, fear of retaliation, and lack of accessible complaint mechanisms.
- **Institutional Weakness:** Schools and child care institutions often lack **trained counsellors and protection officers**. A NCPCR audit (2024) found that **only 18% of schools had child protection committees** functioning effectively.

Indian Landscape of Vulnerability

- **Stigma & Silence:** Deep cultural taboos prevent survivors from reporting abuse. UNICEF (2024) estimates that **nearly 50% of child sexual abuse cases in India go unreported**, reflecting fear of social backlash and victim-blaming.
- **Proximity of Abuse:** Most violations occur in familiar environments, often committed by **relatives, neighbours, or trusted figures**. NCRB (2023) data shows **over 80% of perpetrators were known to the child**, highlighting the challenge of protection within households and communities.
- **Institutional Gaps:** Schools and child care institutions lack trained staff and protection frameworks. A NCPCR audit (2024) found that **only 18% of schools had functional child protection committees**, leaving children vulnerable.
- **Digital Risks:** Rising screen time exposes children to online predators. Interpol (2023) ranked India among the **top 5 countries in online child sexual exploitation cases**, with cyber cells struggling to monitor encrypted platforms.

Legal Instruments - POCSO Act, 2012

- **Strengths:** Gender-neutral framework. Covers a wide spectrum of sexual offences. Mandates child-friendly procedures for reporting and trials.
- **Weaknesses:** Conviction rates remain below **30%** (NCRB 2023). Severe court backlogs delay justice; average trial duration exceeds **3 years**.
- **Lack of sensitivity** training among police and judicial officials often retraumatizes survivors.

Indian scenario

- **Increased Reporting:** Awareness campaigns and the POCSO Act have encouraged families to report cases, leading to a **12% rise in registered cases between 2022-23**.
- **Rural Disparities:** Rural regions suffer from **low legal literacy and weak support networks**, suppressing reporting. NFHS-5 data shows rural households are **40% less likely to report abuse** compared to urban families.
- **Patriarchal Norms:** Entrenched gender inequalities fuel denial and victim-blaming. Studies indicate that **girls face twice the risk of abuse compared to boys**, yet families often silence survivors to “protect honour.”
- **Regional & Economic Variations:** Kerala & Maharashtra show higher reporting; Bihar & UP lag. Urban areas face digital exploitation; rural areas suffer familial abuse with minimal reporting.

Impact on Survivors

- **Mental Health:** PTSD, depression, suicidal ideation.
- **Academic Fallout:** Dropouts, poor performance, social withdrawal.
- **Adulthood Repercussions:** Difficulty in relationships and employment stability.

Way Forward

- **Justice Reform:** Fast-track courts, child-friendly police units, mandatory sensitivity training.
- **Education:** Age-appropriate sex education on safe touch, online boundaries, gender equity.
- **Community Mobilization:** Panchayats, NGOs, and grassroots campaigns to destigmatize reporting.
- **Digital Safety:** Strengthen Childline 1098, regulate online spaces, parental monitoring tools.
- **Data-Driven Policy:** Centralized database and research alliances to track abuse trends.

Conclusion

The Lancet's findings expose child sexual abuse as a **societal crisis beyond legal boundaries**. India must combine **stronger justice systems, education, community mobilization, and digital safeguards** to protect its youth.

6. GEN Z AND DEMOCRACY

Why in News?

- The Central Government recently invoked **Section 69A of the IT Act** to block the website and social media handles of the satirical **Cockroach Janta Party (CJP)**, which had rapidly gained **followers** by channeling youth anger over NEET leaks and unemployment.

Gen Z and Democracy

- **Youngest Voting Bloc:** Gen Z, born between **1997-2012**, represents India's newest and youngest cohort of voters, shaping the future of democratic participation.
- **Digital-First Democracy:** Unlike earlier generations rooted in **street protests and physical mobilization**, Gen Z experiences democracy primarily through **digital platforms, memes, and online activism**.
- **Creative Dissent:** Their engagement often takes the form of **satire, visual storytelling, and viral campaigns**, making political discourse more accessible and relatable.
- **Challenges to Institutions:** This digital-native activism also challenges **traditional democratic structures**, exposing gaps in responsiveness and inclusivity of mainstream politics.

Role of Social Media in Strengthening Democracy

- **Democratization of Dissent:** Social media empowers youth to bypass traditional media gatekeepers and voice grievances instantly.
- **Low-Cost Mobilization:** Online platforms reduce financial barriers to movement building. Unlike traditional rallies, digital campaigns require minimal resources, enabling even students and marginalized groups to organize effectively.
- **Rapid Accountability:** Governance failures are exposed in real time. For instance, viral posts on **unemployment statistics (CMIE 2025: 7.5% national rate)** pressured policymakers to respond quickly.
- **Global Solidarity:** Social media connects local struggles to international resistance models. Indian youth protests often draw parallels with **climate strikes led by Greta Thunberg**, creating a sense of shared global activism.

Need to Integrate Gen Z into Democracy

- **Prevent Alienation:** Without meaningful inclusion, Gen Z may abandon mainstream politics. Surveys (Lokniti-CSDS 2024) show **over 40% of first-time voters feel disconnected** from traditional parties.
- **Channel Satire into Policy:** Viral digital energy must be converted into legislative reforms. Example: Online campaigns against exam leaks can inform **education policy amendments**.
- **Mitigate Security Concerns:** Integrating youth dissent into democratic frameworks prevents governments from mistaking satire for foreign interference, reducing unnecessary censorship.
- **Harness Digital Skills:** Gen Z excels in **AI, data analytics, and public relations tools**, which can modernize outdated governance communication styles.
- **Ensure Continuity:** As older generations age out, the survival of democratic values depends on making institutions relevant to digitally native youth.
- By 2030, **Gen Z will form nearly 30% of India's electorate**, making their integration critical.

Challenges of Social Media Politics

- **Virtual vs Ground Reality:** The **Cockroach Janta Party (2025)** gained **2 crore followers in 10 days**, yet had no registered volunteers or offices, showing the gap between digital popularity and real-world mobilization.
- **Disinformation Loops:** NCRB (2024) noted that **over 30% of student protests were triggered by unverified exam leak claims**, spreading panic before official investigations.

- **Foreign Influence:** Genuine grievances can be hijacked by external actors. Intelligence reports (2025) flagged **cross-border bot networks** that mimicked domestic dissent to fuel polarization.
- **State Repression:** Viral movements often trigger censorship under laws like **Section 69A of the IT Act**, which allows blocking of platforms without public hearings. In 2025, **over 1,200 accounts were suspended** under emergency powers.
- **Polarization:** Meme culture reduces complex socio-economic issues into divisive rhetoric. For instance, unemployment debates were framed as **“cockroach vs parasite” tropes**, dehumanizing discourse.

Way forward

- **Protect Satire:** Safeguard humor, memes, and satire as legitimate forms of dissent. Countries like **Germany and UK** legally protect political satire under free speech laws.
- **Reform Section 69A:** Amend IT Act protocols to mandate **transparent hearings before blocking platforms**, ensuring accountability.
- **Youth Advisory Councils:** Institutionalize Gen Z voices in policymaking through **non-partisan youth assemblies** in state legislatures. Example: Kerala’s **Youth Parliament (2024)** successfully influenced education reforms.
- **AI Fact-Checking:** Deploy AI grids to detect **foreign bot networks** while safeguarding genuine domestic criticism. Meta’s 2025 pilot in India flagged **over 2 million fake accounts** linked to misinformation.

Conclusion

The rise and ban of the **Cockroach Janta Party** underscores the **disconnect between digital-first Gen Z and traditional democratic institutions**. Bridging this gap requires **legal reforms, cultural openness, and institutional innovation** to ensure youth dissent strengthens democracy rather than destabilizes it.

II. Social Empowerment, Communalism, Regionalism & Secularism.

1. INTERCASTE MARRIAGES AND THE UNFINISHED LAW

Why in News?

- Recently in Gujarat **violence and forced annulment of intercaste marriages**, highlighting the persistent gap between **constitutional guarantees** and **social realities** in India.

Constitutional Promise vs Social Reality

- **Legal Protection:** Intercaste marriage is legally safeguarded under the **Special Marriage Act, 1954** and reinforced by constitutional rights ensuring liberty and equality.
- **Persistent Social Resistance:** Despite these safeguards, **honour crimes, community boycotts, and coercion** remain widespread. NCRB (2023) recorded **145 honour killings**, many linked to intercaste unions.
- **Unfinished Law in Practice:** The law remains “unfinished” as **community councils, khap panchayats, and local police** often prioritize caste customs over constitutional guarantees.
- **Low Prevalence:** Surveys like NFHS-5 show that **only 5-6% of marriages in India are intercaste**, reflecting entrenched caste endogamy even after 75 years of independence.
- **Recent Cases:** Reports from Gujarat (2025-26) highlight **forced annulments and violence** against intercaste couples, proving the gap between law and lived reality.

Judicial Context

- **Low Prevalence:** Only **5-6% of marriages** in India are intercaste, even after 75 years of independence.
- **Supreme Court Directive (2018):** Declared interference by **Khap Panchayats** in consensual marriages illegal.

- **Recent Violence:** Gujarat (2025-26) reported multiple **honour killings and abductions** of women in intercaste unions.
- **Special Marriage Act Issues:** The 30-day public notice often exposes couples to **community hostility**.

Legal Framework

- **Article 21:** Recognizes the **Right to Marry** as part of life and liberty.
- **Special Marriage Act, 1954:** Allows marriage across caste and religion without conversion.
- **Hindu Marriage Act, 1955:** Permits intercaste marriages among Hindus, Sikhs, Jains, and Buddhists.
- **SC/ST Prevention of Atrocities Act, 1989:** Protects Dalit/Tribal partners from caste-based violence.
- **Incentive Schemes:** Central and state programs (e.g., **Dr. Ambedkar Scheme**) provide up to **₹2.5 lakh** for intercaste marriages involving Dalit partners.

Drivers of Intercaste Marriages in India

- **Higher Education:** Universities and colleges provide spaces where young men and women interact beyond caste boundaries. NFHS-5 data shows that **urban educated youth are twice as likely** to marry outside caste compared to rural counterparts.
- **Urban Migration:** Economic independence and migration to cities reduce community surveillance. Census 2011 highlighted that **over 30% of urban marriages involve partners from different social backgrounds**, reflecting greater openness.
- **Digital Connectivity:** Social media platforms allow individuals to bypass traditional matchmaking systems. A 2024 Pew survey found **over 25% of young Indians met partners online**, many across caste lines.
- **Judicial Activism:** Courts increasingly safeguard couples through **habeas corpus petitions** and directives against khap panchayat interference. Example: *Shakti Vahini vs Union of India (2018)* declared caste-based obstruction of marriages illegal.

Challenges

- **Caste Endogamy:** Customs like *Sata Pratha* enforce reciprocal marriage exchanges, making one union dependent on another. According to NFHS-5 (2021), **over 93% of marriages in India remain endogamous**, showing the persistence of caste-based restrictions.
- **Police Apathy:** Law enforcement often sides with community leaders instead of protecting couples. NCRB (2023) recorded **over 145 cases of honour killings**, but conviction rates remain below **30%**, reflecting weak enforcement.
- **Patriarchal Control:** Women are treated as custodians of caste purity, with families enforcing strict control. Studies show **women face 70% of honour-related violence**, underlining gendered vulnerability.
- **Moral Policing:** Syndicates and vigilante groups track couples, coercing them into separation. Reports from Gujarat (2025) documented **over 50 cases of forced annulment** of intercaste marriages.
- **Legal Lacunae:** The **30-day notice requirement under the Special Marriage Act (1954)** exposes couples to threats. Critics argue this provision has led to **community violence in over 20% of registered intercaste unions** (NHRC study, 2024).

Way Forward

- **Neutral Policing:** Enforce Supreme Court directives (*Shakti Vahini vs Union of India, 2018*) to protect consenting adults from khap panchayat interference. Example: Haryana Police's **special protection cells** reduced honour crime cases by **15% in 2023**.
- **Educational Reform:** Integrate intercaste marriage narratives into school curricula to normalize unions. UNESCO (2024) emphasized that **early social education reduces caste bias by 40%** among adolescents.

- **Annihilation of Caste:** Promote intercaste marriage as a tool for social integration, echoing Ambedkar's call that **"intermarriage is the real remedy for caste."**
- **Judicial Oversight:** Courts should proactively monitor coercion cases. Example: Madras High Court (2024) ordered **state-level monitoring cells** to track honour crimes.
- **Legal Amendments:** Remove public notice requirements under SMA to safeguard privacy and safety. Law Commission (2023) recommended **confidential registration mechanisms** to prevent harassment.

Conclusion

Inter caste marriages remain a **battlefield between constitutional liberty and entrenched caste patriarchy**. Legal frameworks exist, but without **social transformation and strict enforcement**, couples continue to face violence and exclusion.

C. GEOGRAPHY

I. Key Natural Resources

1. UPPER GANGA NO-DAM CONSENSUS

The Union Government informed the Supreme Court (Jan 2026) that it will **not support new hydropower projects** on the Alaknanda and Bhagirathi rivers.

Upper Ganga Hydropower Policy

- **2013 Kedarnath Disaster:** The devastating floods led the **Supreme Court to halt new environmental and forest clearances** for hydropower projects in Uttarakhand, citing ecological fragility.
- **Ravi Chopra Committee (2014):** This expert panel concluded that **23 out of 24 proposed projects would severely damage biodiversity**, strengthening the case against large-scale dam construction.
- **EB-II Committee (2015):** Tasked with assessing **cumulative impacts, seismic risks, glacial movements, and socio-economic factors**, it provided a broader framework for evaluating hydropower feasibility.
- **Policy Deadlock (2015-2021):** Ministries disagreed on the way forward; eventually, in **2021**, the Centre supported only **seven projects** that were either near completion or had major financial commitments.
- **Fresh Review (2024):** Under **Cabinet Secretary T.V. Somanathan**, a new panel recommended **five projects (Bowala Nandprayag, Devsari, Bhyundar Ganga, Jhalakoti, Urgam-II)**, reflecting a cautious approach to development in the fragile Himalayan ecosystem.

Key Concerns

- **Disaster Vulnerability:** Risks from **glacial lake outburst floods (GLOFs)**, highlighted by the **2023 Sikkim flood**.
- **Fragile Ecosystem:** Frequent disasters - **2021 Rishi Ganga floods, Joshimath subsidence** - show extreme vulnerability.
- **Ecological Sensitivity:** Region includes **Nanda Devi National Park, Valley of Flowers, Gangotri National Park**, and the **Bhagirathi Eco-Sensitive Zone**.
- **Cultural Significance:** The Ganga headstreams are considered **sacred**, adding a socio-religious dimension to conservation.

Centre's Position (2026)

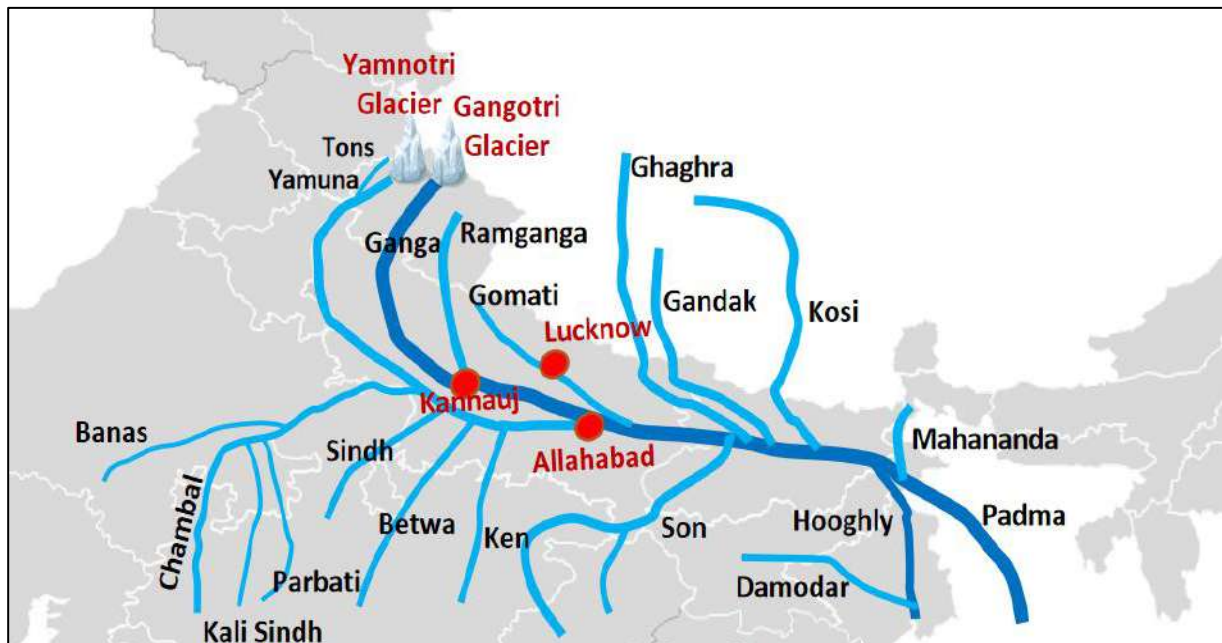
- Declared the **Alaknanda and Bhagirathi basins** as **"sui generis"** - unique in ecological, geological, and cultural terms.

- Opposed new hydropower projects, prioritising **environmental sustainability over economic gains**.
- Stressed the need for **renewable alternatives** like solar and wind energy in Uttarakhand.

Hydropower Projects - Large vs Small

- **Large Hydropower Projects**
 - **Capacity:** More than **25 MW**.
 - **Features:** Big reservoirs, major electricity supply, but high **ecological and social impact**. **Examples:** Tehri Dam, Bhakra Nangal, Sardar Sarovar.
- **Small Hydropower Projects (SHPs)**
 - **Capacity:** Up to **25 MW** (Micro ≤ 100 kW, Mini 101 kW-2 MW, Small 2-25 MW).
 - **Features:** Run-of-river type, minimal storage, lower impact, ideal for **rural electrification**. **Examples:** Darjeeling SHP, Chitral SHP.
- **Total Hydropower Capacity (2025):** ~46 GW. **Large Hydro (>25 MW):** ~40 GW. **Small Hydro (<25 MW):** ~6 GW.
- **Balance needed:** Large hydro for bulk power, small hydro for sustainable local energy.

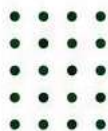
GANGA RIVER



- **Origin:** Begins at **Devprayag, Uttarakhand**, where the **Alaknanda** and **Bhagirathi** rivers meet.
- **Length:** Approximately **2,525 km (1,569 miles)**.
- **Countries:** Flows through **India and Bangladesh** (called **Padma** in Bangladesh).
- **Mouth:** Empties into the **Bay of Bengal**, forming the **world's largest delta (Sundarbans)**.
- **Basin Size:** Covers nearly **1 million sq. km**, supporting **~40% of India's population**.
- **Tributaries:** Major ones include **Yamuna, Ghaghara, Gandak, Kosi, Gomti, Son, Damodar, and Mahananda**.
- **Cities Along Ganga:** Haridwar, Rishikesh, Kanpur, Prayagraj, Varanasi, Patna, Kolkata, Dhaka.

Conclusion

The **Upper Ganga No-Dam Consensus** reflects India's shift from **development-first to ecology-first planning** in the Himalayas. It sets a precedent for **climate-resilient infrastructure policy**, balancing energy needs with **environmental and cultural preservation**.



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6	CA September 2026	11.10.2026
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GS 2 - GOVERNANCE, CONSTITUTION, POLITY, SOCIAL JUSTICE AND INTERNATIONAL RELATIONS

A. POLITY

I. Fundamental Rights, DPSPs and Fundamental Duties

1. Right to Safe Passage on Highways

Why in the news?

- The Supreme Court has declared that the safety of commuters against road accidents and the right to safe passage on highways are part of the fundamental right to life under Article 21 of the Constitution.

Road Safety Situation in India

- High Fatality Rate on National Highways:** National Highways constitute only about 2% of road length but contribute nearly 30% of road accident deaths.
- Risk Factors:** Overspeeding, illegal parking, poor road engineering, and inadequate enforcement increase accident risks.
- Blackspots on Highways:** Accident-prone zones continue to exist due to delayed corrective measures and lack of regular safety audits.
- Infrastructure Deficiencies:** Inadequate lighting, absence of signage, and poor emergency response systems worsen road safety outcomes.

Supreme Court Directions

- Ban on Commercial Structures:** The court prohibited construction and operation of commercial establishments within the right-of-way of National Highways.
- Objective of Restriction:** Intended to reduce encroachments, congestion, and unsafe roadside activities.
- Regulation of Parking and Stoppage:** Vehicles are permitted to stop or park only in designated areas.
- Importance of Controlled Parking:** Prevents accidents caused by sudden obstructions and illegal roadside halts.
- Accountability of Authorities:** The court stressed that avoidable road deaths reflect failure of the state's protective responsibilities.
- Need for Administrative Vigilance:** Authorities must proactively identify and rectify safety hazards.

Article 21 and Expanding Scope of Rights

- Dynamic Interpretation of Article 21:** The judiciary has expanded the meaning of life to include health, clean environment, privacy, and safety.
- Road Safety as Human Right:** Safe transport infrastructure is necessary for protecting citizens' lives and mobility.
- Positive Obligations of the State:** Governments must create safe public infrastructure and enforce laws effectively.
- Welfare State Responsibility:** Protection of citizens from preventable dangers is a constitutional obligation.

Government Initiatives for Road Safety

- Motor Vehicles (Amendment) Act, 2019:** Introduced stricter penalties for traffic violations and enhanced provisions for road safety.

- **National Road Safety Policy:** Emphasises safer roads, awareness campaigns, vehicle standards, and emergency care systems.
- **Integrated Safety Approach:** Combines engineering, enforcement, education, and emergency response.
- **Role of National Highways Authority of India (NHAI):** Responsible for highway construction, maintenance, and removal of accident-prone blackspots.
- **Need for Continuous Monitoring:** Regular audits and scientific road design are essential.

Challenges in Road Safety Governance

- **Weak Enforcement Mechanisms:** Traffic violations often continue due to inadequate monitoring and corruption.
- **Limited Institutional Coordination:** Multiple agencies with overlapping responsibilities reduce accountability.
- **Rapid Motorisation:** Increasing vehicle population has outpaced road infrastructure development and traffic management systems.
- **Urbanisation Pressure:** Expanding settlements along highways increase risks of pedestrian and vehicular accidents.
- **Poor Emergency Response:** Delays in trauma care and ambulance services increase mortality after accidents.
- **Golden Hour Importance:** Immediate medical assistance is critical for saving lives.

Way Forward

- **Scientific Road Engineering:** Highways should include proper signage, lighting, barriers, and designated parking facilities.
- **Regular Safety Audits:** Identification and removal of blackspots should become mandatory.
- **Strengthening Enforcement:** Greater use of surveillance technologies and stricter penalties can improve compliance with traffic rules.
- **Institutional Accountability:** Officials responsible for negligence should face legal and administrative consequences.
- **Public Awareness Measures:** Road safety education should be integrated into schools and mass awareness campaigns.
- **Behavioural Change:** Promoting responsible driving habits is essential for reducing fatalities.
- **Comprehensive Road Safety Framework:** India requires coordinated action involving judiciary, executive, law enforcement agencies, and citizens.
- **Protection of Right to Life:** Safe roads are indispensable for ensuring constitutional guarantees under Article 21.

II. Federal structure of the Constitution

1. Empowering India's Local Governments

Why in the news?

- Debate on Indian federalism has expanded to highlight weak urban local bodies and excessive state government control.

Introduction

India's federal framework includes Union, State, and local governments. Despite constitutional recognition through the 73rd and 74th Constitutional Amendments, urban local bodies continue to remain financially and administratively weak.

Status of the Third Tier

- **Urban Local Bodies:** Municipal corporations and municipalities are responsible for urban infrastructure and public services.

- **Constitutional Recognition:** The 74th Constitutional Amendment Act, 1992 granted constitutional status to urban local governments.
- **Limited Empowerment:** Functional and financial powers remain concentrated with state governments.

Major Challenges Faced by Urban Local Bodies

- **Low Workforce Capacity:** Local governments in India employ only a small share of total government staff compared to global economies.
- **Weak Revenue Generation:** Urban local bodies generate very low tax revenues relative to Gross Domestic Product.
- **Dependence on State Governments:** Reliance on grants and transfers restricts financial independence and decision-making authority.
- **Limited Administrative Control:** Municipal governments lack authority over appointments, promotions, and disciplinary actions of officials.

Issues in Urban Fiscal Governance

- **Poor Tax Base Expansion:** Property taxes and land-based revenues remain underutilised despite rapid urbanisation.
- **Low Urban Expenditure:** Spending by urban local bodies remains inadequate for growing infrastructure demands.
- **Vertical Fiscal Imbalance:** Financial resources are concentrated at Union and State levels rather than local governments.
- **Reduced Accountability:** Dependence on external funding weakens direct accountability between citizens and city administrations.

Land Governance and Revenue Constraints

- **Inefficient Land Policies:** Restrictive land laws distorted urban land markets and reduced efficient land utilisation.
- **Urban Land Ceiling Act, 1976:** The legislation fragmented land ownership without significantly improving public access to land.
- **Limited Monetisation of Public Land:** Large tracts of unused public land remain underutilised by government agencies.
- **Growth of Black Money:** Distorted land and rental markets encouraged corruption and unaccounted transactions in real estate.

Government Measures

- **Jawaharlal Nehru National Urban Renewal Mission:** Introduced reforms linked to urban infrastructure funding and governance improvement.
- **Atal Mission for Rejuvenation and Urban Transformation:** Focuses on water supply, sanitation, and urban infrastructure development.
- **Finance Commission Grants:** Increased fiscal transfers to strengthen local governance institutions.
- **Smart Cities Mission:** Encourages technology-driven urban planning and efficient service delivery.

Measures Needed for Strengthening Urban Governance

- **Enhancing Fiscal Autonomy:** Empower urban local bodies to effectively collect property taxes and user charges.
- **Administrative Reforms:** Provide local governments authority over municipal personnel and institutional management.
- **Deepening Decentralisation:** Ensure effective transfer of functions, finances, and functionaries to the third tier.

- **Citizen-Centric Governance:** Strengthen ward committees and participatory decision-making mechanisms.
- **Promoting Competitive Urban Governance:** Encourage competition among cities to improve infrastructure and investment climate.

III. Separation of Powers

1. Governor's Role in Hung Assembly

Why in the news?

Debate emerged over the Governor's constitutional role and floor test requirement following a hung Assembly verdict in Tamil Nadu election.

- **Hung Assembly:** A hung Assembly arises when no political party or alliance secures an absolute majority in the Legislative Assembly.
- **Governor's Constitutional Position:** The Governor acts as the constitutional head responsible for ensuring stable government formation under the Constitution.

Constitutional Provisions Related to Governor

- **Article 163:** The Governor acts on the aid and advice of the Council of Ministers except in discretionary matters.
- **Article 164:** The Governor appoints the Chief Minister and other ministers in the State.
- **Article 174:** The Governor can summon, prorogue, and dissolve the Legislative Assembly.
- **Article 356:** The Governor may recommend President's Rule if constitutional machinery fails in the State.

Role of Governor in a Hung Assembly

- **Ensuring Stable Governance:** The Governor's primary responsibility is facilitating formation of a stable and responsible government.
- **Assessing Majority Support:** The Governor consults parties, alliances, and independents to determine who can command legislative confidence.
- **Maintaining Constitutional Machinery:** The Governor must avoid constitutional breakdown and administrative uncertainty in the State.
- **Preventing Horse-Trading:** Timely decisions are necessary to avoid unethical political defections and inducements.

Order of Preference in Inviting Parties

- **Pre-Poll Alliance with Majority:** First preference is given to a pre-election alliance securing a majority in the Assembly.
- **Single Largest Party:** If no alliance has majority, the single largest party capable of proving support may be invited.
- **Post-Poll Coalition:** Parties forming alliances after elections and demonstrating majority support may also be considered.
- **President's Rule:** If no viable government emerges, recommendation for President's Rule becomes the final constitutional option.

Recommendations of Sarkaria Commission

- **Objective Constitutional Conduct:** Governors should function impartially and avoid personal or political preferences.
- **Priority Framework:** The Commission suggested a hierarchy for inviting parties in hung Assembly situations.

- **Reasonable Time Principle:** Governors must complete consultations within a reasonable period without indefinite delays.

Issues and Criticism

- **Delay in Government Formation:** Excessive delay may undermine democratic mandate and constitutional governance.
- **Possibility of Political Bias:** Governors are often accused of favouring political interests aligned with the Union government.
- **Ambiguity in Constitutional Conventions:** Absence of codified procedures leads to inconsistent practices across States.
- **Risk of Horse-Trading:** Delayed floor tests create opportunities for defections and political manipulation.

Need for Reforms

- **Codification of Conventions:** Clear constitutional guidelines should define Governor's role in hung Assemblies.
- **Time-Bound Floor Tests:** Mandatory timelines for floor tests can ensure quick and transparent government formation.
- **Strengthening Constitutional Neutrality:** Governors must function as impartial constitutional authorities rather than political actors.
- **Judicial Oversight:** Courts should continue safeguarding constitutional morality and democratic principles.

IV. Parliament and State legislatures

1. Rising Electoral Participation

Why in News?

- Recent electoral data shows sustained rise in voter turnout across most Indian States over the past decade.

Significance of Rising Voter Turnout

- **Strengthening Democracy:** Higher voter turnout reflects growing faith in democratic institutions and electoral processes.
- **Political Awareness:** Increased participation indicates rising political consciousness and awareness among citizens.
- **Inclusive Representation:** Greater voter engagement improves representativeness and legitimacy of elected governments.
- **Deepening Electoral Culture:** Sustained turnout growth demonstrates consolidation of democratic participation across generations.
- **Enhanced Political Competition:** Strong electoral participation encourages parties to address public concerns and improve governance accountability.

Factors Contributing to Rising Participation

- **Improved Electoral Administration:** Better voter registration drives, Election Commission outreach, and polling infrastructure improved accessibility.
- **Political Mobilisation:** Political parties increasingly mobilise voters through targeted campaigns and grassroots engagement.
- **Increased Literacy and Awareness:** Expansion of education and media access has enhanced understanding of electoral rights.

- **Digital and Social Media Influence:** Technology and social media platforms have amplified political communication and voter awareness.
- **Youth Participation:** Rising youth population and first-time voters contribute to expanding electoral participation.
- **Women's Participation:** Increasing female voter turnout in several States has significantly strengthened democratic participation.

Role of Special Intensive Revision (SIR)

- **Electoral Roll Revision:** Special Intensive Revision aims to update and verify voter rolls for greater electoral accuracy.
- **Impact on Turnout Percentages:** Revision exercises may increase turnout percentages by recalibrating the eligible voter denominator.
- **Additive Rather Than Foundational:** The data suggests SIR only supplemented an already existing long-term upward trend in participation.

States Showing Decline or Stagnation

- **Punjab:** Voter turnout declined from 76.04% in 2007 to 72.15% in 2022.
- **Haryana:** Participation reduced from 72.37% in 2009 to 67.89% in 2024.
- **Northeastern Variations:** Meghalaya, Mizoram, Nagaland, and Tripura experienced stagnation or decline in turnout levels.
- **Local Political Factors:** Reduced competition, voter fatigue, administrative challenges, or disillusionment may influence declining turnout.

Challenges Related to Electoral Participation

- **Regional Variations:** Uneven participation patterns highlight disparities in political engagement across States.
- **Electoral Violence and Intimidation:** In some areas, coercion and political conflict may affect genuine voter participation.
- **Urban Voter Apathy:** Certain urban regions continue witnessing relatively lower voter turnout despite awareness campaigns.
- **Migration and Documentation Issues:** Migrant populations often face difficulties in voter registration and participation.

Constitutional and Democratic Importance

- **Universal Adult Franchise:** Rising participation strengthens the constitutional principle of universal adult suffrage under Article 326.
- **Democratic Legitimacy:** High turnout enhances legitimacy and accountability of representative institutions.
- **Citizen-State Relationship:** Electoral participation reflects active public engagement with governance and policymaking.

Way Forward

- **Strengthening Electoral Literacy:** Continuous voter awareness programmes should target youth, migrants, and marginalised communities.
- **Improving Accessibility:** Better polling infrastructure and digital registration systems can enhance participation further.
- **Addressing Regional Disparities:** States witnessing declining turnout require focused political and administrative interventions.

- **Encouraging Informed Participation:** Civic education should promote issue-based voting and democratic values.
- **Ensuring Free and Fair Elections:** Strong institutional safeguards are necessary to maintain public trust in electoral processes.

2. Scope of Legal Fiction in Party Mergers

Why in the news?

- Debate intensified over anti-defection law after recent merger decisions involving legislators and interpretation of deeming clauses.

Meaning and Purpose of Legal Fiction

- **Concept in Jurisprudence:** Legal fiction enables law to adapt to social and institutional changes without altering foundational legal structures.
- **Sir Henry Maine's View:** Sir Henry Maine considered legal fiction one of the major instruments through which legal systems evolve.
- **Lon Fuller's Principle:** Lon Fuller argued that legal fictions remain legitimate only when their artificial nature is openly acknowledged.
- **Limited Applicability:** Legal fictions are intended for specific legal purposes and cannot be expanded beyond their defined scope.

Legal Fiction in Indian Constitutional Law

- **Bengal Immunity Case (1955):** The Supreme Court held that a legal fiction must remain confined to the purpose for which it was created.
- **Doctrine of Limited Extension:** Courts cannot extend deeming provisions beyond their legitimate constitutional or statutory field.
- **J.K. Cotton Spinning Case (1987):** The Supreme Court reiterated that legal fictions should not create unintended substantive consequences.
- **Registrar Cane Cooperative Societies Case (2026):** The Court reaffirmed that deeming clauses cannot override the actual purpose and structure of legislation.
- **Paragraph 4(2) of the Tenth Schedule Anti-Defection Law:** The Tenth Schedule was added through the Fifty-Second Constitutional Amendment Act, 1985 to curb political defections.
- **Merger Provision:** Paragraph 4 protects legislators from disqualification if their original political party merges with another party.
- **Two-Third Requirement:** Protection applies only when at least two-thirds of legislators in the legislature party support the merger.
- **Purpose of Deeming Clause:** The clause verifies whether a genuine merger occurred in the original political party.

Issue in Interpretation of Merger Provision

- **Constitutive versus Verifying Role:** Debate exists on whether two-thirds legislators themselves can constitute a merger without party approval.
- **Judicial Clarification:** Courts have held that the substantive merger must occur in the original political party itself.
- **Rajendra Singh Rana Case (2007):** The Supreme Court ruled that legislative numbers alone cannot substitute actual party merger decisions.

- **Kuldeep Bishnoi Case (2011):** Punjab and Haryana High Court reaffirmed that legislators alone cannot independently effect a merger.

Importance of the Anti-Defection Law

- **Political Stability:** The Tenth Schedule seeks to prevent frequent defections and maintain stable governments.
- **Ethical Governance:** It discourages opportunistic political behaviour motivated by office or personal gain.
- **Preserving Electoral Mandate:** Anti-defection provisions protect voter trust and party-based electoral commitments.

Criticism of the Anti-Defection Law

- **Limits Legislative Freedom:** Legislators often lose autonomy and independent decision-making capacity.
- **Strengthening High Command Culture:** Political party leadership gains excessive control over legislators' voting behaviour.
- **Ambiguity in Merger Clauses:** Interpretational disputes create legal uncertainty and inconsistent constitutional practices.

Way Forward

- **Strict Interpretation of Deeming Clauses:** Courts and constitutional authorities should confine legal fictions to their intended purposes.
- **Strengthening Constitutional Morality:** Anti-defection provisions should balance party discipline with democratic accountability.
- **Independent Adjudicatory Mechanism:** Decisions regarding defections and mergers may be transferred from Speakers to independent tribunals.
- **Judicial Consistency:** Uniform constitutional interpretation is necessary to prevent misuse of merger provisions.

V. The Judiciary

1. Supreme Court Observation on Hate Speech

Why in the news?

- Supreme Court ruled that hate speech threatens fraternity and constitutional order, stressing stronger enforcement of existing laws.

Hate Speech and Constitutional Fraternity

- **Supreme Court Observation:** The Supreme Court stated that hate speech originates from an "us versus them" mindset fostering exclusion and hostility.
- **Threat to Constitutional Values:** Such speech weakens fraternity, dignity, and social harmony in a diverse society.
- **Judicial Position on New Laws:** The Court declined to direct enactment of separate hate speech legislation.
- **Respect for Separation of Powers:** Law-making falls within the exclusive domain of Parliament and legislatures.

Meaning of Hate Speech

- **Nature of Hate Speech:** Hate speech includes expressions promoting hatred, discrimination, or violence against groups based on religion, caste, ethnicity, language, or identity.
- **Social Consequences:** It deepens communal tensions and undermines democratic coexistence.
- **Rumour-Mongering:** Spread of false or inflammatory information often aggravates social unrest and violence.
- **Digital Amplification:** Social media platforms accelerate circulation of divisive narratives.

Constitutional Provisions Related to Hate Speech

- **Article 19(1)(a):** Guarantees freedom of speech and expression as a fundamental right.
- **Democratic Importance:** Free speech is essential for political participation and accountability.
- **Article 19(2):** Permits reasonable restrictions on speech in interests of public order, morality, sovereignty, and integrity.
- **Balancing Rights and Responsibilities:** Freedom cannot justify incitement to hatred or violence.
- **Article 14 and Article 21:** Equality before law and right to life protect dignity and equal treatment of all citizens.
- **Protection Against Discrimination:** Hate speech violates constitutional guarantees of equality and dignity.
- **Fraternity in the Preamble:** The Constitution emphasises fraternity assuring dignity and unity of the nation.
- **Social Cohesion Objective:** Fraternity promotes mutual respect among diverse communities.

Challenges Posed by Hate Speech

- **Communal Polarisation:** Hate speech intensifies divisions based on religion, caste, or ethnicity.
- **Threat to National Unity:** Polarisation weakens democratic stability and social integration.
- **Mob Violence and Hate Crimes:** Rumours and inflammatory rhetoric often trigger lynching and targeted violence.
- **Public Order Risks:** Such incidents undermine rule of law.
- **Digital Media Challenges:** Social media algorithms amplify sensational and divisive content rapidly.
- **Difficulty in Regulation:** Cross-border platforms complicate enforcement efforts.
- **Selective Enforcement:** Political influence and institutional bias may weaken impartial legal action.
- **Erosion of Public Trust:** Uneven implementation damages credibility of institutions.

Way Forward

- **Strengthening Law Enforcement:** Police and administrative agencies must ensure prompt and impartial action against hate speech.
- **Institutional Accountability:** Effective implementation is essential for deterrence.
- **Preventing Online Radicalisation:** Technology platforms must cooperate with lawful investigations.
- **Civic and Constitutional Education:** Schools and public institutions should promote constitutional values of fraternity and tolerance.
- **Behavioural Change:** Awareness can reduce prejudice and misinformation.

2. Should the PIL Jurisdiction be Reconsidered?

Why in the news?

- Supreme Court reconsidered Public Interest Litigation jurisdiction amid concerns over agenda-driven petitions and misuse of judicial processes.

Significance of Public Interest Litigation

- **Public Interest Litigation (PIL):** Public Interest Litigation emerged in the 1970s to expand access to justice for poor, marginalised, and disadvantaged sections of society.
- **Constitutional Basis:** PIL jurisdiction is mainly exercised under Articles 32 and 226 of the Constitution, enabling courts to protect fundamental rights and constitutional values.
- **Access to Justice:** PIL relaxed the doctrine of locus standi, allowing socially conscious individuals to represent vulnerable and voiceless groups.
- **Judicial Activism:** PIL enabled courts to address executive inaction in areas such as bonded labour, prison reforms, environment, and human rights.

- **Protection of Fundamental Rights:** PIL strengthened constitutional governance by ensuring accountability of state authorities and safeguarding citizens' rights.
- **Democratisation of Judiciary:** It transformed courts into accessible institutions for public grievances beyond conventional private disputes.

Concerns Regarding Present PIL Jurisdiction

- **Agenda-Driven Litigation:** Several PILs are allegedly motivated by political, ideological, or publicity interests rather than genuine public welfare.
- **Judicial Overreach:** Courts sometimes enter policy domains reserved for the legislature and executive, raising separation of powers concerns.
- **Exclusion of Stakeholders:** In some PILs, directly affected parties are not adequately represented, undermining principles of natural justice.
- **Ambush PILs:** Frivolous petitions are occasionally filed to secure early dismissals and obstruct genuine litigants from seeking relief.
- **Institutional Limitations:** Courts may lack administrative expertise to manage complex socio-economic and policy-related disputes effectively.
- **Weak Enforcement:** Non-compliance with judicial directives in PIL cases often creates a culture of impunity among authorities.

Arguments Against Reconsidering PIL Jurisdiction

- **Persistent Social Inequalities:** Poor and marginalised communities still face structural barriers in accessing courts and legal remedies.
- **Check on Executive Excesses:** PIL remains an important mechanism to challenge arbitrary demolitions, custodial violence, and rights violations.
- **Constitutional Morality:** PIL promotes rule of law and constitutional accountability even where affected persons cannot directly approach courts.
- **Judicial Innovation:** PIL has contributed significantly to environmental jurisprudence, labour rights, and social justice reforms in India.

Need for Reforms in PIL Jurisdiction

- **Restrict Frivolous Petitions:** Courts should impose stricter scrutiny and exemplary costs on malicious or publicity-oriented litigations.
- **Strengthen Procedural Safeguards:** Directly affected stakeholders must be impleaded to ensure fairness and inclusive adjudication.
- **Clear Amicus Curiae Guidelines:** Defined responsibilities for amicus curiae can prevent excessive influence and maintain procedural balance.
- **Focus on Rights Violations:** PILs should primarily address constitutional rights violations and executive inaction rather than policy formulation.
- **Post-Judgment Monitoring:** Courts should establish effective compliance mechanisms and periodic monitoring for implementation of directives.
- **Promote Representative Standing:** PIL jurisdiction should prioritise petitions filed on behalf of genuinely disadvantaged and voiceless groups.

Way Forward

- **Balanced Judicial Approach:** Courts must preserve PIL as a tool for social justice while preventing its misuse for partisan interests.

- **Institutional Accountability:** Stronger procedural discipline, transparency, and stakeholder participation can enhance PIL legitimacy and effectiveness.
- **Constitutional Governance:** Reformed PIL jurisdiction should continue upholding constitutional rights, rule of law, and democratic accountability.

3. Judicial Reforms

Why in the news?

- President Droupadi Murmu has promulgated an ordinance increasing the number of judges in the Supreme Court to 37 - excluding the Chief Justice of India.

Constitutional Basis for Increasing Supreme Court Strength

- **Article 124 of the Constitution:** It empowers Parliament to determine the number of Supreme Court judges through legislation beyond the original constitutional limit.
- **Ordinance under Article 123:** The President promulgated the ordinance as Parliament was not in session and immediate action was necessary.
- **Supreme Court (Number of Judges) Amendment Ordinance, 2026:** The ordinance amended the Supreme Court (Number of Judges) Act, 1956 by increasing judges from 33 to 37 excluding the Chief Justice of India.

Need for Increasing Judicial Strength

- **Rising Pendency of Cases:** The Supreme Court currently faces a backlog exceeding 93,000 cases, threatening to cross one lakh soon.
- **Post-Pandemic Surge in Litigation:** Increased adoption of e-filing after COVID-19 has accelerated the inflow of cases before the apex court.
- **Vacancies and Retirements:** Existing judicial vacancies and scheduled retirements in 2026 have intensified the pressure on judicial functioning.
- **Delay in Justice Delivery:** High pendency affects timely adjudication and undermines the constitutional principle of speedy justice.

Evolution of Supreme Court Judge Strength

- **Original Constitutional Vision:** The Constitution initially provided for the Chief Justice of India and not more than seven judges.
- **Gradual Expansion Over Time:** Judicial strength increased periodically through amendments in 1960, 1977, 1986, 2009, 2019, and now 2026.
- **Current Sanctioned Strength:** With the amendment, total Supreme Court strength including the Chief Justice of India rises to 38 judges.

Significance of the Ordinance

- **Strengthening Judicial Capacity:** Additional judges may improve disposal rates and reduce case backlog in the apex court.
- **Improving Access to Justice:** Faster adjudication enhances public confidence in the judiciary and constitutional governance.
- **Supporting Constitutional Adjudication:** Increased strength enables better handling of constitutional benches and complex litigation.
- **Reducing Burden on Existing Judges:** More judges can ease workload pressures and improve efficiency in judicial administration.

Challenges Beyond Increasing Numbers

- **Need for Judicial Reforms:** Pendency also requires procedural reforms, case management systems, and technological integration.
- **Vacancy Filling Delays:** Timely appointments through the collegium process remain essential for effective implementation.
- **Infrastructure Constraints:** Expansion of judicial strength must be supported by adequate courtrooms, staff, and digital infrastructure.
- **Balancing Quality and Quantity:** Judicial appointments should maintain competence, diversity, and independence alongside numerical expansion.

Way Forward

- **Institutional Reforms:** Strengthening alternative dispute resolution, digitisation, and judicial infrastructure can complement increased judicial strength.
- **Timely Appointments:** Coordination between the judiciary and executive is necessary to avoid prolonged vacancies.
- **Efficient Case Management:** Use of artificial intelligence, e-courts, and streamlined procedures can reduce pendency substantially.
- **Preserving Judicial Independence:** Expansion of strength should continue alongside safeguarding constitutional values and judicial autonomy.

4. Sedition Law under Section 124A

Why in the news?

- Supreme Court allowed hearing of pending sedition cases if accused persons have no objection to judicial proceedings.

About Sedition Law

- **Meaning of Sedition:** Sedition refers to acts or speech allegedly inciting hatred, contempt, or disaffection against the government.
- **Colonial Origin:** Section 124A was introduced by the British colonial administration to suppress nationalist movements.
- **Punishment under Law:** The provision prescribed imprisonment for life or imprisonment up to three years with fine.
- **Use Against Freedom Fighters:** Leaders like Bal Gangadhar Tilak and Mahatma Gandhi were charged under sedition law.

Constitutional and Legal Concerns

- **Freedom of Speech Issues:** Critics argue that sedition law violates Article 19(1)(a) guaranteeing freedom of speech and expression.
- **Vague Interpretation:** Terms like “disaffection” and “hatred” are considered broad and open to misuse.
- **Chilling Effect on Dissent:** Fear of prosecution may discourage criticism of government policies and democratic participation.
- **Low Conviction Rate:** Several sedition cases end without conviction, raising concerns regarding arbitrary arrests.

Way Forward

- **Comprehensive Legal Review:** Reassess sedition provisions in line with democratic and constitutional principles.

- **Clear Legal Standards:** Define precise criteria to prevent misuse against legitimate criticism and dissent.
- **Strengthening Safeguards:** Ensure judicial scrutiny before registration of sedition-related cases.
- **Promoting Democratic Freedoms:** Encourage lawful dissent and constructive criticism as essential democratic values.

VI. Representation of People's Act

1. Forest Rights Act (FRA) 2006

Why in the news?

- Allahabad High Court reaffirmed Forest Rights Act supremacy while protecting Tharu tribal community's forest and grazing rights claims.

About the Tharu Tribal Community

- **Location and Habitat:** The Tharu tribe primarily inhabits the Terai region of Uttar Pradesh, Uttarakhand, and parts of Nepal near forested areas.
- **Scheduled Tribe Status:** Tharus are recognised as a Scheduled Tribe and traditionally depend on forests for agriculture, grazing, fishing, and minor forest produce.
- **Unique Cultural Identity:** The community possesses distinct cultural traditions, language, folk practices, and nature-based lifestyles closely linked with forests.
- **Traditional Ecological Knowledge:** Tharus have historically practised sustainable forest resource management and biodiversity conservation through indigenous knowledge systems.
- **Socio-Economic Challenges:** The community faces issues such as land insecurity, displacement, poverty, restricted forest access, and administrative neglect.

Significance of the Allahabad High Court Judgment

- **Supremacy of Later Laws:** The Court reaffirmed that provisions of a later law override inconsistent earlier court orders and statutes.
- **Protection of Tribal Rights:** The judgment upheld the rights of the Tharu tribal community against arbitrary rejection of forest claims.
- **Recognition of FRA Primacy:** The Court recognised that Forest Rights Act provisions prevail over conflicting forest and wildlife regulations.
- **Relief for Forest Dwellers:** The judgment offers legal relief to forest-dwelling communities facing eviction and denial of rights across India.

Key Provisions of the Forest Rights Act

- **Recognition of Traditional Rights:** FRA recognises land, habitation, grazing, and community forest resource rights of forest dwellers.
- **Role of Gram Sabha:** Gram Sabha acts as the statutory authority for initiating and verifying forest rights claims.
- **Protection Against Eviction:** FRA prohibits eviction or removal of forest dwellers until recognition and verification procedures are completed.
- **Community Forest Governance:** The Act empowers communities to protect, conserve, and manage forest resources sustainably.

Issues in Implementation of the Forest Rights Act

- **Administrative Resistance:** Forest and district authorities frequently continue applying older forest laws despite FRA provisions.

- **Illegal Eviction Orders:** Authorities issue eviction notices under colonial-era laws such as the Tamil Nadu Forest Act, 1882.
- **Judicial Misinterpretation:** Some courts have dismissed claims under FRA by treating forest dwellers as encroachers.
- **Weak Accountability Mechanisms:** Violations of FRA provisions often go unpunished despite statutory safeguards in the law.
- **Marginalisation of Gram Sabha:** Statutory powers of Gram Sabhas are frequently ignored in decision-making processes.

Conflict Between FRA and Earlier Forest Laws

- **Colonial Forest Governance:** Earlier forest laws prioritised state control and conservation over traditional livelihood rights of forest communities.
- **Contradictions with FRA:** Restrictions on grazing, habitation, and cultivation often directly conflict with rights recognised under FRA.
- **Judicial Reliance on Older Orders:** Authorities sometimes continue citing pre-FRA court orders to deny legitimate rights claims.
- **Centre-State Legal Conflict:** FRA, being a central law, overrides inconsistent State forest laws under constitutional principles.

Issue of Grazing Rights

- **Recognition Under FRA:** FRA explicitly recognises grazing rights of forest dwellers, including in protected forest areas.
- **Tamil Nadu Grazing Ban:** Madras High Court orders restricting grazing in forests overlooked provisions guaranteeing grazing rights under FRA.
- **Livelihood Concerns:** Grazing restrictions directly affect pastoral communities and traditional forest-based livelihoods.
- **Conservation versus Rights Debate:** The issue highlights tensions between wildlife conservation approaches and community rights-based governance.

Constitutional and Governance Dimensions

- **Article 21:** Denial of forest rights affects the Right to Life and livelihood of tribal and forest-dwelling communities.
- **Fifth Schedule Protections:** Tribal communities in Scheduled Areas enjoy constitutional safeguards regarding land and resource governance.
- **Decentralised Governance:** FRA strengthens participatory democracy through Gram Sabha-led decision-making mechanisms.
- **Social Justice Objective:** The Act seeks to correct historical injustice committed against forest-dwelling communities during colonial and post-colonial periods.

Challenges in Effective Enforcement

- **Institutional Bias:** Forest administration often prioritises conservation-centric approaches over rights-based frameworks.
- **Lack of Awareness:** Many forest dwellers remain unaware of their statutory rights and legal protections under FRA.
- **Delayed Claims Processing:** Bureaucratic delays and procedural complexities hinder timely recognition of rights.
- **Weak Monitoring:** State-Level Monitoring Committees often fail to enforce accountability against violating authorities.

Way Forward

- **Strict Enforcement of FRA:** Governments and courts must ensure full implementation of FRA provisions across all States.
- **Strengthening Gram Sabhas:** Greater authority and institutional support should be provided to Gram Sabhas in forest governance.
- **Judicial Sensitisation:** Courts should adopt rights-based interpretations consistent with constitutional protections and FRA objectives.
- **Balancing Conservation and Rights:** Sustainable forest governance must integrate biodiversity conservation with livelihood rights of indigenous communities.
- **Accountability Mechanisms:** Authorities violating FRA provisions should face legal and administrative consequences.

Conclusion

Correcting Historical Injustice: Effective implementation of the Forest Rights Act is essential for protecting tribal rights, strengthening participatory governance, and ensuring social justice in forest administration.

B. GOVERNANCE

I. Government policies and Interventions

1. The RTE Act and the Idea of Social Inclusion

Why in the news?

- Supreme Court reaffirmed Section 12(1)(c) of the Right to Education Act as a constitutional tool for social integration.

Section 12(1)(c) of Right to Education (RTE) Act, 2009

- **Provision under the Right to Education Act:** Section 12(1)(c) mandates private unaided schools to reserve 25% seats for disadvantaged and economically weaker children.
- **Objective of the Provision:** Seeks to promote equal educational opportunities and social integration in classrooms.
- **Supreme Court Judgment, 2026:** The Supreme Court reaffirmed that the provision operationalises equality of status guaranteed under the Constitution.
- **Shared Learning Spaces:** The Court highlighted the importance of children from diverse socio-economic backgrounds studying together.

Constitutional Basis

- **Article 21A of the Constitution:** Guarantees free and compulsory education for children between 6 and 14 years of age.
- **Right-Based Approach:** Education is recognised as a fundamental right essential for dignity and development.
- **Equality and Social Justice Principles:** Section 12(1)(c) reflects constitutional ideals under Articles 14, 15, and 38 promoting equality and reduction of social inequalities.
- **Transformative Constitutionalism:** The provision aims to dismantle barriers created by birth-based socio-economic divisions.
- **Directive Principles of State Policy:** Supports goals of equitable social order and protection of weaker sections.
- **Inclusive Nation Building:** Education becomes an instrument of social mobility and democratic integration.

Purpose of Section 12(1)(c)

- **Promoting Social Integration:** Children from privileged and disadvantaged backgrounds share common educational experiences.
- **Breaking Social Segregation:** Encourages interaction beyond caste, class, and income barriers.
- **Access to Quality Education:** Economically weaker students gain entry into reputed private schools previously inaccessible to them.
- **Expanding Opportunities:** Exposure to better infrastructure, peer networks, and institutional culture enhances aspirations.
- **Creation of Social Capital:** Students gain confidence, communication skills, and broader social exposure.
- **Long-Term Impact:** Education can alter family trajectories and reduce intergenerational poverty.

Challenges in Implementation

- **Resistance from Private Schools:** Some institutions continue discriminatory practices or resist meaningful inclusion of disadvantaged students.
- **Hidden Financial Burdens:** Families often bear costs related to uniforms, books, transport, and extracurricular activities.
- **Uneven Implementation Across States:** Variations exist in awareness, outreach, reimbursements, and grievance redress mechanisms.
- **Administrative Delays:** Delayed reimbursements discourage effective participation by schools.
- **Social Discrimination Risks:** Students may face subtle exclusion or stigma within classrooms and school activities.
- **Need for Sensitisation:** Teachers and administrators require training in inclusive education practices.

Importance for India

- **Reduction of Social Inequality:** Shared educational spaces help bridge socio-economic divides in society.
- **Democratic Citizenship:** Inclusive classrooms promote empathy, tolerance, and constitutional values among children.
- **Human Capital Development:** Better educational access improves employability and socio-economic mobility.
- **Inclusive Growth:** Education becomes a tool for equitable national development.

Way Forward

- **Balanced Educational Ecosystem:** Public and private schools should complement each other in ensuring universal education.
- **Timely Reimbursements:** States must ensure efficient financial support mechanisms for participating schools.
- **Eliminating Hidden Costs:** Private schools should be prohibited from imposing indirect financial burdens on disadvantaged families.
- **Ensuring Genuine Inclusion:** Equality should extend beyond admission to full participation in school life.

2. 546 Die Every Day in Traffic Accidents

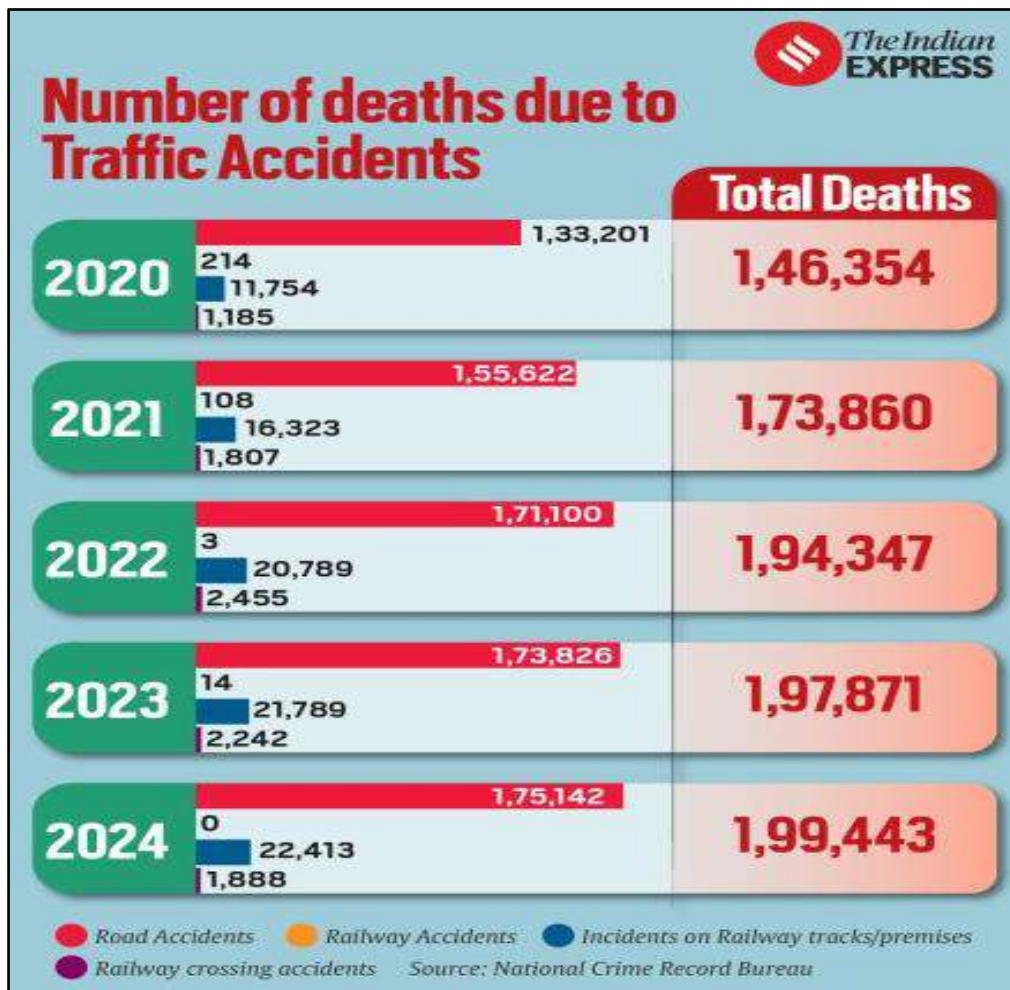
Why in the news?

- National Crime Records Bureau report revealed rising traffic deaths and growing socio-economic burden of road accidents in India.

Key Findings of the National Crime Records Bureau Report

- **Rising Traffic Deaths:** Traffic-related deaths increased from 1.98 lakh in 2023 to 1.99 lakh in 2024.
- **High Daily Fatalities:** India witnessed an average of 546 traffic-related deaths every day in 2024.

- **Increase in Accidents:** Total traffic accidents increased from 4.91 lakh in 2023 to 4.95 lakh in 2024.
- **Injury Burden:** Around 4.52 lakh people were injured in traffic accidents during 2024.



Road Accidents as Major Cause

- **Dominant Share of Fatalities:** Road accidents accounted for 1.75 lakh deaths, constituting nearly 88% of traffic-related fatalities.
- **Preventable Nature:** Most traffic-related deaths arise from preventable causes unlike natural disasters and unavoidable accidents.
- **Socio-Economic Losses:** Road crashes alone impose costs amounting to nearly 3.14% of India's Gross Domestic Product.

State-wise Trends

- **Highest Fatalities:** Uttar Pradesh recorded the highest traffic deaths followed by Tamil Nadu and Maharashtra.
- **Concentration of Deaths:** These three States together accounted for nearly one-third of all traffic-related deaths in 2024.
- **Regional Variations:** Differences in infrastructure, enforcement, urbanisation, and vehicle density influence accident trends across States.

Major Causes of Road Accidents

- **Overspeeding:** Speeding contributed to nearly 58% of total road deaths, making it the leading cause of accidents.
- **Dangerous Driving:** Careless and reckless driving accounted for over one-fourth of road accident fatalities.

- **Driving Under Influence:** Alcohol and drug consumption contributed to a significant number of road accidents.
- **Weather and Animal Crossings:** Poor visibility, adverse weather, and animal crossings also caused road mishaps.
- **Peak Accident Hours:** Most accidents occurred between 6 PM and 9 PM due to heavy traffic and reduced visibility.

Vehicle-wise Accident Analysis

- **Two-Wheelers Most Vulnerable:** Two-wheelers accounted for the highest number of fatal accidents with over 84,000 deaths.
- **Pedestrian Fatalities:** Pedestrians formed the second-largest category of road accident victims.
- **Helmet and Seatbelt Issues:** Non-compliance with safety measures worsens fatality rates among riders and passengers.

National Highways and Accident Burden

- **Disproportionate Risk:** National highways constitute only 2.1% of road length but account for nearly 30% of accidents.
- **High-Speed Corridors:** Faster vehicle movement and heavy freight traffic increase accident severity on highways.
- **State Highways:** State highways accounted for 22% of total road accidents in India.

Railway-Related Traffic Deaths

- **Deaths on Railway Tracks:** Over 17,000 deaths occurred due to falls from trains or collisions on railway tracks.
- **Suburban Rail Congestion:** Maharashtra recorded the highest such fatalities due to overcrowded suburban railway networks.
- **Railway Premises Accidents:** Incidents such as fires and explosions on railway premises caused over 5,000 deaths.

Reasons Behind Rising Road Accidents

- **Rapid Motorisation:** Growth in vehicle ownership has increased traffic congestion and accident risks.
- **Weak Enforcement:** Inadequate enforcement of traffic rules contributes to unsafe driving practices.
- **Poor Road Infrastructure:** Defective roads, inadequate signage, and poor lighting increase accident vulnerability.
- **Urbanisation and Congestion:** Expanding cities and traffic density create pressure on transport infrastructure.
- **Lack of Public Awareness:** Limited awareness regarding road safety norms affects responsible road behaviour.

Government Initiatives for Road Safety

- **Motor Vehicles Amendment Act, 2019:** Enhanced penalties for traffic violations and strengthened road safety regulations.
- **National Road Safety Policy:** Focuses on engineering, enforcement, education, and emergency care measures.
- **Good Samaritan Guidelines:** Legal protection is provided to bystanders assisting accident victims.
- **Black Spot Identification:** The government identifies accident-prone zones for corrective engineering interventions.
- **Integrated Road Accident Database:** Data-driven monitoring improves accident analysis and policy planning.

Way Forward

- **Strengthening Enforcement:** Technology-driven surveillance and stricter enforcement of traffic regulations are necessary.

- **Improving Road Engineering:** Safer road design, signage, lighting, and pedestrian infrastructure should be prioritised.
- **Public Awareness Campaigns:** Continuous education on helmet use, seatbelts, and safe driving practices is essential.
- **Expanding Public Transport:** Reliable public transport can reduce congestion and accident risks.
- **Enhancing Emergency Care:** Faster ambulance services and trauma care facilities are crucial for reducing fatalities.
- **Adopting Vision Zero Approach:** India can adopt a holistic strategy targeting zero preventable road deaths through integrated planning.

3. Press Freedom in India

Why in News?

- Debate over India's press freedom ranking intensified after criticism by a Norwegian journalist and concerns over government actions.

World Press Freedom Index

- **Reporters Without Borders:** The index is published annually by Reporters Without Borders to assess global press freedom conditions.
- **India's Ranking:** India was ranked 157th in the 2026 World Press Freedom Index.
- **Assessment Criteria:** Rankings are based on political context, legal framework, economic conditions, journalist safety, and media independence.
- **Global Comparisons:** Concerns were raised regarding countries with restrictive political systems being ranked above India.

Concerns Regarding India's Press Freedom

- **Government Pressure on Media:** Critics argue that investigative agencies and regulatory measures create pressure on media institutions.
- **Limited Press Interactions:** Questions have been raised over limited direct media engagement by political leadership.
- **Digital Restrictions:** Blocking or withholding of social media accounts has generated concerns about online freedom of expression.
- **Trolling and Polarisation:** Toxic online campaigns and intimidation affect independent journalism and public discourse.

Arguments Highlighting India's Democratic Space

- **Plurality of Opinions:** Indian media continues to host diverse political and ideological viewpoints.
- **Vibrant Public Debate:** Television, digital media, and social platforms regularly witness open criticism of governments and institutions.
- **Judicial Safeguards:** Constitutional protections and judicial interventions continue to provide safeguards for free expression.
- **Electoral Democracy:** India remains a functioning electoral democracy with active opposition and public participation.

Issues with Global Press Freedom Rankings

- **Comparative Inconsistencies:** Questions arise when authoritarian or military-dominated states receive better rankings than democratic nations.

- **Methodological Concerns:** Subjective indicators may affect consistency and neutrality in rankings.
- **Geopolitical Bias Allegations:** Some critics argue that Western institutions may reflect geopolitical or ideological preferences.
- **Contextual Differences:** Diverse political, social, and security conditions across countries complicate uniform assessment standards.

Challenges to Press Freedom in India

- **Concentration of Media Ownership:** Corporate and political influence can affect editorial independence.
- **Threats to Journalists:** Journalists sometimes face intimidation, harassment, and legal pressures.
- **Spread of Misinformation:** Social media has accelerated fake news, hate speech, and information disorder.
- **Balancing Security and Liberty:** Governments face challenges in balancing national security with freedom of expression.

Constitutional and Legal Framework

- **Article 19(1)(a):** Guarantees freedom of speech and expression as a Fundamental Right.
- **Reasonable Restrictions:** Article 19(2) permits restrictions on grounds such as sovereignty, security, and public order.
- **Role of Judiciary:** Courts have repeatedly emphasized the importance of free media in democracy.
- **Information Technology Regulations:** Digital platforms are governed through Information Technology laws and intermediary rules.

Importance of Press Freedom

- **Democratic Accountability:** Independent media acts as a watchdog against misuse of power.
- **Informed Citizenry:** Free press enables citizens to make informed political and social choices.
- **Protection of Rights:** Journalism highlights violations of human rights and social injustices.
- **Strengthening Institutions:** Transparent public discourse improves governance and institutional credibility.

Way Forward

- **Protecting Journalistic Independence:** Ensure freedom from political and corporate interference.
- **Transparent Digital Regulations:** Establish clear and accountable procedures for online content restrictions.
- **Strengthening Media Ethics:** Promote responsible journalism and fact-checking mechanisms.
- **Institutional Safeguards:** Strengthen legal protections and safety mechanisms for journalists.
- **Encouraging Constructive Dialogue:** Foster balanced engagement between governments, media, and civil society.

4. Promotion and Regulation of Online Gaming Act, 2025

Why in the news?

- Concerns are rising that bans on online gaming are increasing dependence on illegal offshore betting platforms.

Promotion and Regulation of Online Gaming Act, 2025

- **Objective of the Act:** The legislation aims to protect youth and vulnerable groups from social, economic, and psychological harms of online gaming.
- **Restriction on Real-Money Gaming:** The Act imposed stringent restrictions and bans on several online gaming platforms involving money.
- **Consumer Protection Focus:** It seeks to curb fraud, addiction, and privacy-related concerns linked to online gaming.

- **Implementation Concerns:** Reports suggest that the ban has shifted users towards illegal offshore platforms.

Limitations of Blanket Bans

- **Ineffective Enforcement:** Digital platforms are difficult to regulate solely through prohibitory measures.
- **Underground Market Expansion:** Prohibitions often push users into illegal and unregulated ecosystems.
- **Technological Evasion:** Encrypted platforms and Virtual Private Networks weaken geographic restrictions.
- **Loss of Regulatory Oversight:** Authorities lose the ability to monitor user activity and enforce safeguards.

Examples from International Jurisdictions

- **United Arab Emirates Model:** The United Arab Emirates introduced a tightly regulated licensing system with strict safeguards.
- **Sri Lanka's Approach:** Sri Lanka is establishing a Gambling Regulatory Authority to regulate offshore gaming activities.
- **Global Regulatory Trend:** Many countries are moving toward controlled regulation rather than outright bans.
- **Balanced Governance Framework:** International models combine licensing, taxation, and consumer protection measures.

Need for a Strong Regulatory Framework

- **Licensing Mechanism:** Introduce transparent licensing systems for online gaming operators.
- **Consumer Safeguards:** Ensure deposit limits, age verification, and grievance redress mechanisms.
- **Monitoring Financial Transactions:** Strengthen oversight to prevent money laundering and illegal payments.
- **Awareness Campaigns:** Promote responsible gaming and public awareness regarding online fraud risks.

Way Forward

- **Adopt Regulated Frameworks:** Replace blanket bans with strict licensing and regulatory systems.
- **Strengthen Cyber Enforcement:** Improve monitoring of illegal digital financial transactions and betting networks.
- **Institutional Coordination:** Enhance collaboration among enforcement agencies, financial regulators, and States.
- **Promote Responsible Gaming:** Encourage digital literacy and awareness regarding risks of online betting.

C. SOCIAL JUSTICE

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

1. Residential Segregation and Public Health

Why in the news?

Studies highlight residential segregation among Scheduled Castes and Muslims causing unequal healthcare and public service access in India.

- **Residential Segregation:** Residential segregation refers to the physical separation of communities based on caste, religion, or social identity, shaping access to public services and opportunities.
- **Public Health Concern:** Segregated settlements often experience poor healthcare infrastructure, inadequate sanitation, and delayed medical access, worsening health outcomes.

How Residential Segregation Shapes Public Health Access

- **Unequal Healthcare Infrastructure:** Primary Health Centres, Anganwadis, and schools are commonly located in dominant caste or socially privileged areas.
- **Barriers to Physical Access:** Dalit and minority settlements often lack roads, transport, ambulance connectivity, and nearby health facilities.
- **Social Exclusion in Public Spaces:** Health camps and welfare services held in dominant caste spaces discourage marginalised communities from participation.
- **Humiliation and Discrimination:** Fear of caste-based humiliation prevents many vulnerable groups from accessing healthcare and nutrition services.
- **Understaffed Health Centres:** Minority-dominated neighbourhoods frequently face inadequate staffing, poor infrastructure, and weak healthcare delivery mechanisms.
- **Delayed Treatment:** Segregated communities travel longer distances for care, increasing risks during emergencies and maternal health situations.

Impact on Public Health Outcomes

- **Higher Disease Burden:** Poor sanitation, limited clean water, and weak healthcare access increase vulnerability to communicable diseases.
- **Malnutrition and Child Health Issues:** Exclusion from Anganwadis and nutrition programmes contributes to child malnutrition and stunted development.
- **Maternal and Reproductive Health Risks:** Restricted access to emergency healthcare adversely affects pregnant women and maternal mortality outcomes.
- **Mental and Social Distress:** Constant discrimination and exclusion reduce dignity, trust in institutions, and psychological well-being.
- **Intergenerational Inequality:** Segregation perpetuates poor education, weak healthcare, and economic deprivation across generations.

Factors Reinforcing Residential Segregation

- **Historical Caste Hierarchies:** Traditional caste practices have spatially separated Dalit settlements from dominant caste habitations for decades.
- **Religious Ghettoisation:** Muslim-majority neighbourhoods often face exclusion, weak infrastructure, and housing discrimination in urban areas.
- **Administrative Neglect:** Welfare planning often ignores neighbourhood-level inequalities while assuming equal access within villages or districts.
- **Bias in Service Delivery:** Prejudices among healthcare providers influence quality of care and resource allocation in marginalised localities.

Constitutional and Ethical Dimensions

- **Article 14:** Residential segregation undermines equality before law and equal protection guaranteed under the Constitution.
- **Article 15:** Social exclusion based on caste or religion violates constitutional prohibitions against discrimination.
- **Article 21:** Unequal healthcare access affects the Right to Life and dignity recognised under Article 21.
- **Directive Principles of State Policy:** The State is constitutionally obligated to reduce inequalities and promote public health welfare.

Way Forward

- **Recognising Spatial Inequality:** Public policy must acknowledge residential segregation as a structural driver of health inequality in India.

- **Integrated Welfare Approach:** Healthcare, sanitation, housing, and transport planning should collectively address exclusionary geographies.
- **Rights-Based Governance:** Inclusive public health delivery rooted in dignity, equality, and constitutional morality is essential for social justice.
- **Inclusive Public Health System:** Addressing residential segregation is necessary to ensure equitable healthcare access, reduce social exclusion, and strengthen constitutional democracy in India.

2. Medical and Wellness Tourism in India

Why in the news?

- India is emerging as a major global Medical Value Travel destination through the “Heal in India” initiative and AYUSH promotion.

Global Medical Value Travel Landscape

- **Medical Value Travel (MVT):** Medical Value Travel refers to international travel for affordable, quality medical treatment and wellness services.
- **Growing Global Industry:** Rising healthcare costs, long waiting periods, and lifestyle diseases are driving patients to seek treatment abroad.
- **Rapid Market Expansion:** The global Medical Value Travel market was valued at USD 115.6 billion in 2022 and is projected to reach USD 286.1 billion by 2030.
- **Increasing Demand for Wellness:** Preventive healthcare, yoga, Ayurveda, and holistic healing are becoming central to global wellness tourism trends.

India's Position in Global Medical Tourism





- **Major Global Destination:** India ranks 10th among 46 global medical tourism destinations according to the Medical Tourism Index 2020-21.
- **Wellness Tourism Strength:** India ranks 12th among top wellness tourism markets and 5th in the Asia-Pacific wellness destinations category.
- **Rising Medical Tourism Market:** India's medical tourism market is estimated at USD 8.7 billion in 2025 and projected to reach USD 16.2 billion by 2030.
- **Foreign Tourist Arrivals:** In 2025, India recorded 9.15 million Foreign Tourist Arrivals, including over 5 lakh medical tourists.

Key Pillars of India's Medical Value Travel Ecosystem

- **Medical Tourism:** India offers advanced treatments including cardiac surgery, organ transplants, cancer treatment, fertility services, and cosmetic procedures.
- **Wellness Tourism:** Yoga, Ayurveda, Naturopathy, Unani, Siddha, and Homeopathy attract global visitors seeking preventive and holistic healthcare.
- **Integrated Healthcare Model:** India uniquely combines modern medical science with traditional healing systems under one ecosystem.

India's Competitive Advantages

- **Affordable Healthcare:** High-quality treatment in India costs significantly lower than in many developed countries while maintaining global standards.
- **Skilled Medical Workforce:** India possesses over 1.2 million registered doctors and a large network of trained healthcare professionals.
- **Extensive Healthcare Infrastructure:** India has more than 69,000 hospitals across public and private sectors supporting specialised healthcare delivery.
- **English Language Advantage:** English-based medical education and clinical communication improve accessibility for international patients.
- **Advanced Technology:** Indian hospitals increasingly use modern diagnostics, robotic surgeries, and globally recognised treatment technologies.
- **International Accreditation:** Many hospitals are accredited by the National Accreditation Board for Hospitals and Healthcare Providers and Joint Commission International.

Role of AYUSH in Medical Value Travel

- **Traditional Healthcare Systems:** Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy strengthen India's wellness tourism ecosystem.
- **AYUSH Visa Initiative:** The Government introduced dedicated AYUSH visas in 2023 to facilitate foreign patients seeking traditional therapies.
- **Insurance Support:** Insurance Regulatory and Development Authority of India regulations permit insurance coverage for AYUSH treatments.
- **Global Recognition:** Platforms such as the World Health Organization Global Traditional Medicine Summit enhance India's traditional medicine outreach.

Government Initiatives Promoting Medical Tourism

- **Heal in India Initiative:** The flagship programme promotes India as a trusted destination for integrated and holistic healthcare services.
- **National Medical and Wellness Tourism Promotion Board:** The Board coordinates ministries, States, hospitals, and industry stakeholders for Medical Value Travel promotion.
- **Digital Facilitation:** Revamped Medical Value Travel portals provide integrated booking, payment, and post-treatment support systems.
- **Liberalised Visa Regime:** E-Medical Visa and E-AYUSH Visa facilities are available for nationals of 172 countries.
- **Airport Facilitation:** Dedicated Medical Value Travel lounges and concierge services are proposed at major airports for patient assistance.

Union Budget 2026-27 Proposals

- **Regional Medical Hubs:** Five integrated medical hubs are proposed in partnership with States and private stakeholders.
- **Comprehensive Infrastructure:** Hubs will include advanced diagnostics, rehabilitation services, AYUSH centres, and Medical Value Tourism facilitation centres.
- **Expansion of Ayurveda Institutions:** Three new All India Institutes of Ayurveda are proposed to strengthen research and healthcare delivery.
- **Skill Development:** Training programmes are proposed for guides, paramedical staff, and service providers in cross-cultural communication.

Challenges in India's Medical Tourism Sector

- **Infrastructure Gaps:** Uneven healthcare infrastructure across regions affects accessibility and quality consistency.
- **Regulatory Concerns:** Standardisation and monitoring of Medical Value Travel facilitators remain limited in some areas.
- **Ethical Issues:** Concerns persist regarding organ transplantation ethics, patient rights, and treatment transparency.
- **Healthcare Inequality:** Excessive focus on foreign patients may widen disparities in healthcare access for domestic populations.
- **Global Competition:** Countries such as Thailand, Singapore, and Turkey continue competing aggressively in medical tourism markets.

Way Forward

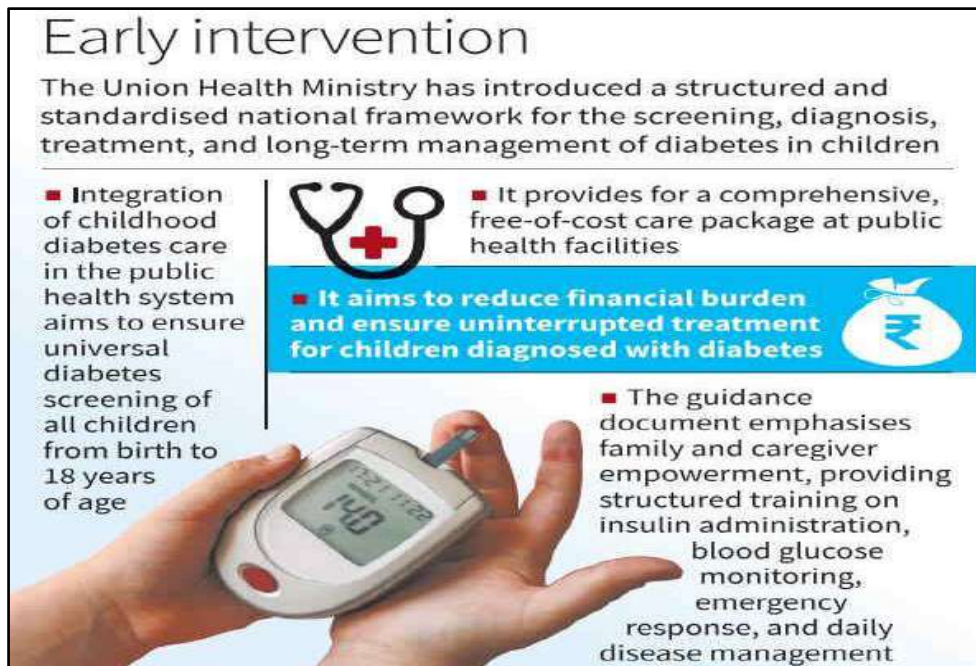
- **Strengthening Quality Standards:** Expanding accreditation and transparent regulation can enhance international trust in Indian healthcare.

- **Balanced Healthcare Development:** Growth of medical tourism should complement improvements in domestic public healthcare systems.
- **Integrated Promotion Strategy:** Combining wellness tourism, cultural tourism, and healthcare services can strengthen India's global branding.
- **Sustainable Healthcare Ecosystem:** Ethical governance, digital facilitation, and inclusive infrastructure are essential for long-term growth.

3. Childhood Diabetes Care

Why in the news?

- Union Health Ministry released national guidelines integrating childhood diabetes screening, treatment, and lifelong management into public healthcare systems.



Early intervention

The Union Health Ministry has introduced a structured and standardised national framework for the screening, diagnosis, treatment, and long-term management of diabetes in children

- Integration of childhood diabetes care in the public health system aims to ensure universal diabetes screening of all children from birth to 18 years of age
- It provides for a comprehensive, free-of-cost care package at public health facilities
- It aims to reduce financial burden and ensure uninterrupted treatment for children diagnosed with diabetes
- The guidance document emphasises family and caregiver empowerment, providing structured training on insulin administration, blood glucose monitoring, emergency response, and daily disease management

- **Childhood Diabetes:** Childhood diabetes is a chronic metabolic disorder affecting children due to insufficient insulin production or ineffective insulin utilisation.
- **Government Initiative:** The Union Health Ministry introduced a structured national framework for screening, diagnosis, treatment, and long-term diabetes management in children.

Key Features of the New Guidelines

- **Universal Screening:** The framework provides universal diabetes screening for all children from birth to 18 years of age.
- **Early Diagnosis Mechanism:** Suspected cases will undergo immediate blood glucose testing followed by referral to district-level healthcare facilities.
- **Free Lifelong Treatment:** Public health facilities will provide free insulin therapy, diagnostic services, monitoring devices, and regular follow-up care.
- **Integrated Healthcare Continuum:** The model links community-level screening with district hospitals and advanced medical college facilities.
- **Standardised Treatment Protocols:** Evidence-based treatment guidelines and regular monitoring schedules are included for better disease management.

About Diabetes Mellitus

- **Definition:** Diabetes Mellitus is a chronic disease where the pancreas does not produce enough insulin or the body cannot effectively use it.
- **Role of Insulin:** Insulin regulates blood glucose levels and maintains metabolic balance in the body.
- **Hyperglycaemia:** Uncontrolled diabetes causes high blood sugar levels, damaging nerves, blood vessels, kidneys, eyes, and other organs over time.

Types of Childhood Diabetes

- **Type 1 Diabetes:** It is an autoimmune condition where the pancreas produces little or no insulin, requiring lifelong insulin therapy.
- **Type 2 Diabetes:** It occurs due to insulin resistance and is increasingly linked with obesity and sedentary lifestyles among children.
- **Gestational and Secondary Diabetes:** Some childhood cases arise due to genetic conditions, hormonal disorders, or medication-related causes.

Importance of the Initiative

- **Early Detection:** Timely screening can prevent severe complications and reduce mortality associated with childhood diabetes.
- **Financial Protection:** Free treatment and monitoring reduce the economic burden on affected families.
- **Improved Quality of Life:** Continuous care and counselling help children maintain healthier and more productive lives.
- **Strengthening Public Healthcare:** Integration into the public health system improves non-communicable disease management capacity.
- **Equitable Access:** Standardised nationwide protocols ensure healthcare accessibility across rural and urban regions.

4Ts Awareness Framework

- **Toilet:** Frequent urination is an early warning sign of uncontrolled blood sugar levels.
- **Thirsty:** Excessive thirst develops due to dehydration caused by increased urination.
- **Tired:** Persistent fatigue occurs because cells fail to utilise glucose effectively for energy production.
- **Thinner:** Sudden weight loss may occur despite normal or increased food intake.

Role of Family and Caregivers

- **Insulin Administration Training:** Families receive guidance on proper insulin use and dosage management.
- **Blood Glucose Monitoring:** Caregivers are trained to regularly monitor blood sugar levels using glucometers and test strips.
- **Emergency Response Preparedness:** Awareness regarding hypoglycaemia, hyperglycaemia, and emergency management is promoted.
- **Lifestyle and Dietary Support:** Parents and teachers are encouraged to support healthy diets and physical activity among children.
- **Challenges in Childhood Diabetes Management**
 - **Limited Awareness:** Many parents and caregivers fail to recognise early symptoms of diabetes in children.
 - **Healthcare Infrastructure Gaps:** Rural and underserved areas face shortages of specialists, diagnostic facilities, and insulin access.
 - **Treatment Adherence Issues:** Lifelong insulin therapy and regular monitoring create psychological and financial challenges for families.

- **Rising Lifestyle Disorders:** Increasing obesity and unhealthy lifestyles contribute to growing childhood diabetes prevalence.

Way Forward

- **Strengthening Primary Healthcare:** Public healthcare centres should be equipped with diabetes screening and management infrastructure.
- **School-Based Awareness:** Schools should promote awareness regarding symptoms, healthy diets, and physical activity among children.
- **Digital Health Integration:** Technology-enabled monitoring and telemedicine can strengthen long-term disease management.
- **Research and Surveillance:** Better data collection and research are needed to track childhood diabetes trends and outcomes.
- **Holistic Public Health Approach:** Nutrition, preventive healthcare, and lifestyle interventions should complement medical treatment strategies.

4. World Health Statistics Report by WHO

Why in the news?

- The World Health Organization (WHO) World Health Statistics Report highlighted that the COVID-19 pandemic caused severe disruptions in global health systems, reversing developmental gains while exposing structural inequalities in healthcare access and preparedness.

Key Findings of the WHO Report

- **Excess Deaths During Pandemic:** COVID-19 pandemic was linked to an estimated 22.1 million excess deaths globally between 2020 and 2023.
- **Decline in Life Expectancy:** Pandemic reversed nearly a decade of improvements in global life expectancy.
- **Uneven Recovery Across Regions:** Recovery from pandemic impacts remains incomplete and regionally unequal.
- **Indirect Health Impacts:** Disruptions in healthcare delivery contributed to deaths beyond direct COVID-19 infections.

Positive Global Health Developments

- **Reduction in HIV Infections:** New Human Immunodeficiency Virus (HIV) infections declined by 40% between 2010 and 2024.
- **Decline in Tobacco and Alcohol Use:** Global tobacco use and alcohol consumption showed decreasing trends over the past decade.
- **Progress Against Neglected Tropical Diseases:** People requiring interventions for neglected tropical diseases reduced by 36% between 2010 and 2024.
- **Expansion of Basic Services:** Access to drinking water, sanitation, hygiene, and clean cooking solutions expanded significantly worldwide.

Major Global Health Challenges

- **Rising Malaria Incidence:** Malaria incidence increased by 8.5% since 2015, moving away from global targets.
- **Persistent Anaemia Burden:** Anaemia affects 30.7% of women of reproductive age without notable improvement over the decade.
- **Violence Against Women:** Intimate partner violence continues to affect nearly one in four women globally.

- **Healthcare Inequality:** Unequal access to healthcare infrastructure persists across regions and vulnerable populations.

Government Initiatives in India

- **Ayushman Bharat Scheme:** Expands health insurance coverage and strengthens primary healthcare through Health and Wellness Centres.
- **National Health Mission (NHM):** Focuses on improving healthcare delivery in rural and urban areas.
- **Poshan Abhiyaan:** Targets malnutrition and anaemia among women and children.
- **Jal Jeevan Mission:** Expands access to safe drinking water and sanitation facilities.

Way Forward

- **Increase Public Health Expenditure:** Sustainable investment in healthcare infrastructure and workforce is essential.
- **Strengthen Primary Healthcare:** Community-based healthcare systems should be prioritised for inclusive access.
- **Promote Global Health Governance:** International institutions must coordinate equitable healthcare responses during crises.
- **Integrate Technology in Healthcare:** Digital health systems can improve surveillance, telemedicine, and healthcare delivery.

5. Bringing Dropout Children Back into Mainstream Education through Inclusive Schooling

Why in News?

- Ministry of Education launched a coordinated initiative to bring over two crore out-of-school children back into education.

Magnitude of the Dropout Problem

- **Low Retention Rate:** Out of every 100 children enrolled in Class I, only 62 reach Class XII.
- **Large Number of Out-of-School Children:** More than two crore children aged 14-18 years remain outside formal schooling.
- **Socioeconomic Pressures:** Poverty, household responsibilities, and livelihood compulsions force many children to discontinue education.
- **Regional Concentration:** Higher dropout rates are concentrated in socioeconomically weaker districts and vulnerable communities.

Key Features of the Government Initiative

- **Mission-Mode Approach:** Centre, States, district administrations, and NIOS are coordinating through a structured national strategy.
- **Flexible Learning Pathways:** Open and Distance Learning (ODL) systems through NIOS and State Open Schools will support children unable to return to conventional schools.
- **Skill-Integrated Education:** Focus on combining secondary education with employable skills linked to local economic needs.
- **Technology-Based Monitoring:** App-based monitoring and tracking mechanisms will ensure effective implementation.
- **Pilot District Rollout:** Initial implementation planned in selected districts across Odisha, Maharashtra, Bihar, Karnataka, Uttar Pradesh, and other States.

Major Causes of School Dropouts

- **Economic Distress:** Children often enter labour markets to supplement family income.
- **Gender Disparities:** Girls face early marriage, domestic responsibilities, and safety concerns affecting education continuity.
- **Migration and Mobility:** Seasonal migration disrupts regular school attendance.
- **Poor Educational Infrastructure:** Inadequate schools, teachers, and digital access contribute to disengagement.
- **Learning Deficits:** Weak foundational literacy and numeracy increase dropout risks at higher grades.

Constitutional and Policy Framework

- **Article 21A:** Guarantees free and compulsory education for children between 6 and 14 years.
- **Directive Principles of State Policy:** Article 45 promotes early childhood care and education.
- **National Education Policy (NEP) 2020:** Emphasises universal access, equity, flexibility, and reduction of dropout rates.
- **Sustainable Development Goal (SDG) 4:** Aims to ensure inclusive and equitable quality education for all.

Way Forward

- **Strengthen Foundational Learning:** Early interventions in literacy and numeracy can reduce future dropout rates.
- **Expand Financial Support:** Scholarships, direct benefit transfers, and midday meals should support vulnerable families.
- **Improve Secondary School Access:** Better infrastructure and transportation facilities can encourage retention.
- **Promote Vocational Education:** Skill-based learning should be integrated with formal education pathways.
- **Community Participation:** Local bodies, civil society, and parents should actively support re-enrolment efforts.

6. Sample Registration Survey 2024

Why in the news?

- The Sample Registration Survey 2024 reported declining birth rates, death rates, and infant mortality rates across India.

Sample Registration Survey, 2024 Findings

- **Decline in Birth Rate:** India's birth rate declined from 21 per 1,000 population in 2014 to 18.3 in 2024.
- **Marginal Decline in Death Rate:** The death rate decreased from 6.7 to 6.4 deaths per 1,000 population during the decade.
- **Improvement in Infant Mortality Rate:** Infant Mortality Rate declined significantly from 39 to 24 deaths per 1,000 live births.
- **Demographic Transition:** The trends indicate gradual stabilisation of population growth and improved health outcomes.

Rural-Urban Variations

- **Higher Rural Birth Rate:** Rural birth rates remain significantly higher compared to urban areas.
- **Urban Fertility Decline:** Urban regions recorded faster declines in birth rates due to better education and healthcare access.
- **Rural Mortality Burden:** Death rates and Infant Mortality Rates remain higher in rural regions.
- **Urban Healthcare Advantage:** Better medical infrastructure and maternal healthcare improved urban health indicators.

Reasons for Declining Birth Rate

- **Improved Female Education:** Rising literacy and awareness among women contributed to smaller family sizes.
- **Access to Family Planning:** Expansion of reproductive health services increased contraceptive use.
- **Urbanisation and Economic Changes:** Urban lifestyles and rising living costs encouraged lower fertility rates.
- **Delayed Marriages:** Increasing age at marriage reduced fertility levels.

Government Initiatives Supporting Health Outcomes

- **National Health Mission:** Strengthened primary healthcare and maternal-child health services.
- **Janani Suraksha Yojana:** Encouraged institutional deliveries among economically weaker sections.
- **Poshan Abhiyaan:** Focused on improving nutritional outcomes for women and children.
- **Ayushman Bharat:** Expanded access to healthcare through health insurance and wellness centres.

Way Forward

- **Strengthening Rural Healthcare:** Improve healthcare infrastructure and workforce availability in rural areas.
- **Reducing Regional Disparities:** Target interventions in States with poor maternal and child health indicators.
- **Promoting Nutrition Security:** Expand nutrition support for pregnant women and children.
- **Enhancing Public Health Investment:** Increase expenditure on preventive and primary healthcare services.

D. INTERNATIONAL RELATIONS

I. India and its Neighborhood- Relations

1. Indian Ocean Rim Association (IORA)

Why in the news?

- Growing tensions in West Asia and disruptions in sea routes have renewed focus on maritime security in the Indian Ocean Region.

Indian Ocean Rim Association (IORA)

- **Formation:** The Indian Ocean Rim Association was established in 1997 to strengthen regional cooperation and economic integration.
- **Membership:** The grouping currently consists of 23 member States from Asia, Africa, and Oceania bordering the Indian Ocean.
- **India's Chairmanship:** India presently chairs the organisation and seeks to strengthen its regional relevance and maritime cooperation agenda.
- **Thirty-Year Milestone:** The organisation is expected to hold its 30th anniversary summit in 2027.

Importance of Maritime Security

- **Energy Security:** Indian Ocean Sea lanes are crucial for transportation of crude oil, liquefied natural gas, and energy supplies.
- **Trade Connectivity:** A significant share of global maritime trade passes through the Indian Ocean Region.
- **Food Security:** Fisheries and marine resources support livelihoods and nutritional needs across littoral countries.
- **Strategic Sea Routes:** Important chokepoints such as the Strait of Hormuz and Bab-el-Mandeb lie in the region.

Impact of West Asia Conflict on Indian Ocean Region

- **Disruption of Shipping Routes:** Conflict and blockades in the Strait of Hormuz threaten uninterrupted maritime trade.
- **Increase in Fuel Prices:** Several member countries have experienced rising fuel prices due to geopolitical instability.
- **Tourism Sector Impact:** Airline disruptions and regional insecurity have adversely affected tourism-dependent economies.
- **Livelihood Concerns:** Fishermen and coastal communities face economic hardships due to maritime insecurity and restricted access.
- **Inflationary Pressures:** Supply chain disruptions and fertilizer shortages affect agricultural productivity and regional economies.

Priority Areas of Indian Ocean Rim Association

- **Maritime Safety and Security:** Enhancing secure navigation and regional maritime cooperation remains a central priority.
- **Trade and Investment:** The organisation promotes economic integration and regional trade connectivity.
- **Blue Economy:** Sustainable use of marine resources is emphasised for long-term economic growth.
- **Disaster Risk Management:** Cooperation is encouraged for managing cyclones, tsunamis, and natural disasters.
- **Women's Economic Empowerment:** Inclusive development and participation of women in economic activities are promoted.

India's Strategic Interests in Indian Ocean Region

- **MAHASAGAR Vision:** India's maritime policy emphasises security, growth, and cooperation across the Indian Ocean Region.
- **Indo-Pacific Strategy:** India considers the Indian Ocean central to a free, open, and inclusive Indo-Pacific.
- **Regional Leadership:** Chairing the Indian Ocean Rim Association strengthens India's diplomatic and strategic influence.
- **Countering External Influence:** Maritime partnerships help India balance increasing strategic competition in the region.

Challenges Facing Indian Ocean Rim Association

- **Geopolitical Tensions:** Rivalries and conflicts among regional and extra-regional powers affect cooperation.
- **Limited Institutional Effectiveness:** The organisation has historically lacked the prominence of other regional groupings.
- **Maritime Piracy and Illegal Activities:** Piracy, trafficking, and illegal fishing continue to threaten maritime stability.
- **Climate Change Threats:** Rising sea levels and extreme weather events endanger coastal communities and economies.

Way Forward

- **Strengthening Maritime Governance:** Greater coordination among regional countries is required for maritime security and trade protection.
- **Enhancing Naval Cooperation:** Joint exercises, intelligence sharing, and surveillance mechanisms should be expanded.
- **Promoting Blue Economy:** Sustainable exploitation of marine resources can strengthen regional development.
- **Institutional Revitalisation:** The Indian Ocean Rim Association requires stronger institutional capacity and policy coordination.

- **Conflict De-escalation:** Diplomatic engagement is essential to maintain peace and stability in West Asia and adjacent sea routes.

II. India & World

1. India and New Zealand Free Trade Agreement (FTA)

Why in the news?

- India and New Zealand signed a Free Trade Agreement with tariff cuts, mobility pathways, and \$20 billion investment commitment.

Trade Liberalisation Provisions

- **Duty-Free Access for Indian Exports:** New Zealand agreed to eliminate tariffs on 100% of Indian exports covering all tariff lines.
- **Export Competitiveness:** Indian products such as textiles, pharmaceuticals, machinery, carpets, and automobiles gain better market access.
- **India's Tariff Concessions:** India offered tariff liberalisation on 70.03% of tariff lines covering 95% of bilateral trade value.
- **Protection of Sensitive Sectors:** Nearly 30% tariff lines remain excluded to safeguard domestic industries and agriculture.
- **Tariff Reduction for New Zealand Products:** Tariffs on fish, seafood, wine, forestry products, wool, coal, and sheep meat will be reduced gradually.
- **Phased Liberalisation:** Some tariff reductions will occur over periods extending up to 10 years.

Investment Commitment

- **\$20 Billion Investment Pledge:** New Zealand committed to strengthen its investment footprint in India over the next 15 years.
- **Confidence in Indian Economy:** The investment promise reflects expectations regarding India's economic growth and market expansion.
- **Conditional Nature of Investment:** The commitment is subject to global economic conditions, geopolitical disruptions, pandemics, and financial crises.
- **Non-Binding Concerns:** Experts caution that investment announcements may not necessarily translate into actual inflows.
- **Importance for India:** Investment can support manufacturing, agriculture, innovation, and technology sectors.
- **Employment Generation Potential:** Increased foreign direct investment may create jobs and infrastructure development opportunities.

Agriculture and Dairy Issues

- **Preferential Access for Apples:** New Zealand became the first country to secure preferential access for apples under an Indian Free Trade Agreement.
 - **Quota-Based Imports:** Apple import quotas will gradually rise from 32,500 tonnes to 45,000 tonnes.
- **Market Diversification:** New Zealand gains greater penetration into India's premium fruit market.
- **Concerns for Indian Farmers:** Lower-duty imports could negatively affect apple growers in Jammu and Kashmir and Himachal Pradesh.
- **Structural Challenges:** Indian farmers already face high transport costs, poor cold-chain infrastructure, and price instability.
- **Dairy Sector Protection:** India excluded dairy products such as milk, cheese, yoghurt, and whey from tariff concessions.

- **Sensitive Sector Safeguard:** Protects livelihoods of millions of small dairy farmers in India.

Mobility and Migration Provisions

- **Mobility Pathways for Indians:** The agreement creates opportunities for Indian students, professionals, and young workers in New Zealand.
- **People-to-People Connectivity:** Enhances educational and professional exchanges between both countries.
- **Work Rights for Students:** Indian students in New Zealand can work up to 20 hours weekly during studies.
- **Post-Study Work Visas:** Science, Technology, Engineering and Mathematics graduates receive extended work opportunities.
- **Temporary Employment Pathway:** Up to 5,000 skilled Indian professionals can work in New Zealand for three years.
- **Sectoral Opportunities:** Information Technology, healthcare, and education sectors are key beneficiaries.

Economic and Strategic Significance

- **Diversification of Trade Partnerships:** India is expanding trade agreements to reduce dependence on limited export markets.
- **Response to Global Trade Uncertainty:** The agreement emerged amid tariff pressures and geopolitical disruptions.
- **Rules-Based Trade Order:** Both nations emphasised commitment to predictable and transparent global trade systems.
- **Geopolitical Relevance:** Strengthens India's engagement with Indo-Pacific economies.
- **Balancing Tariff Asymmetry:** Developed countries generally maintain lower tariffs compared to India's higher import duties.
- **Need for Investment Commitments:** India seeks investment assurances to balance tariff concessions offered under Free Trade Agreements.

Challenges and Concerns

- **Unequal Tariff Structure:** New Zealand's average tariffs are already low, limiting India's additional export gains.
- **Domestic Industry Vulnerability:** Import competition may affect sensitive agricultural sectors.
- **Implementation Challenges:** Investment promises may remain aspirational without clear enforcement mechanisms.
- **Lessons from European Free Trade Association (EFTA):** Previous investment commitments under trade agreements have shown mixed outcomes.
- **Services Trade Imbalance:** New Zealand maintains a surplus in services trade due to education and tourism expenditures by Indians.
- **Need for Greater Services Access:** India may seek stronger opportunities for its services sector in future reviews.

Way Forward

- **Balanced Trade Strategy:** India must ensure Free Trade Agreements protect vulnerable sectors while promoting export competitiveness.
- **Focus on Domestic Competitiveness:** Improving logistics, cold-chain facilities, and productivity is essential.
- **Monitoring Investment Commitments:** Periodic review mechanisms should assess actual investment inflows and implementation progress.
- **Institutional Coordination:** Strong policy support is necessary for translating agreements into economic gains.
- **Expanding Skilled Mobility:** India can leverage mobility provisions to strengthen global workforce integration and remittance inflows.

- **Strategic Economic Diplomacy:** Free Trade Agreements should support India's long-term economic and geopolitical interests.

2. Impact of Iran War on Printed Circuit Board (PCB) Supply Chain

Why in the news?

- Iran war disrupted printed circuit board supply chains, increasing costs of electronics manufacturing and global technology products.

Impact of Iran War on Printed Circuit Board (PCB) Supply Chain

- **Printed Circuit Boards (PCBs):** Printed Circuit Boards are foundational components connecting and supporting electronic parts in devices.
- **Wide Usage:** Used in smartphones, computers, automobiles, defence equipment, telecommunications, and Artificial Intelligence servers.
- **Global Supply Chain Disruption:** Conflict in the Middle East disrupted production and transportation of crucial raw materials for PCB manufacturing.
- **Impact on Electronics Industry:** Technology firms are facing shortages, delivery delays, and rising production costs.

Geopolitical and Economic Implications

- **Interconnected Global Supply Chains:** Regional conflicts increasingly affect global manufacturing and technology industries.
- **Economic Spillover Effects:** War impacts sectors beyond oil and defence, including electronics and digital infrastructure.
- **Strategic Dependence on West Asia:** Many industrial raw materials and shipping routes remain concentrated in geopolitically sensitive regions.
- **Supply Chain Fragility:** Concentration of production creates risks for global industrial stability.
- **Impact on Global Inflation:** Rising costs of electronic components may contribute to inflation in consumer technology products.
- **Industrial Cost Transmission:** Increased raw material prices spread across multiple sectors.

Implications for India

- **Impact on Electronics Manufacturing:** India's growing electronics and semiconductor sectors may face higher import costs for components.
- **Production-Linked Incentive (PLI) Concerns:** Rising raw material costs could affect competitiveness of domestic manufacturing.
- **Challenges for Digital Economy:** Expensive hardware may influence growth of data centres, telecommunications, and Artificial Intelligence infrastructure.
- **Import Dependency Risks:** India remains dependent on imports for many critical electronic materials.
- **Need for Supply Chain Diversification:** India must reduce excessive dependence on concentrated foreign suppliers.
- **Strategic Manufacturing Opportunity:** Global disruptions create opportunities for India to strengthen domestic electronics ecosystems.

Government Initiatives Relevant to the Sector

- **Production Linked Incentive (PLI) Scheme:** Encourages domestic manufacturing of electronics and semiconductor-related industries.

- **Objective of Self-Reliance:** Supports development of local supply chains and reduction of import dependence.
- **Semicon India Programme:** Promotes semiconductor fabrication, assembly, testing, and packaging capabilities in India.
- **Technology Ecosystem Development:** Aims to position India as a global electronics manufacturing hub.
- **National Logistics Policy:** Focuses on improving transport efficiency and supply chain resilience.
- **Trade Facilitation:** Better logistics can reduce vulnerability to international disruptions.

Way Forward

- **Diversification of Supply Sources:** Countries and firms should avoid excessive dependence on single-region suppliers for critical materials.
- **Strengthening Domestic Manufacturing:** India should accelerate local production of electronic components, specialty chemicals, and semiconductor materials.
- **Strategic Material Reserves:** Maintaining reserves of critical industrial materials can reduce disruption during crises.
- **Global Cooperation for Supply Stability:** International coordination is essential for protecting maritime routes and industrial supply chains during conflicts.

3. India-Vietnam Relations

Why in the news?

- India and Vietnam reviewed expanding defence cooperation focusing on maritime security, defence industry, and Indo-Pacific regional stability.

Key Outcomes of the Defence Meeting

- **Maritime Security Cooperation:** Both countries discussed enhancing cooperation in maritime security and freedom of navigation in the Indo-Pacific region.
- **Defence Industry Collaboration:** The discussions focused on expanding defence production partnerships, logistics support, and technology sharing.
- **Military Training and Capacity Building:** India and Vietnam agreed to deepen military training, joint exercises, and exchange programmes.
- **Emerging Technologies:** Cooperation in artificial intelligence, cyber security, and quantum technology was emphasised during the meeting.
- **United Nations Peacekeeping:** Both countries reaffirmed cooperation in United Nations peacekeeping missions and defence diplomacy initiatives.

Strategic Importance of India-Vietnam Relations

- **Indo-Pacific Stability:** India and Vietnam support a free, open, inclusive, and rules-based Indo-Pacific order.
- **Counterbalancing Chinese Influence:** Defence cooperation has gained importance amid increasing Chinese assertiveness in the South China Sea.
- **Act East Policy:** Vietnam remains a key pillar of India's Act East Policy and Indo-Pacific strategic vision.
- **Shared Maritime Interests:** Both countries support freedom of navigation, peaceful dispute resolution, and adherence to international law.

Major Areas of Defence Cooperation

- **Defence Policy Dialogues:** Regular defence dialogues facilitate strategic coordination and institutional cooperation between the two nations.

- **Military-to-Military Exchanges:** Bilateral exchanges improve operational coordination, trust-building, and interoperability between armed forces.
- **Ship Visits and Naval Exercises:** Naval interactions strengthen maritime partnerships and regional naval presence in the Indo-Pacific.
- **Capacity Enhancement:** India supports Vietnam's defence modernisation through training, technology transfer, and equipment support.

Important Developments in Bilateral Defence Ties

- **Joint Vision Statement 2030:** In 2022, both countries signed the Joint Vision Statement on India-Vietnam Defence Partnership Towards 2030.
- **Mutual Logistics Support Agreement:** India and Vietnam signed a Memorandum of Understanding for logistics cooperation between defence forces.
- **Gifting of INS Kirpan:** India gifted the indigenously built missile corvette INS Kirpan to Vietnam in 2023 after decommissioning it.
- **High-Speed Guard Boats:** India handed over 12 high-speed guard boats to strengthen Vietnam's maritime security capabilities.
- **Defence Infrastructure Support:** India assisted Vietnam in establishing language laboratories and information technology facilities.

Economic and Cultural Dimensions

- **Trade and Investment:** Defence cooperation complements expanding bilateral trade, connectivity, and investment relations.
- **Civilisational Ties:** India and Vietnam share long-standing cultural and historical links rooted in Buddhism and maritime exchanges.
- **People-to-People Relations:** Educational exchanges, tourism, and cultural cooperation strengthen bilateral goodwill.

Challenges in Bilateral Cooperation

- **Regional Geopolitical Tensions:** Rising competition in the Indo-Pacific may complicate regional strategic balancing efforts.
- **Defence Technology Constraints:** Technology transfer and production partnerships require greater institutional and industrial coordination.
- **China Factor:** Expanding India-Vietnam defence ties may face diplomatic sensitivities related to China's regional posture.

Way Forward

- **Strengthening Maritime Cooperation:** Both countries should expand naval exercises, information sharing, and maritime domain awareness mechanisms.
- **Enhancing Defence Manufacturing:** Joint production and technology collaboration can deepen strategic defence partnerships.
- **Expanding Emerging Technology Cooperation:** Greater collaboration in cyber security, artificial intelligence, and space technology is needed.
- **Institutionalising Strategic Dialogue:** Regular high-level engagements should strengthen coordination on Indo-Pacific security issues.
- **Deepening ASEAN Engagement:** India should utilise Vietnam partnership to strengthen broader engagement with Southeast Asia.

Conclusion

Strategic Indo-Pacific Partnership: India-Vietnam defence cooperation reflects growing strategic convergence aimed at promoting regional stability, maritime security, and a balanced Indo-Pacific order.

4. India - UAE Relations

Why in the news?

- India and the United Arab Emirates strengthened defence, energy, and strategic cooperation during high-level bilateral engagements.

Key Outcomes of the Visit

- Strategic Defence Cooperation Framework:** Both countries concluded a framework agreement to enhance long-term defence collaboration.
- Energy Security Agreements:** Agreements signed for crude oil storage and Liquefied Natural Gas (LNG) supplies to strengthen India's energy resilience.
- Strategic Petroleum Reserves Cooperation:** Abu Dhabi National Oil Company agreed to support India's petroleum reserve capacity expansion.
- Support for Regional Stability:** India expressed support for peace and security in West Asia amid ongoing regional tensions.

Areas of Defence Cooperation

- Defence Manufacturing Collaboration:** Focus on joint production and defence industrial partnerships.
- Military Training and Exercises:** Increased cooperation through joint drills, interoperability, and training programmes.
- Maritime Security Cooperation:** Strengthening coordination in securing sea lanes and maritime trade routes.
- Cybersecurity and Information Sharing:** Enhanced collaboration in cyber defence and intelligence exchanges.
- Special Operations Coordination:** Closer engagement between armed forces in strategic operations and security cooperation.

Importance of India-UAE Relations

- Energy Partnership:** UAE is a major supplier of crude oil and energy resources to India.
- Economic and Investment Relations:** UAE remains one of India's largest trading partners and investors.
- Indian Diaspora Contribution:** Millions of Indians living in the UAE contribute significantly through remittances and economic engagement.
- Strategic West Asia Partner:** UAE plays a crucial role in India's extended neighbourhood and Indo-West Asian policy.

Strategic Importance of Petroleum Reserves

- Energy Security Buffer:** Strategic reserves protect India from global supply disruptions and price volatility.
- Reducing Import Vulnerability:** Petroleum reserves enhance preparedness during geopolitical crises and conflicts.
- Support for Economic Stability:** Stable energy supplies are essential for industrial production and economic growth.
- Global Best Practice:** Strategic petroleum reserves are maintained by major economies for national energy security.

Geopolitical Significance

- **West Asia Instability:** Ongoing conflicts and tensions in the Gulf region threaten global energy and trade flows.
- **Importance of Maritime Routes:** Indian Ocean and Gulf sea lanes are vital for India's energy imports and trade.
- **Balancing Strategic Interests:** India continues to maintain balanced relations with regional powers while promoting peace.
- **Indo-Pacific and West Asia Linkages:** Maritime cooperation with UAE complements India's broader Indo-Pacific strategy.

5. India - Italy Relations

Why in the news?

- India and Italy elevated bilateral ties to a Special Strategic Partnership with focus on trade, defence, and connectivity.

Key Outcomes of the India-Italy Summit

- **Special Strategic Partnership:** Both countries elevated ties to the highest level of bilateral engagement.
- **Trade Target:** India and Italy set a bilateral trade target of 20 billion euros by 2029.
- **Defence Industrial Roadmap:** The agreement promotes co-development and co-production in the defence sector.
- **Strategic Agreements:** Pacts were signed on critical minerals, maritime transport, agriculture, climate research, and counter-terror financing.

Economic and Trade Cooperation

- **Growing Bilateral Trade:** Trade between both countries currently stands at around 14 billion euros.
- **Design and Manufacturing Partnership:** India and Italy agreed on "Design and Develop in India and Italy and Deliver for the World."
- **European Union-India Free Trade Agreement:** The proposed agreement is expected to expand investment and market access opportunities.
- **Critical Minerals Cooperation:** Both nations agreed to cooperate in securing resilient supply chains for strategic minerals.

Defence and Strategic Cooperation

- **Defence Co-Production:** The roadmap encourages joint defence manufacturing and technology collaboration.
- **Revival of Defence Ties:** Defence engagement has improved after previous disruptions linked to the AgustaWestland controversy.
- **Maritime Cooperation:** Agreements on ports, shipping, logistics, and blue economy aim to strengthen maritime connectivity.
- **Indo-Pacific Cooperation:** Italy supported India's vision of a free, open, and inclusive Indo-Pacific region.

Geopolitical and Global Cooperation

- **Shared Vision on Global Stability:** Both countries emphasized peace, rule-based order, and economic security.
- **Ukraine and West Asia Discussions:** India and Italy stressed dialogue and diplomacy for conflict resolution.
- **Freedom of Navigation:** Both sides highlighted the importance of secure maritime routes including the Strait of Hormuz.
- **Climate and Sustainable Development:** Agreements were signed on climate research and sustainable cooperation initiatives.

People-to-People and Cultural Ties

- **Mobility Partnership:** Agreements were signed to facilitate mobility of Indian nurses to Italy.
- **Education and Research Cooperation:** A roadmap was adopted for higher education and academic collaboration.
- **Cultural Relations:** Both countries highlighted strong civilisational and cultural linkages.
- **Tourism and Ayurveda:** Cooperation was expanded in tourism promotion and traditional medicine.

Significance for India

- **Strengthening Europe Outreach:** The partnership deepens India's strategic engagement with Europe.
- **Technology and Innovation Access:** Italy's expertise in design and manufacturing complements India's scale and innovation strengths.
- **Diversification of Strategic Partnerships:** Expands India's cooperation beyond traditional partners amid changing global dynamics.
- **Boost to Economic Diplomacy:** Enhanced trade, connectivity, and investment cooperation can support economic growth.

6. India - US Relations

Why in the news?

- India and the United States strengthened cooperation on maritime security, energy stability, trade, and Indo-Pacific strategy during talks between External Affairs Minister S. Jaishankar and U.S. Secretary of State Marco Rubio.

Key Highlights of the Meeting

- **Safe Maritime Commerce:** Both countries stressed ensuring safe and unimpeded maritime trade routes, especially through the Strait of Hormuz.
- **Strategic Partnership Reaffirmed:** The United States clarified that its tactical relations with other countries would not weaken strategic ties with India.
- **Energy Security Discussions:** India highlighted the need for diversified energy supplies due to instability in West Asia.
- **Trade and Visa Issues:** Bilateral discussions covered skilled worker visas, trade relations, and economic cooperation.

India's Maritime Interests

- **Energy Security:** India seeks uninterrupted access to oil and gas imports from Gulf countries.
- **Blue Economy Growth:** Safe sea lanes support trade, fisheries, maritime resources, and economic growth.
- **Protection of Indian Diaspora:** Millions of Indians reside in Gulf countries, making regional stability strategically important.
- **Trade Connectivity:** Maritime routes are crucial for India's exports and imports with Europe, Africa, and West Asia.

Indo-Pacific and Maritime Strategy

- **Free and Open Indo-Pacific:** India and the United States support rules-based maritime order and freedom of navigation.
- **Countering Maritime Threats:** Cooperation focuses on piracy, terrorism, and disruptions to global shipping lanes.
- **Naval Cooperation:** Joint military exercises and defence partnerships enhance maritime preparedness.

- **Quad Cooperation:** The Quadrilateral Security Dialogue strengthens regional maritime coordination among India, the United States, Japan, and Australia.

Challenges Before India

- **West Asian Instability:** Conflicts involving Iran, Israel, and Gulf nations threaten energy and trade security.
- **Dependence on Imported Energy:** India remains vulnerable to external supply disruptions and price volatility.
- **Geopolitical Balancing:** India must maintain relations with the United States, Iran, Israel, and Gulf countries simultaneously.
- **Trade Frictions:** Tariff and outsourcing-related concerns continue in India-United States trade relations.

Way Forward

- **Strengthening Maritime Cooperation:** Enhance naval coordination, intelligence sharing, and maritime domain awareness.
- **Energy Diversification:** Expand renewable energy capacity and diversify crude import sources.
- **Enhancing Trade Cooperation:** Resolve bilateral trade issues through sustained negotiations and economic engagement.
- **Promoting Regional Stability:** Support diplomatic solutions and peaceful conflict resolution in West Asia.

III. Bilateral, Regional and Global Groupings and Agreements

1. Principles to Guide India's Diplomacy

Why in the news?

India's recent diplomatic engagements across West Asia, Europe, BRICS, Quad, and Africa highlighted evolving foreign policy priorities.

- **Changing Global Order:** Intensifying geopolitical rivalries and economic uncertainty are reshaping international relations and strategic alignments.
- **India's Diplomatic Approach:** India is adopting a multidimensional foreign policy balancing partnerships, strategic autonomy, and economic interests.

Principle of Reciprocity

- **Mutual Strategic Support:** Countries supporting India's core interests expect reciprocal diplomatic solidarity during crises.
- **Importance of Trusted Partnerships:** Strong bilateral ties are built on long-term economic, security, and political cooperation.
- **West Asia Significance:** West Asian countries are crucial for India's energy security, trade, diaspora welfare, and regional stability.
- **Growing Bilateral Cooperation:** Partnerships increasingly include defence, logistics, food security, technology, and counter-terrorism cooperation.

Principle of Diversification

- **Expanding Global Partnerships:** India seeks wider engagement beyond traditional geopolitical alignments and regional dependencies.
- **Europe's Strategic Relevance:** Europe has emerged as an important source of technology, investment, green energy, and export markets.
- **Economic Modernisation:** Smaller European countries possess advanced technological and industrial capabilities beneficial for India.

- **Trade Agreements:** India's agreements with the European Union and European Free Trade Association reflect diversification efforts.

Principle of Strategic Flexibility

- **Balancing Major Powers:** India seeks to manage relations with the United States, China, Russia, and Europe simultaneously.
- **Pragmatic Foreign Policy:** Strategic decisions are increasingly guided by national interests rather than ideological alignment.
- **Role in Multiple Forums:** India participates in BRICS and Quad despite their differing geopolitical orientations.
- **Strategic Autonomy:** India avoids rigid alliance structures while maintaining independent decision-making in global affairs.

India's Engagement in BRICS and Quad

- **BRICS Grouping:** BRICS promotes cooperation among emerging economies on global governance and economic issues.
- **Quad Framework:** Quad focuses on practical cooperation in the Indo-Pacific including maritime security and resilient supply chains.
- **Divergent Interests:** Both groupings contain members with differing priorities and strategic rivalries.
- **India's Position:** India emphasises issue-based cooperation instead of ideological confrontation within multilateral forums.

Principle of Strategic Expansion

- **Growing Importance of Africa:** Africa is emerging as a major centre of economic growth, resources, and geopolitical competition.
- **Critical Mineral Resources:** African countries possess significant reserves essential for clean energy and advanced technologies.
- **Young Demographic Advantage:** Africa's expanding population and markets present economic opportunities for India.
- **Need for Greater Engagement:** India must deepen trade, connectivity, investment, and security cooperation with African nations.

India-Africa Relations

- **Historical Foundations:** India-Africa ties are rooted in anti-colonial solidarity and South-South cooperation.
- **Contemporary Strategic Interests:** Engagement increasingly focuses on energy, infrastructure, healthcare, education, and digital connectivity.
- **Competition from Other Powers:** China and other global powers actively compete for influence and investments in Africa.

Principle of Domestic Renewal

- **Internal Strength as Foreign Policy Foundation:** Sustainable diplomatic influence depends on economic growth and institutional capacity.
- **Need for Economic Reforms:** India must improve manufacturing, trade competitiveness, innovation, and technological capabilities.
- **Managing Global Disruptions:** Domestic resilience is necessary to navigate geopolitical instability and supply chain restructuring.
- **Technological Transformation:** Emerging technologies require continuous adaptation and policy modernisation.

Challenges Before Indian Diplomacy

- **Geopolitical Volatility:** Great-power competition and regional conflicts complicate strategic balancing.
- **Economic Protectionism:** Trade barriers and economic fragmentation affect global growth and export opportunities.
- **Energy and Supply Chain Risks:** Conflicts in maritime regions threaten energy imports and commercial connectivity.
- **Domestic Structural Constraints:** Bureaucratic inefficiencies and slow reforms may limit India's strategic ambitions.

Importance of India's Multi-Alignment Strategy

- **Avoiding Bloc Politics:** Multi-alignment enables India to cooperate with competing powers without entering formal alliances.
- **Maximising Strategic Space:** Flexible diplomacy enhances India's bargaining power and global relevance.
- **Protecting National Interests:** Diverse partnerships reduce dependence on any single country or bloc.

Way Forward

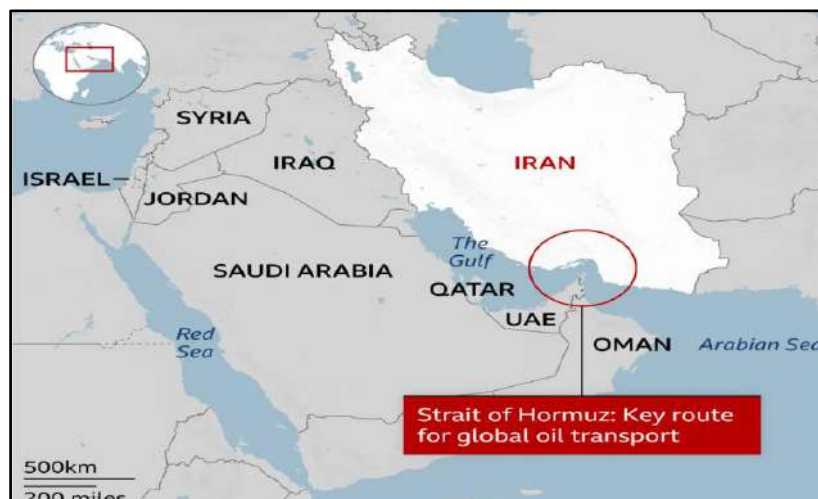
- **Strengthening Economic Competitiveness:** Domestic economic reforms must complement India's global ambitions.
- **Deepening Strategic Partnerships:** Long-term partnerships should be nurtured through consistent engagement and trust-building.
- **Enhancing Technological Capacity:** Innovation and advanced manufacturing are essential for strategic resilience.
- **Expanding Global South Leadership:** India should strengthen engagement with Africa, Indo-Pacific countries, and developing economies.
- **Maintaining Strategic Autonomy:** India must continue balancing partnerships while preserving independent foreign policy choices.

IV. Important International Institutions, agencies and fora

1. Rules that Govern International Waters

Why in News?

- Escalating tensions in the Strait of Hormuz after Iranian ship seizures and United States blockade threaten global maritime trade.



Strait of Hormuz Conflict

- **Strategic Importance of Strait of Hormuz:** Connects the Persian Gulf with the Gulf of Oman and Arabian Sea; nearly one-fifth of global oil trade passes through it.
- **Impact on Global Economy:** Any disruption increases crude oil prices, shipping insurance costs, and energy insecurity for import-dependent nations like India.
- **Iran's Transit Control:** Iran selectively permitted passage to ships based on geopolitical considerations while reportedly charging heavy transit fees.
- **India's Position:** India maintained that its ships were exercising lawful navigation rights under international law without paying any tolls.
- **Indian Shipping Interests:** Several Indian-flagged and foreign vessels carrying India's energy supplies were allowed passage initially.

United Nations Convention on the Law of the Sea (UNCLOS)

- **Comprehensive Maritime Legal Framework:** Adopted in 1982 and enforced in 1994, it defines rights and responsibilities of nations over oceans.
- **Constitution for Oceans:** Often described as the legal framework governing global maritime activities and ocean resources.
- **Territorial Waters Provision:** Coastal states enjoy sovereignty up to 12 nautical miles from their coastline.
- **Rights of Coastal States:** States can regulate security, customs, immigration, and resource usage within territorial waters.
- **Contiguous Zone Concept:** Extends up to 24 nautical miles from the baseline, allowing states limited enforcement powers.
- **Purpose of Contiguous Zone:** Helps prevent violations related to customs, taxation, immigration, and sanitation laws.
- **Exclusive Economic Zone (EEZ):** Coastal nations possess sovereign rights over exploration and exploitation of marine resources up to 200 nautical miles.
- **Continental Shelf Rights:** Coastal states can exploit seabed and subsoil resources beyond territorial waters under specified conditions.
- **Economic Significance:** Supports offshore oil, gas, and mineral exploration activities.
- **Freedom of Navigation Principle:** Guarantees unhindered movement of merchant ships and aircraft in international waters.
- **Importance for Global Trade:** Ensures uninterrupted maritime commerce and energy transportation.

Implications for India

- **Energy Security Concerns:** India depends heavily on West Asian crude imports passing through the Strait of Hormuz.
- **Trade and Shipping Risks:** Escalation could disrupt supply chains, increase freight charges, and affect India's external trade balance.
- **Need for Diplomatic Balancing:** India must maintain strategic relations with both Iran and the United States while safeguarding maritime interests.
- **Naval Preparedness:** Enhanced maritime surveillance and protection of Indian commercial vessels become essential.

Way Forward

- **Strengthening International Maritime Governance:** Greater adherence to United Nations Convention on the Law of the Sea norms is necessary to preserve global commons.

- **Diplomatic Resolution:** Multilateral negotiations involving Iran, the United States, and maritime institutions are essential for stability.
- **Ensuring Freedom of Navigation:** The global community must protect uninterrupted commercial shipping and oppose unilateral restrictions in international waterways.
- **Role of International Institutions:** Stronger intervention by the United Nations and International Maritime Organization can reduce tensions and uphold maritime law.

2. UAE Announces Exit from OPEC

Why in News?

- United Arab Emirates' exit from Organization of Petroleum Exporting Countries (OPEC) creates new strategic energy security opportunities for India.

About Organization of Petroleum Exporting Countries (OPEC)

- **Formation of OPEC:** The Organization of Petroleum Exporting Countries was established in 1960 at Baghdad by Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela.
- **Purpose of Formation:** Created to coordinate petroleum policies and protect interests of oil-producing nations.
- **Headquarters:** OPEC headquarters is located in Vienna, Austria.
- **Membership Structure:** Membership mainly includes major oil-exporting developing countries from West Asia, Africa, and Latin America.

Strategic Reasons Behind United Arab Emirates Exit

- **Production Expansion Goals:** The United Arab Emirates increased upstream production capacity to over 4.85 million barrels per day.
- **Monetisation Objective:** The country aims to maximise oil revenues before the global energy transition reduces fossil fuel demand.
- **Regional Geopolitical Divergence:** Differences with Saudi Arabia over Yemen conflict and Red Sea security widened strategic gaps.
- **Shipping Security Concerns:** The United Arab Emirates prioritised uninterrupted maritime trade routes due to dependence on open sea lanes.
- **Abraham Accords and Strategic Alignment:** The United Arab Emirates strengthened ties with Israel under the 2020 Abraham Accords.
- **Energy Infrastructure Security:** Cooperation includes cybersecurity, intelligence sharing, and protection of energy assets.
- **India-Middle East-Europe Economic Corridor (IMEC):** The corridor seeks alternative connectivity routes bypassing the Strait of Hormuz.
- **Strategic Connectivity Initiative:** Enhances trade resilience and reduces dependence on vulnerable maritime chokepoints.

India's Strategic Petroleum Reserves (SPR)

- **Purpose of Strategic Petroleum Reserves:** Strategic Petroleum Reserves are emergency crude oil storage facilities for energy security during supply disruptions.
- **Managed by ISPR:** Indian Strategic Petroleum Reserves Limited oversees the reserve infrastructure.
- **Current Capacity:** India's government-held strategic reserve capacity stands at about 5.33 million metric tonnes.
- **Coverage Duration:** Combined reserves provide approximately 74 days of national oil demand coverage.
- **Existing Facilities:** Storage caverns are located at Vishakhapatnam, Padur, and Mangaluru, with expansion planned at Chandikhol and Padur.

- **Strategic Coastal Positioning:** Facilities were designed for rapid receipt of Gulf crude supplies.

Challenges in India's Strategic Petroleum Reserves

- **Insufficient Reserve Coverage:** India's reserves remain below International Energy Agency standards requiring 90 days of net import cover.
- **Global Comparison:** Japan maintains about 254 days and South Korea around 210 days of reserves.
- **Delays in Expansion Projects:** Planned expansion projects faced setbacks due to land acquisition, financing, and environmental clearances.
- **Infrastructure Vulnerability:** Lack of storage in northern India creates logistical distribution challenges.
- **Legal Ambiguity Risk:** Ownership and emergency access rights remain unclear during crises.

India-United Arab Emirates Bilateral Energy Opportunities

- **Long-Term Supply Agreements:** Freed from OPEC quotas, UAE can negotiate flexible government-to-government oil supply contracts.
- **Stable Energy Partnership:** Long-term agreements enhance India's energy security.
- **Rupee-Dirham Trade Settlement:** The United Arab Emirates' exit from OPEC improves feasibility of non-dollar oil trade mechanisms.
- **Reducing Dollar Dependence:** Supports India's broader de-dollarisation efforts in international trade.
- **Industrial Cooperation:** Expands bilateral collaboration in manufacturing and energy infrastructure.
- **Need for Renegotiating Storage Agreements:** Existing storage arrangements should evolve into binding emergency access mechanisms for India.
- **Strategic Sovereignty:** India requires guaranteed control over strategic reserves during disruptions.

3. WTO and It's Relevance

Why in the news?

- The 14th Ministerial Conference of the World Trade Organisation highlighted unresolved concerns regarding development, trade inequality, and global stability.

About the World Trade Organisation

- **Establishment and Objective:** The World Trade Organisation was established in 1995 to regulate global trade and ensure rule-based multilateral trading systems.
- **Ministerial Conference:** It is the highest decision-making body of the World Trade Organisation and meets periodically to review trade negotiations.
- **Most Favoured Nation Principle:** Member countries must extend equal trade benefits to all members without discrimination.
- **Special and Differential Treatment:** It provides flexibility and support measures for developing and least developed countries in trade obligations.

World Trade Organisation and Development Concerns

- **Background:** The World Trade Organisation was created to promote rules-based global trade and integrate developing economies into global markets.
- **Doha Development Agenda:** Launched in 2001 to prioritise development concerns of poorer nations, but negotiations remain largely unresolved.
- **Current Concerns:** Developing countries continue to face unequal market access, subsidy distortions, and limited participation in global value chains.

Major Challenges Before Developing Countries

- **Chinese Manufacturing Overcapacity:** State-supported industrial expansion and cheap exports from China undermine manufacturing sectors in many developing economies, including India.
- **Trade Weaponisation:** Geopolitical conflicts and sanctions increasingly disrupt food, fuel, technology, and supply chains, affecting vulnerable economies disproportionately.
- **Strategic Chokepoints:** Conflicts around maritime routes such as the Strait of Hormuz threaten energy imports, trade stability, and inflation management.
- **Digital and Cyber Risks:** Developing nations face growing challenges from cyberattacks, surveillance, and misuse of data in interconnected trade systems.
- **Environmental Concerns:** Excessive industrialisation and exploitative trade practices have intensified ecological degradation and biodiversity loss.

Concerns for India

- **Manufacturing Competitiveness:** Cheap imports and overcapacity in global markets affect domestic industries under initiatives such as Make in India.
- **Energy Security:** Dependence on imported crude oil exposes India to disruptions caused by geopolitical tensions and maritime insecurity.
- **Food and Fertiliser Supply:** Global conflicts and supply chain disruptions directly affect agricultural productivity and food inflation in India.
- **Trade Deficit Challenges:** Imbalanced trade relationships with major economies continue to widen India's external vulnerabilities.
- **Technology Dependence:** Restrictions in semiconductor supply chains and advanced technologies impact India's digital and industrial ambitions.

Limitations of the World Trade Organisation

- **Stalled Reforms:** The World Trade Organisation has struggled to modernise rules to address emerging geopolitical and technological realities.
- **Weak Development Focus:** Developmental concerns of poorer nations receive limited priority compared to major power trade interests.
- **Limited Security Integration:** Trade frameworks inadequately address national security concerns linked to supply chains and strategic dependencies.
- **Institutional Rigidity:** Decision-making processes remain slow and consensus-driven, limiting timely responses to crises.

Way Forward for India and Developing Nations

- **Strengthening Multilateralism:** India should advocate inclusive reforms in the World Trade Organisation to protect developmental interests.
- **Diversification of Trade Partners:** Expanding trade agreements and resilient supply chains can reduce dependence on a few economies.
- **Promoting Domestic Manufacturing:** Strengthening industrial competitiveness through infrastructure, innovation, and skill development is essential.
- **Integrating Security with Trade:** Economic policies must incorporate energy security, cybersecurity, and strategic autonomy considerations.
- **Sustainable Development Approach:** Trade and growth models should align with climate resilience, ecological sustainability, and responsible consumption.



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S. Chitharanjan - IPS

AIR- 155 UPSC CSE 2021

“

I began my Civil Services preparation in 2012. I did not secure a rank in my first two attempts. In 2015, I secured All India Rank 574 and was selected for the Indian Railway Accounts Service (IRAS). In 2016, I secured All India Rank 357 and was allotted the Indian Revenue Service (Income Tax). Finally, in 2021, I secured All India Rank 155 and fulfilled my dream by being selected for the Indian Police Service (IPS). The mock interviews conducted at R.C.Reddy IAS Study Circle helped me immensely in refining my personality test performance. ”

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B. Chaitanya reddy - IPS

AIR- 161 UPSC CSE 2021

“

After completing engineering, I worked briefly in Chennai before joining the Telangana Irrigation Department as an AEE in 2016. While working, I prepared for the Civil Service exam for 5 years. I couldn't clear prelims in my first two attempts, wrote Mains in 2019, and missed the 2020 interview by seven marks. In 2021, I finally received the interview call and scored 201 marks in the interview. This was possible due to the mock interviews and guidance at R.C. Reddy IAS Study Circle. R.C. Reddy Sir also gave me many valuable suggestions. ”

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GENERAL STUDIES - 3

A. INDIAN ECONOMY

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

1. PRODUCTIVITY AS THE ENGINE OF VIKSIT BHARAT 2047"

Why in News?

- The **Economic Survey 2025-26** has underlined that India's journey to **Viksit Bharat 2047** must shift focus from mere GDP expansion to **productivity-driven growth**, with **Total Factor Productivity (TFP)** identified as the central driver of sustainable development.

India's Economic Transformation"

- Total Factor Productivity (TFP):** reflects how efficiently labor and capital are combined to produce output, highlighting the *quality* of growth rather than just its scale.
- Beyond Factor Accumulation:** Unlike GDP expansion through more factories or workers, productivity growth stems from **innovation, institutional reforms, technology adoption, and efficient resource allocation**, making development more sustainable.
- India's Growth Puzzle:** Despite strong GDP numbers, India's productivity contribution remains modest-TFP accounts for less than **20% of long-term growth**, compared to **50-60% in advanced economies**, showing the need for structural transformation.
- Sectoral Imbalances:** Gains are uneven-IT and financial services show high efficiency, but **agriculture and small-scale manufacturing lag**, trapping millions in low-yield activities and slowing inclusive growth.

Indian Scenario

- Output per Worker:** Grew at **4.71% annually (1990-2023)**, but TFP contributed only **1.19 percentage points**, showing dependence on labor and capital.
- Macroeconomic Momentum:** GDP growth rose from **6.5% (FY25)** to **7.4% (FY26)**; fiscal deficit narrowed from **9.2% (FY21)** to **4.8% (FY25)**.
- Manufacturing Structure:** **99% of units are micro-enterprises**, while mid-sized firms are **<1%**, limiting scale and exports.
- Agricultural Trap:** **55.8% of rural workforce** remains in low-productivity agriculture; manufacturing absorbs only **22.6%**.
- Zombie Firms:** **<10% of firms** consume **20-25% of corporate debt**, crowding out productive investment.

Importance of Productivity for Viksit Bharat 2047

- Jobs & Growth Link:** Sustained TFP ensures industrial expansion creates **formal, high-quality employment**.
- Unlocking Capital:** Exit of zombie firms frees up **trapped financial assets** for innovative industries.
- Deep Manufacturing:** Moving beyond assembly to **component manufacturing** integrates India into **Global Value Chains (GVCs)**.
- Stable Growth:** Productivity allows scaling without wage-price spirals, keeping competitiveness intact.
- Human Capital:** Re-skilling youth in states like UP and Bihar shifts workers from low-yield agriculture to high-value industry.

Initiatives Taken to Boost Productivity

- **Insolvency and Bankruptcy Code (IBC):** Launched in **2016** to provide exit for unviable firms. Till 2025, over **6,500 cases resolved**, with average recovery of **32% of claims**.
- **Production Linked Incentive (PLI) Schemes:** Cover **14 sectors** like electronics, pharma, textiles, renewables. Expected to add **₹3 lakh crore production** and create **6 million jobs by 2027**.
- **National Logistics Policy (NLP) & PM GatiShakti:** Aim to cut logistics costs from **13-14% of GDP to 8% by 2030**. Integrated **200+ infra projects**; India ranked **38th in World Bank's Logistics Index (2025)**.
- **Revamped Distribution Sector Scheme (RDSS):** Started in **2021** to support state discoms. Reduced **AT&C losses** from **21% (2019) to 16.5% (2025)**.

Challenges

- **Factor Dependence:** Growth still driven by capital deepening, not productivity.
- **Institutional Frictions:** Land and labor rigidities hinder resource reallocation.
- **Zombie Firms:** Bank financing prolongs distress, absorbing credit.
- **Skill Mismatches:** Less than **50% of engineering graduates** possess industry-ready skills.
- **Regional Disparities:** Industrial gains concentrated in Tamil Nadu, Karnataka; populous states remain agriculture-dependent.

Way forward

- **Exit Frameworks:** Strengthen IBC and liquidation protocols for faster resolution of zombie firms.
- **Equity Financing:** Develop deep equity ecosystems to reduce reliance on bank debt.
- **Vocational Human Capital:** Align curricula with global market demands; expand apprenticeships.
- **Decentralized Hubs:** Empower tier-2 and tier-3 cities with targeted infrastructure.
- **Corporate R&D:** Reform patent commercialization, incentivize indigenous tech breakthroughs.

Conclusion

India's **post-pandemic growth momentum** has built a strong macroeconomic base, but achieving **Viksit Bharat 2047** requires a decisive shift from **factor accumulation to productivity-driven growth**.

II. Growth and Development, employment

1. ORANGE ECONOMY IN INDIA

Why in News?

- Recently, the **Orange Economy** has gained attention as India seeks to harness the potential of creativity, culture, and digital content as important engines of economic growth and employment generation.

What is orange economy:

- The **Orange Economy** refers to an **economic model driven by creativity, cultural expression, and IP ownership**.
- It spans **design, film, animation, gaming, fashion, digital media, and immersive storytelling**, focusing on **monetizing India's cultural wealth** for global markets.

Orange Economy as Growth Engine

- **Monetization of Cultural Assets:** Transforming myths, languages, and traditions into **owned IP franchises** for long-term value.

- **Multidisciplinary Convergence:** Integration of design, film, and gaming creates **globally impactful experiences**.
- **Creator-Led Entrepreneurship:** Creators act as distribution engines, taking **Indian narratives to global audiences**.
- **Strategic Infrastructure:** Treating culture as **national infrastructure**, enabling studio-scale IP across cinema, streaming, and merchandise.

Indian scenario:

- **Digital Reach:** India has **1.028 billion internet subscribers**, including **1 billion broadband users**, making it a premier digital entertainment market.
- **Gaming Sector:** India is the **second-largest gaming market** with **42.5 crore gamers**; industry size ₹16,428 crore in FY23, growing at **28% CAGR**.
- **Creator Economy:** 2-2.5 million active creators influence **\$350-400 billion consumer spending**, projected to reach **\$1 trillion by 2030**.
- **YouTube Ecosystem** - Contributed **₹16,000 crore to GDP in 2024**, supporting **9.3 lakh jobs**.
- **Employment Potential** - AVGC-XR initiative expected to generate **20 lakh jobs** in the next decade.

Challenges

- **Platform Dependency:** Reliance on foreign platforms' algorithms for visibility and monetization.
- **Weak IP Ownership:** India produces content but lacks ownership of characters/storytelling systems.
- **Fragmented Training:** Education focuses on narrow skills, not cross-disciplinary creative intelligence.
- **Monetization Fragility:** Creator wealth unstable, dependent on ads rather than licensing.
- **Funding & Legal Literacy:** Limited access to capital and weak awareness of IP rights.

Way Ahead

- **Reform Creative Training:** Integrate storytelling, design, and business models into curricula.
- **Prioritize Ownership:** Encourage proprietary formats, licensing, and paid communities.
- **Integrate AI Workflows:** Use AI for content creation, licensing, and entrepreneurship.
- **Strengthen Global Distribution:** Build confident channels for international scaling.
- **Cooperative Federalism:** Align Union, State, and local policies to strengthen creative ecosystems.

Conclusion

India's **Orange Economy** marks a **strategic shift** toward treating culture as an **economic asset**. By focusing on **IP ownership, interdisciplinary innovation, and global distribution**, India can evolve from a **content producer to a global creative leader**.

2. MEDICAL AND WELLNESS TOURISM IN INDIA

Why in News?

- The government's **Heal in India initiative** and the launch of the **AYUSH Visa (2023)** have accelerated India's positioning in the global medical and wellness tourism market.

Medical and Wellness Tourism in India

- **Medical and Wellness Tourism** refers to foreign nationals traveling to India for **curative medical treatments or preventive holistic therapies**.
- India's medical tourism market is valued at **USD 8.7 billion (2025)**, projected to reach **USD 16.2 billion by 2030**.

- In **2025**, **5.5% of Foreign Tourist Arrivals (FTAs)** were medical tourists, with **507,244 patients**, making India rank **10th globally in medical tourism** and **12th in wellness tourism**.

Medical Tourism Potential

- **Cost Competitiveness:** Surgeries in India are **60-80% cheaper** than in the US/UK.
- **Accredited Infrastructure:** Over **1,299 NABH-accredited hospitals**, many with **JCI certification**.
- **Expert Workforce:** India has **1.2 million registered doctors**, meeting WHO's doctor-population ratio.
- **No Waiting Periods:** Immediate access to **organ transplants and cancer care**, unlike delays in Western systems.

Wellness Tourism Potential

- **Birthplace of Ayurveda & Yoga:** India offers authentic therapies like **Panchakarma and Naturopathy**.
- **AYUSH Ecosystem:** Dedicated ministry and specialized centers integrated into **Regional Medical Hubs**.
- **Preventive Focus:** Kerala and Rishikesh attract global tourists for **lifestyle disease management**.
- **Global Branding:** Yoga promoted under "**One Earth, One Health**", strengthening India's soft power.



Government Initiatives

- **Heal in India Initiative:** Flagship program to position India as a premier destination.
- **Dedicated Visas:** e-Medical Visa, e-Medical Attendant Visa, and **AYUSH Visa (2023)**.
- **Regional Medical Hubs:** Budget 2026-27 proposed **five integrated healthcare complexes**.
- **Quality Standardization:** Adoption of **ISO 22525** and NABH accreditation for wellness centers.
- **Digital Transformation:** Upgraded **MVT Portal** for booking, payments, and post-operative care.

Challenges

- **Regional Concentration:** Services clustered in **Delhi, Mumbai, Bangalore**, leaving **North-East underserved**.
- **Skilled Workforce Gaps:** Shortage of **paramedical staff and foreign language guides**.
- **Informal Facilitators:** Unregistered agents create **trust issues**.
- **Insurance Discrepancies:** Limited **international coverage for AYUSH treatments**.
- **Perception Issues:** Traditional medicine still seen as **alternative, not evidence-based**.

Way Forward

- **Expand Institutes:** Establish **three new All India Institutes of Ayurveda** for research and education.
- **Skill Development:** Train **10,000 guides and staff** in foreign languages and cultural sensitivity.

- **Airport Facilitation:** Set up **MVT lounges** at major airports.
- **Global Summits:** Continue **Global Synergy in AYUSH** to build trust with foreign health boards.
- **Integration with Tourism:** Promote MVT as a **sub-brand of Incredible India**.

Conclusion

India's unique blend of **high-tech medical care and AYUSH-led wellness** positions it strongly in the **USD 115 billion global MVT market**. With **regional hubs, and skill development**, India can become the **world's most trusted destination for holistic health and well-being**.

3. AI-POWERED FINANCIAL INCLUSION IN INDIA

Why in News?

- India's journey toward **AI-powered financial inclusion** has accelerated in 2026, with **Digital Public Infrastructure (DPI) and advanced analytics** enabling wider banking access, faster payments, and AI-driven credit solutions for underserved communities.

Financial Inclusion

- **Formal Access:** Providing affordable financial products and services (bank accounts, credit, insurance, pensions, payments) to all sections of society.
- **Inclusivity:** Focuses on marginalized groups-rural poor, women, small businesses-who are often excluded from formal finance.
- **Sustainability:** Services must be delivered responsibly, ensuring long-term trust and financial stability.

Financial Inclusion in India (2025-26)

- **FI-Index:** RBI's Financial Inclusion Index rose to **67 in 2025**, up **24.3% since 2021**, showing improved access, usage, and quality of services.
- **Jan Dhan Accounts:** Over **58.16 crore accounts** opened, with deposits crossing **₹3.02 lakh crore**.
- **Aadhaar Coverage:** More than **144 crore Aadhaar IDs** generated, enabling biometric authentication for financial services.
- **UPI Transactions:** In March 2026 alone, UPI processed **₹29.53 lakh crore**, accounting for **81% of retail payments**.
- **Global Benchmark:** World Bank's Global Findex 2025 shows **89% of Indian adults own bank accounts**, one of the highest globally.

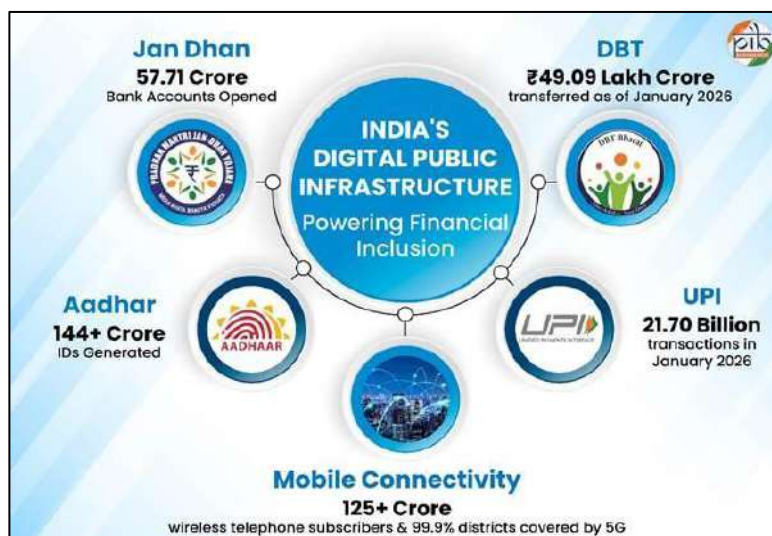
Role of AI in Financial Inclusion

- **Alternative Credit Scoring:** Uses satellite data and digital footprints to assess farmers and MSMEs without CIBIL scores.
- **Language Accessibility:** Voice-based banking in **22 Indian languages** via Banking BHASHINI.
- **Fraud Detection:** Tools like **MuleHunter.AI** detect suspicious transactions in real time.
- **Hyper-Personalized Solutions:** Mission Digital ShramSetu integrates **490 million informal workers** into formal systems.
- **Operational Efficiency:** AI-enabled **Account Aggregator APIs** allow instant, paperless loan approvals.

Government Initiatives

- **JAM Trinity:** Jan Dhan, Aadhaar, Mobile created the largest digital identity and banking network.
- **Unified Lending Interface (ULI):** Integrates land records and tax filings for seamless digital credit.
- **RBI Sandbox:** Testing ground for AI-driven fintech innovations.

- **Direct Benefit Transfer (DBT):** Over **₹49.09 lakh crore** transferred directly to beneficiaries, reducing leakages.



Challenges

- **Algorithmic Bias:** AI models trained on skewed datasets risk discrimination. For example, studies show **women entrepreneurs in rural clusters receive 20-30% less credit approval** compared to men when historical data is used uncorrected.
- **Data Privacy Concerns:** With **144 crore Aadhaar IDs** and **58 crore Jan Dhan accounts**, consent-based sharing needs stronger safeguards to prevent unauthorized harvesting of sensitive data.
- **Digital Literacy Gap:** Despite UPI handling **₹29.53 lakh crore in March 2026**, surveys indicate **over 40% of rural users** remain vulnerable to OTP scams and social engineering.
- **Cybersecurity Threats:** AI-powered phishing and deepfake attacks are rising. RBI reported a **32% increase in digital fraud cases in 2025-26**, many targeting first-time digital users.
- **Technological Divide:** While **5G covers 99.9% of districts**, smartphone penetration in rural India is only **58%**, limiting access to high-resolution AI services.

Way Forward

- **Strengthen Banking BHASHINI:** Scale voice-first AI interfaces to cover the next **500 million users**, enabling banking in **22 scheduled Indian languages**.
- **Expand ULI Reach:** Integrate **Regional Rural Banks (RRBs)** and co-operative banks into AI-enabled credit systems to bridge the **USD 130-170 billion MSME credit gap**.
- **Ethical AI Frameworks:** Develop national standards for **Explainable AI**, ensuring transparency and fairness in credit scoring.
- **Fintech-Bank Collaboration:** Use the **RBI Sandbox** to encourage legacy banks to adopt AI-driven risk models tested by fintech startups.
- **Digital Education:** Launch gamified AI-led literacy campaigns; with **over 80% of Jan Dhan account holders from rural areas**, targeted awareness can reduce fraud vulnerability.

Conclusion

India's transition from **basic banking access to AI-driven empowerment** is a global benchmark. By turning **digital footprints into collateral** and **language into an interface**, AI is bridging the **USD 170 billion credit gap** for the underserved.

III. Inclusive growth and issues

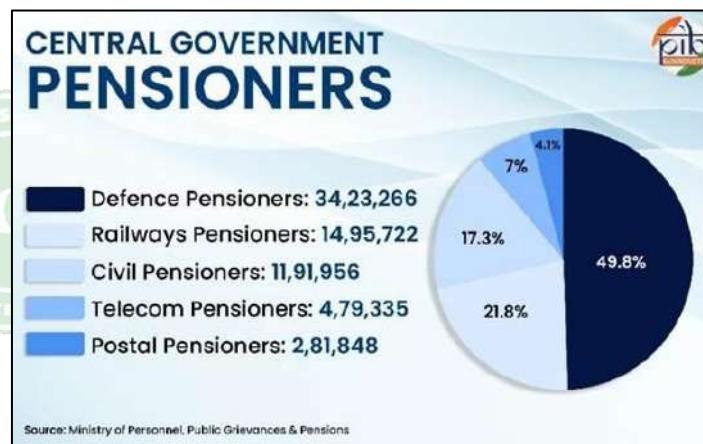
1. INDIA'S PENSION ARCHITECTURE AND TRANSITION TO SUSTAINABILITY

Why in News?

- India is **shifting from defined-benefit pensions to contributory models** for fiscal sustainability, with new schemes marking a move toward **inclusive and predictable old-age security**.

India's Pension System

- Multi-Pillar Framework:** Covers **government employees, private sector workers, informal labour, and vulnerable groups**, ensuring broad retirement security.
- Focus on Sustainability:** Shift from **defined-benefit pensions to contributory models** for long-term fiscal health.
- Wider Coverage:** Expansion into the **unorganised sector** through schemes like **Atal Pension Yojana (APY)**.
- Digital Integration:** Use of **JAM trinity (Jan Dhan-Aadhaar-Mobile)** and online platforms to simplify access and improve efficiency.



Current Pension Landscape

- National Pension System (NPS):** Over **2.17 crore subscribers**; Assets under management (AUM) of **₹15.95 lakh crore (March 2026)**.
- Atal Pension Yojana (APY):** **8.96 crore enrolments**; corpus of **₹51,400 crore**; provides fixed pensions up to ₹5,000/month.
- Employees' Pension Scheme (EPS):** Covers **7.98 crore organised sector workers** (April 2026).
- Social Pensions:** Central schemes cover **2.92 crore beneficiaries**; states add **1.41 crore more**; average payout ~₹1,000/month.
- Government Pensioners:** Over **34 lakh Defence** and **14 lakh Railways pensioners** still under defined-benefit systems.

Recent Initiatives

- One Rank One Pension (OROP, 2015):** Ensures uniform pensions for defence personnel.
- Balanced Life Cycle Fund (2024):** Allows **50% equity exposure till age 45** under NPS Auto Choice.
- Unified Pension Scheme (UPS, 2025):** Offers **inflation-linked assured pension** within NPS.
- NPS Vatsalya (2024):** Enables guardians to open pension accounts for minors.
- Social Security Code (2020/2025):** Extends pension benefits to **gig and platform workers**.
- Digital Integration:** Use of **JAM trinity (Jan Dhan-Aadhaar-Mobile)** for efficient pension delivery.

Challenges

- **Low Replacement Rates:** NPS returns depend on markets; annuity payouts often inadequate.
- **Fiscal Burden:** Defence & Railways pensions (48 lakh beneficiaries) consume large budget allocations.
- **Coverage Gap:** Over **400 million informal workers** remain outside pension nets.
- **Inflation Risk:** Fixed APY payouts (₹1,000-₹5,000) lose value over time.
- **Longevity Risk:** Rising life expectancy reduces monthly annuity payouts.

Way Ahead

- **Universal Coverage:** Expand **All Citizen Model** for portable pension accounts.
- **Financial Literacy:** Promote early savings awareness; highlight compounding benefits in schemes like NPS Vatsalya.
- **Gig Economy Integration:** Operationalize **Social Security Code** for platform workers.
- **Strengthen Annuity Markets:** Diversify products for better monthly returns.
- **Periodic Review:** Index **NSAP payouts** to inflation for vulnerable elderly.

Conclusion

India's pension system is evolving into a **multi-pillar, contributory, and digitally integrated framework** that balances **fiscal sustainability with social inclusivity**. With innovations like **UPS and NPS Vatsalya**, the country is building a secure future for its aging population.

IV. Agriculture and allied

1. MAKING INDIAN FARMING FUTURE-READY

Why in News?

- Recently, **agricultural engineering has gained importance as a major driver in India's transition** from conventional farming practices to a sustainable and technology-oriented agricultural system.

Agricultural Engineering and Modern Farming

- **Agricultural engineering** applies **scientific and technological principles** to enhance farming efficiency across soil, water, crop, and post-harvest stages, making agriculture more productive and sustainable.
- It is central to India's ambition of **doubling farmers' income, ensuring food security, and building climate-resilient agriculture** in the face of rising climate risks.
- With **47% mechanization (CIAE, 2025)** and increasing adoption of **precision farming tools like drones, sensors, and GPS-enabled machinery**, engineering is becoming the **backbone of modern Indian agriculture**.
- According to the **Economic Survey 2024-25**, precision farming technologies have already improved **fertilizer efficiency by 12-15%** and reduced **pesticide use by nearly 20%**, showing how engineering directly contributes to sustainable growth.

Indian scenario:

- **Post-Harvest Loss Reduction:** Cold-chain and processing systems can cut wastage by **up to 75%**, addressing losses of **15-58% (CIPHET)**.
- **Precision Farming:** Variable Rate Technology (VRT) and data-driven pest control improve **fertilizer efficiency by 12-15%** and reduce **pesticide use by ~20% (ICAR, 2024-25)**.
- **Water & Energy Savings:** Micro-irrigation achieves **85-90% efficiency**, saving **5% water and 30.5% electricity (PMKSY)**.

- **Mechanization Gains:** At **47% mechanization**, productivity rises **12-15%**, costs fall **~20%**, and sowing labour drops **60-70%** (NITI Aayog, CIAE).

Modern Engineering Applications

- **Precision Equipment:** Laser land levelers and seed drills ensure **uniform sowing and water distribution**.
- **Water Management:** Drip and sprinkler systems deliver **water directly to roots**, minimizing evaporation.
- **Soil Conservation:** Terracing and bunding prevent **erosion and maintain topsoil**.
- **Post-Harvest Systems:** Cold storage and automated grading extend **shelf life and market value**.
- **Smart Data Tools:** Drones and sensors enable **real-time monitoring of pests and nutrients**.

Opportunities for Modernization

- **System Connectivity:** Integrates **seed quality, irrigation, and processing** for seamless supply chains.
- **Economic Viability:** Precision tools help farmers meet **export-grade quality standards**.
- **Climate Resilience:** Polyhouses and greenhouses enable **year-round cultivation**.
- **Resource Recycling:** Rainwater harvesting and greywater reuse enhance **sustainability**.

Challenges

- **High Initial Costs:** Advanced machinery like combine harvesters cost **₹ 10 lakh +**, unaffordable for small farmers.
- **Fragmented Landholdings:** Large-scale tech inefficient on **sub-1-acre plots**.
- **Knowledge Gap:** Farmers lack **training to operate digital tools**.
- **Infrastructure Deficit:** Poor **rural electricity and logistics** hinder post-harvest efficiency.

Way Forward

- **Incentivize Smart Tech:** Promote **solar-powered and robotic equipment** to cut fossil fuel use.
- **Rental Models:** Establish **custom hiring centers** for affordable access to machinery.
- **Integrated Education:** Blend **engineering and field-level training** in agri-curricula.
- **Inclusive Policy Support:** Target **smallholders with subsidies** for precision irrigation.
- **Strengthen Post-Harvest Chains:** Build **village-level drying, grading, and processing units**.

Conclusion

Agricultural engineering is the **catalyst for future-ready Indian farming**, merging innovation with inclusivity. By linking **technology, training, and infrastructure**, India can build a **resilient, efficient, and profitable agricultural system**.

2. TWIN CRISIS IN INDIAN AGRICULTURE AND FERTILIZER SHORTAGES

Why in News?

- India is facing a **dual agricultural crisis** in 2026, with **intense heatwaves damaging staple crops** and **fertilizer shortages triggered by global conflicts** driving up input costs, threatening food security and rural livelihoods.

Heatwaves and Crop Yields

- **Wheat Stress:** Terminal heat in Punjab, Haryana, and Uttar Pradesh has led to shriveled grains, reducing both yield and flour quality.
- **Rice Vulnerability:** High temperatures during nursery stages delay transplanting, lowering final yields.
- **Pan-India Spread:** Unlike earlier years, heatwaves now affect **all climatic zones**, leaving no region unaffected.

Irrigation and Groundwater Stress

- **Rising Demand:** Increased evapotranspiration forces farmers to irrigate more frequently, straining groundwater.
- **Infrastructure Gaps:** Nearly **50% of Indian agriculture remains rain-fed**, leaving farmers vulnerable.
- **Monsoon Deficit:** Weak monsoons combined with heatwaves risk complete crop failure in several districts.

Fertilizer Crisis

- **West Asia Conflict:** Disruption of natural gas and ammonia supply has hit urea production. India imports nearly **30% of its urea needs**, making it highly vulnerable.
- **Strait of Hormuz:** Handles **20% of global fertilizer trade**; disruptions have raised shipping costs by **40-50%** in 2026.
- **Export Restrictions:** China restricted urea exports in 2025-26, while Russia cut DAP supplies. India's fertilizer import bill touched **₹27.2 lakh crore in 2025-26**, second only to the Russia-Ukraine war peak.

Inflation and Rural Distress

- **Input Cost Rise:** Fertilizer prices rose by **20-25% in 2026**, hitting small and marginal farmers (who form **82% of India's farming community**).
- **Food Inflation:** Wheat and rice output fell by **8-10% in 2025-26**, pushing retail food inflation above **7%**.
- **Rural Debt:** Over **52% of agricultural households** are indebted; crop failures deepen poverty cycles and reduce rural demand.



Climate Resilience Gap

- **Reactive Measures:** Relief packages dominate instead of proactive resilience building.
- **Seed Research Lag:** ICAR has developed heat-resistant wheat and rice varieties, but adoption remains below **15% of total cropped area**.

- **Extension Services:** Only **30% of farmers** access formal extension services, leaving most unaware of climate-smart practices.

Way Forward

- **Technological Solutions:** Scale up climate-smart seeds and promote **Nano-Urea**, which reduces chemical use by **50%**.
- **Infrastructural Measures:** Expand micro-irrigation (currently covering only **12% of cropped area**) and strengthen cold chain facilities to reduce post-harvest losses.
- **Geopolitical Diversification:** Build partnerships with Africa and South America to reduce dependence on China and West Asia.
- **Financial Support:** Strengthen **PMFBY insurance payouts**, ensuring compensation within **15 days** for heat-related crop losses.
- **Educational Outreach:** Use **Krishi Vigyan Kendras (KVKs)** to train farmers in early sowing, organic alternatives, and water-efficient practices.

Conclusion

India's agriculture is at a **critical juncture**, facing simultaneous climate and supply chain shocks. Building a **permanent climate-resilient system** with strong infrastructure, diversified inputs, and farmer empowerment is essential.

V. Inflation

1. SHOULD THE RUPEE BE LEFT TO DEPRECIATE

Why in News?

- The **Indian rupee** has plunged to a record closing low driven by the **West Asia conflict**, rising **Brent crude near \$110/barrel**, and **foreign capital outflows**, raising debate on whether the rupee should be allowed to depreciate freely.

Currency Depreciation

- Currency depreciation means a **decline in the value of a currency** against foreign benchmarks (mainly the U.S. dollar) under a floating exchange rate system.
- **Drivers:** It can be **market-driven** (due to trade deficits, capital flight, global speculation) or influenced by **policy interventions** (such as central bank actions).
- **India's Sensitivity:** India's heavy reliance on **imported crude oil (≈25% of total imports)** makes rupee depreciation highly sensitive, as it directly impacts **inflation, fuel prices, and overall growth stability**.

Recent trends

- **Record Low:** Rupee touched **₹96.95/\$ intraday**, closing at **₹96.86/\$**.
- **Depreciation Margin:** Down **11.5% YoY** from May 2025 baseline of ₹84.99/\$; **5.5% fall in 2026 alone**.
- **Forex Reserves:** Declined from **\$728.5 bn peak to \$696.9 bn** due to RBI interventions.
- **Capital Flight:** FIIs pulled out **\$20.6 bn** from equities, worsening dollar shortage.

RBI's Intervention Tools

- **Spot Market Sales:** RBI sells U.S. dollars directly to stabilize **intraday volatility** in the rupee.
- **Forward Contracts:** Used to manage **long-term liquidity expectations** without draining reserves immediately.
- **Moral Suasion:** RBI advises banks and corporates to **hedge dollar exposures** to reduce risk.

- **Monetary Policy:** Interest rate hikes widen yield differentials, attracting **capital inflows**.
- **Trade Coordination:** Import duties on gold/silver raised to **15%** to curb non-essential dollar outflows.

Weak vs. Falling Rupee

- **Weak Rupee:**
 - Means the rupee stays at a **low but stable level**.
 - Helps **exports** become cheaper abroad.
 - Over time, it can **reduce the Current Account Deficit (CAD)**.
- **Falling Rupee:**
 - Refers to a **fast and unstable decline** in value.
 - Makes **imports costlier**, especially crude oil.
 - Leads to **inflation** and a **wider CAD**.
- Oil imports form **about 25% of India's total imports**, so rupee volatility directly impacts fuel prices and inflation.

Role of Capital Flows

- **Speculative Outflows:** Foreign investors (FIIs) often move money quickly, causing big swings in the rupee's value.
- **Interest Rate Asymmetry:** When the **U.S. Federal Reserve raises rates**, investors shift funds out of India to earn better returns abroad.
- **Liquidity Shocks:** Sudden capital flight creates a **shortage of dollars**, making the rupee fall even faster.

Way Forward

- **NRI Dollar Schemes:** Launch **high-yield deposit programs** for Non-Resident Indians to attract **stable and long-term dollar inflows**.
- **Import Caps:** Expand duties on **non-essential imports** (like gold and silver) to reduce unnecessary **foreign exchange outflows**.
- **Local Currency Trade:** Promote **bilateral trade invoicing** in rupee or partner currencies (e.g., yuan) to **bypass dependence on the U.S. dollar**.
- **Strategic Floors:** RBI should set **critical depreciation thresholds** beyond which intervention becomes necessary to protect stability.
- **Bond Market Integration:** Fast-track inclusion of **Indian sovereign bonds** in major global indices to secure **long-term, non-speculative capital inflows**.

Conclusion

Allowing the rupee to **freely depreciate** risks **inflation shocks** and **capital instability**. A calibrated mix of **RBI interventions and fiscal checks** is essential to safeguard India's macroeconomic stability.

VI. Infrastructure

1. INDIA'S ENERGY SECURITY AMID CONFLICTS

Why in News?

- Recently, the **escalating conflict in West Asia** has renewed concerns about **India's energy security** by highlighting its dependence on external energy supplies and vulnerability to geopolitical disruptions.

What is Energy Security

- **Beyond Cheap Fuel:** Energy security today is not just about buying fuel at the lowest price; it includes **resilience, diversification, and macroeconomic stability**.
- **India's Perspective:** For India, energy security means ensuring a **steady and affordable energy supply** while being able to withstand **geopolitical and economic shocks**.
- **Strategic Importance:** It is central to sustaining **economic growth, industrial competitiveness, and national security** in a volatile global environment.

India's Energy Security

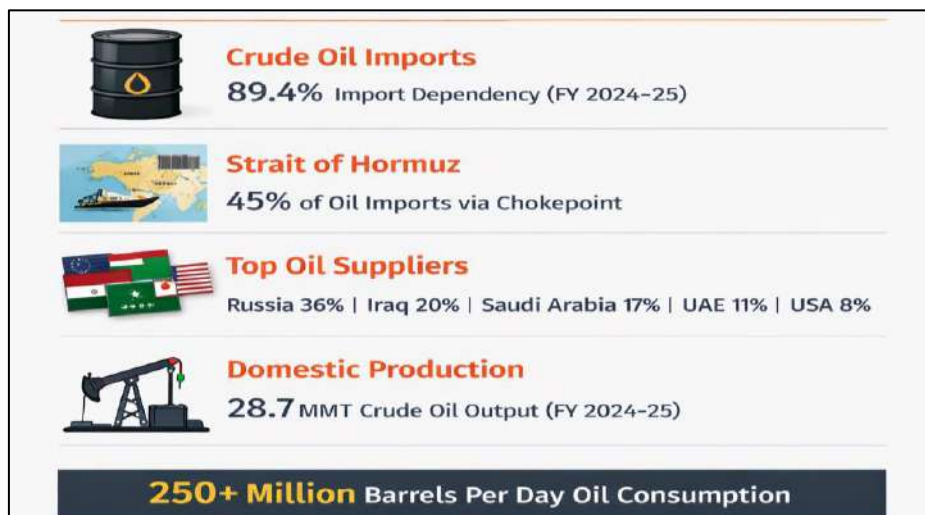
- **Import Dependency:** India imports **~89.4% of crude oil (FY2024-25)**.
- **Chokepoint Risk:** **45% of imports** pass through the **Strait of Hormuz**.
- **Consumption:** Demand projected at **5.99 mb/d by 2026**, making India the **third-largest oil consumer**.
- **Supply Shift:** Russia now supplies **36% of imports**, up from **2% before 2022**.

Present Status of India's Energy Security

- **Tactical Flexibility:** India has diversified its crude oil imports across multiple suppliers - **Russia (36%), Iraq (20%), Saudi Arabia (17%), UAE (11%), and the U.S. (8%)** as of FY2024-25. This diversification has allowed India to adapt quickly to geopolitical shocks, such as shifting from just **2% Russian imports in 2021 to 36% in 2025** due to discounted prices.
- **Structural Risks:** Domestic crude oil production remains stagnant at **28.7 million metric tonnes (MMT) in FY2024-25**, while consumption continues to rise above **250 MMT annually**. This mismatch forces India to rely heavily on imports, making the economy vulnerable to **currency fluctuations, freight costs, and global price volatility**.
- **New Vulnerabilities:** The transition to **electric vehicles (EVs) and solar energy** is creating fresh dependencies on **critical minerals** like lithium, cobalt, and rare earths. India currently processes **less than 5% of its projected 2035 battery-grade mineral requirements**, with **China controlling 91% of global rare-earth processing**. This raises concerns about replacing one dependency (oil) with another (minerals).

Conflicts Disrupting Global Energy Security

- **Russia-Ukraine War:** Exposed risks of pipeline dependence; Europe cut Russian gas reliance from **45% to 12% (2025)**.
- **West Asia Conflict:** Fragility of sea-based transport; **Strait of Hormuz carries 25% of world's oil**.
- **Maritime Threats (2026):** Indian LPG carriers required naval escorts under **Operation Sankalp**.
- **Global Stockpiling:** Japan stockpiled **470 million barrels**, covering **254 days of consumption**.



Implications for India's Energy Security

- **Macroeconomic Instability:** Rising crude prices directly fuel inflation. India's CPI inflation is projected to rise from **2.3% in FY26 to 4.4% in FY27**, slowing industrial growth and household consumption.
- **Strategic Chokepoint Risks:** Nearly **45% of India's crude imports transit through the Strait of Hormuz**, making supply chains highly vulnerable to regional conflicts or blockades.
- **Shift in Bargaining Power:** Gulf nations retain leverage as swing producers, with Saudi Arabia and UAE controlling spare capacity of **~3 million barrels per day**, influencing global prices.
- **Resource Weaponization:** China dominates **91% of global rare-earth processing**, posing risks to India's **EV and solar transition**, as India currently processes **<5% of its 2035 battery-grade mineral needs**.

Way Ahead for India

- **Expand Strategic Reserves:** India's current oil reserves cover **~9.5 days of consumption**; expansion to **30 days** is essential to buffer against short-term shocks.
- **Enhance Maritime Security:** Strengthen naval escorts under initiatives like **Operation Sankalp**, which safeguarded **97,000 MT of LPG cargo in 2026**, ensuring uninterrupted energy transit.
- **Reduce Oil Intensity:** Transport sector consumes **~40% of India's oil**; accelerating EV adoption and renewable energy integration can lower import dependence.
- **Secure Mineral Chains:** Develop domestic processing for lithium and cobalt; India must scale up from **<5% processing capacity** to meet future demand.
- **Diversify Imports:** Maintain flexible supplier options - Russia (36%), Iraq (20%), Saudi Arabia (17%), UAE (11%), U.S. (8%) - to counter geopolitical shocks.

Conclusion

India has shown **agility in diversifying suppliers**, but long-term energy security requires **structural resilience**. Expanding reserves, reducing oil intensity, and securing mineral supply chains are essential to safeguard growth.

2. INDIA'S EV TARGETS AND GRID CONNECTIVITY

Why in News?

- With crude oil prices rising due to the **West Asian conflict**, analysts stress that India's **EV transition** must be backed by a **robust grid strategy** to handle the massive electricity demand from transport electrification.

EV Transition and the Grid Imperative

- **Integrated EV Grid Strategy:** A framework that links **transport electrification** with power generation, transmission, and distribution to ensure stability.
- **EVs as Mobile Power Loads:** Electric vehicles are not just battery units but act as **synchronized energy consumers**, requiring careful planning to avoid grid shocks.
- **Clean Mobility Alignment:** India's EV ambitions depend on aligning **vehicle adoption with grid readiness**, ensuring that charging demand is met sustainably.

Recent trends

- **Vehicle Electrification Demand:** Full electrification of **420 million vehicles** would need **900-1,100 TWh/year** extra electricity.
- **2047 Target:** Even 50% fleet conversion = **500 TWh/year**, $\sim \frac{1}{3}$ of current generation.
- **Heavy Goods Vehicles:** Just **6.26 million trucks (2% fleet)** could consume **450-565 TWh/year**.
- **Power Baseline:** Installed capacity = **520.51 GW**; peak demand met = **242.49 GW**; **>50%** from non-fossil sources.

Areas of Focus

- **Cross-Border Freight Corridors:** Electrify highways like the **Golden Quadrilateral** with megawatt charging hubs.
- **Beyond Two-Wheelers:** Two-wheelers = 309 million units but <7% of demand; focus must shift to **commercial fleets**.
- **Peak Load Management:** Prevent evening charging spikes at **7 PM** to avoid brownouts.
- **Clean Baseload Energy:** Use **solar, wind, and modular nuclear reactors** near charging hubs.
- **Circular Battery Economy:** Build recycling networks for end-of-life cells to reduce import dependence.

Government Initiatives

- **PM-E-DRIVE Scheme:** Subsidies for e-buses and trucks.
- **National Electricity Plan:** Expanding grid to **6.48 lakh circuit km by 2032** with **₹9.15 lakh crore** investment.
- **BIS Charging Standards:** Dual plugin standard tested at **Ahmedabad Ranip Depot**.
- **Smart Meters via RDSS:** **4.05 crore meters** installed for real-time monitoring.

Challenges

- **Discom Strain:** State utilities face **₹1.2 lakh crore losses (2025)**, limiting funds for transformer upgrades and delaying depot connections.
- **Coal Trap:** EV demand risks shifting emissions to coal plants, which still supply **44% of India's electricity (2026)**, raising coal imports.
- **Smart Standards Gap:** Most chargers lack dynamic grid communication; retrofitting could cost **₹15,000-20,000 per unit**, burdening operators.
- **Demand Spikes:** Simultaneous evening charging may add **200-250 GW** to peak load, nearly equal to India's current maximum demand.
- **Regional Disparities:** Karnataka leads with **9.4% EV adoption**, while populous states like UP and Bihar remain below **2%**, creating uneven readiness.

Way forward

- **Smart Charging Mandate:** All future EV chargers should be equipped with **bidirectional communication** to balance grid loads.
- **Joint Power-Transport Mapping:** India's **Dedicated Freight Corridors (DFC)** are expected to carry **70% of freight traffic by 2030**, requiring pre-installed charging hubs.
- **Dynamic Tariffs:** Introduce **time-of-use pricing** to encourage charging during surplus solar hours. *Example:* Gujarat's pilot ToU tariff reduced evening peak demand by **12%** in 2025.
- **RDSS-Linked EV Readiness:** Over **₹3.04 lakh crore** has been allocated under RDSS; linking it to EV readiness ensures discoms modernize faster.

Conclusion

India's EV revolution cannot succeed without a **grid-ready strategy**. Vehicle sales alone are insufficient; the real challenge lies in powering freight corridors and commercial fleets with **clean, reliable electricity**.

3. MAKE IN INDIA IN THE DEFENSE SECTOR

Why in News?

- Amid global military supply chain disruptions triggered by the **West Asian conflict**, India's defense analysts have evaluated the **Make in India initiative in the defense sector**, emphasizing its role in achieving **strategic self-reliance (Aatmanirbharta)**.

Indigenisation in defence

- The **Make in India (Defense)** initiative aims to transform India from one of the world's largest arms importers into a **self-reliant defense manufacturing hub**.
- Guided by the **Defence Acquisition Procedure (DAP)**, it seeks to build an indigenous **Military-Industrial Complex (MIC)** by integrating private firms, MSMEs, and startups into global supply chains.
- The policy aligns with the vision of **Aatmanirbhar Bharat**, focusing on innovation, technology transfer, and export competitiveness.

Recent trends

- **Budget Allocation:** Record **₹7.85 lakh crore (\$83 billion)** for FY 2026-27, forming **14.67%** of total central expenditure.
- **Domestic Procurement:** **75%** of the ₹2.19 lakh crore capital outlay earmarked for Indian industries.
- **Exports Surge:** Reached **₹38,424 crore**, a **62.6% YoY growth** and **31-fold rise** over a decade.
- **Industrial Corridors:** UP and Tamil Nadu corridors attracted **₹9,145 crore investments**, linking **16,000 MSMEs**.
- **FDI Reforms:** Cap raised to **74%** under the automatic route, enabling joint ventures and technology transfers.

Opportunities & Potential

- **Drone Warfare Pivot:** Post-Ukraine and West Asia conflicts highlight demand for **low-cost autonomous systems**; India's private sector can lead in **loitering munitions** and AI-driven drones.
- **Startup Capitalization:** Defense-tech funding rose **61× (2016-2025)** to **₹1,653 crore**, fueling indigenous innovation.
- **Export Corridors:** Landmark **₹3,800 crore BrahMos missile deal with Indonesia** showcases India's global credibility.

Challenges

- **Bureaucratic Delays:** Out of 178 projects, **119 overshoot timelines**, some by **up to 500%**.
- **Ambiguous QRs:** Frequent changes in technical specs stall production.
- **Talent Drain:** Rigid pay scales drive scientists from DRDO to private or foreign labs.
- **DPSU Dominance:** State-run units still control **70%** of domestic output, limiting private participation.
- **Component Dependence:** Reliance on foreign chips, sensors, and actuators exposes India to supply shocks.

Way forward

- **Level Playing Field:** Procurement rules must treat **private firms and DPSUs equally**. *Initiative:* The **Strategic Partnership Model (2017)** already allows private firms to co-produce submarines and aircraft with foreign OEMs. Expanding this could unlock **₹20,000 crore+ private investment by 2030**.
- **Fair R&D Compensation:** Align **DRDO scientist pay scales** with global standards to retain talent. *Initiative:* The **DRDO Young Scientist Labs (2020)** were set up to nurture innovation among early-career researchers.
- **Software-Centric Warfare:** Invest more in **AI-driven battle management, cyber defence, and autonomous drones**. *Example:* The **iDEX programme** has supported **676 startups** developing AI surveillance and swarm drone systems.
- **Freeze Qualitative Requirements (QRs):** Lock technical specifications once bidding begins to avoid costly redesigns.
- **Global Testing Hubs:** Establish **open-access labs and firing ranges** in Defence Corridors for startups and MSMEs. *Example:* The **Tamil Nadu Defence Corridor** is building a **₹1,200 crore integrated testing complex (by 2027)** to help firms validate prototypes locally.

Conclusion

India's defense exports and investments signal a **historic shift toward self-reliance**, but true **Aatmanirbharta** demands dismantling bureaucratic barriers and empowering private innovation to build a globally competitive defense ecosystem.

VII. Trade and External sector

1. INDIA-NEW ZEALAND FREE TRADE AGREEMENT (FTA)

Why in News?

- Recently, India and New Zealand concluded a landmark **Free Trade Agreement (FTA)** in a record period, aiming to strengthen economic cooperation and significantly enhance bilateral trade and investment.

Features of the FTA

- Tariff Elimination:** New Zealand agreed to remove tariffs on **100% of imports from India**, while India will reduce/eliminate tariffs on **95% of imports from NZ**, covering sectors like **pharma, textiles, and engineering goods**.
- Investment Commitment:** New Zealand pledged **\$20 billion investment over 15 years**, aligned with *Make in India* and *Digital India*, focusing on **semiconductors, renewable energy, and industrial clusters**.
- Strategic Exclusions:** India safeguarded **dairy products, sugar, honey, onions, chana, and gems & jewellery**, protecting livelihoods of **8 crore dairy farmers** and sensitive agri-sectors.
- Mobility Provisions:** Frameworks to ease movement of **Indian professionals and students**, strengthening India's role as a **knowledge economy hub**.
- SME & Artisan Focus:** Special provisions for **MSMEs, artisans, and women entrepreneurs**, opening new markets in **textiles, pharma, and handicrafts**.

Pre-FTA Trade (2025)

- Exports to NZ:** Rose **32.1%**, reaching **\$711.1 million**, led by **pharma and textiles**.
- Imports from NZ:** Increased **75.2%**, totaling **\$587.1 million**, mainly **wood, fruits, and machinery**.
- Trade Balance:** India maintained a **positive balance of \$124 million**.
- Global Rank:** NZ is India's **53rd largest trading partner**, while India is NZ's **11th largest export destination**.
- Employment Impact:** FTA expected to generate **5 lakh direct jobs** in manufacturing and services.

SECTOR	PRE-FTA TARIFF (PEAK)	POST-FTA TARIFF
 Textiles & Apparel	Up to 10%	0% (ZERO)
 Leather & Footwear	Up to 10%	
 Engineering Goods	Up to 10%	
 Pharmaceuticals	Up to 5%	
 Agriculture & Allied	Up to 5%	
 Marine Products	Up to 5%	
 Plastics & Rubber	Up to 10%	
 Electronics	Up to 10%	
 Chemicals	Up to 5%	

FTA SIGNED ON 27TH APRIL, 2026

Opportunities from the FTA

- **Manufacturing Ecosystems:** \$20 bn investment to build **industrial infrastructure and innovation clusters** in states like Gujarat and Tamil Nadu.
- **Service Exports:** Huge potential for **IT, education, and health services**, with India's IT exports already valued at **\$260 billion (2025)**.
- **Agricultural Productivity:** Collaboration in **agri-tech and food processing** to improve yields and reduce post-harvest losses (currently **20-25% in India**).
- **Start-up Synergy:** Joint innovation in **AI, biotech, and clean energy**, leveraging India's **100,000+ registered start-ups**.
- **Supply Chain Resilience:** Provides a **predictable trade framework**, reducing risks amid **global geopolitical tensions**.

Challenges Ahead

- **Dairy Sensitivity:** NZ's dairy push may resurface in future reviews, risking India's **largest cooperative sector (Amul, Nandini)**.
- **Regulatory Alignment:** Harmonizing **rules of origin and standards** could burden small exporters.
- **MSME Competition:** Imports of **specialized NZ machinery** may pressure local manufacturers.
- **Ratification Process:** NZ Parliament approval pending; domestic politics could delay implementation.
- **Infrastructure Gaps:** India must improve **logistics, ports, and ease of doing business** to absorb investments effectively.

Way Forward

- **Swift Ratification:** Ensure FTA comes into force by **end-2026**.
- **Sectoral Roadmaps:** Industry bodies (FIEO, CII) to guide MSMEs in accessing NZ markets.
- **Focus on Make in India:** Direct NZ investments into **semiconductors, green hydrogen, and EVs**.
- **Skill Harmonization:** Fast-track recognition of **Indian professional qualifications**.
- **Review Mechanisms:** Joint committee to resolve **non-tariff barriers and disputes** quickly.

Conclusion

The **India-New Zealand FTA** is a **blueprint for rapid, high-trust trade negotiations**, balancing **economic ambition with domestic sensitivities**. By securing protecting critical sectors like dairy, India positioned itself as the **primary beneficiary** while strengthening Indo-Pacific cooperation.

VIII. Investment models

1. THE PRIVATE INVESTMENT PARADOX IN INDIA

Why in News?

- Recently, Chief Economic Adviser **V. Anantha Nageswaran** highlighted concerns over the decline in private capital formation, which has fallen to a decadal low in India's **Gross Fixed Capital Formation (GFCF)**.

India's Private Investment Paradox

- India's corporates are **cash-rich but investment-shy**, creating a paradox that threatens **long-term growth and employment generation**.
- Private investment, which was **over 40% of GDP before 2012**, has fallen to **~33% of GDP in 2023-24**, reflecting a sharp decline in corporate confidence.

- To sustain **8% GDP growth**, the government has stepped in with **record capital expenditure**, but this reliance on public spending raises concerns about fiscal sustainability.
- Despite **30% annual profit growth among top 500 firms post-pandemic**, their contribution to **Gross Fixed Capital Formation (GFCF)** remains weak, highlighting the gap between profitability and productive reinvestment.



Government Push Strategy

- Corporate Tax Cuts (2019):** Reduced from **30% to 22%** (15% for new units), among Asia's most competitive.
- Twin Balance Sheet Cleanup:** Insolvency and Bankruptcy Code (IBC) + bank recapitalization reduced NPAs, making banks and firms healthier.
- Ease of Doing Business:** Compliance reduction, **PLI schemes** to boost manufacturing.
- Infrastructure Spending:** Record **₹11.11 lakh crore capex in Union Budget 2025-26**, aimed at crowding-in private investment.

Why Private Sector Hesitant?

- Demand-Side Weakness:**
 - K-shaped recovery** - luxury demand strong, but rural/middle-class consumption sluggish.
 - Inflation in food & fuel erodes disposable income.
- Capacity Utilization:** Average below **75-80% threshold**; industries reluctant to expand when existing plants under-used.
- Behavioural Shift:**
 - Family-run firms more risk-averse; prefer **family offices and financial assets** over factories.
- Global Uncertainty:** Wars, oil volatility, and policy unpredictability (GST/export duties) discourage long-term planning.
- Passive Funds:** Corporates Park profits in **cash or short-term instruments**, not in fixed assets, limiting job creation.

Consequences of Investment Lag

- **Job Creation Stagnation:** Public works create temporary jobs; sustainable employment needs private expansion.
- **Fiscal Burden:** Government cannot indefinitely fund growth through debt.
- **Lost Global Opportunity:** India risks losing “China Plus One” advantage to Vietnam/Thailand if private sector fails to scale.

Way Forward

- **Boost Mass Consumption:** Strengthen rural wages, skill development, and bottom-60% incomes to create demand signals.
- **MSME-Centric Reforms:** Improve credit access and resilience of MSMEs, the real employment engine.
- **Regulatory Stability:** Provide a “pause period” in tax and policy changes to build investor confidence.
- **Encourage Innovation:** Focus on **green energy, semiconductors, EVs**, aligning with new-age business interests.
- **Mobilize Idle Funds:** Incentivize corporates to deploy passive cash into **productive capital expenditure**.

Conclusion

India has laid the groundwork with reforms, tax cuts, and infrastructure spending, but **private sector caution remains a bottleneck**. Bridging the **trust deficit between state and corporates** is essential to convert profits into plants and cash into capital.

B. ENVIRONMENT

I. Biodiversity and conservation

1. HUMAN-ANIMAL CONFLICT ZONES AND SUSTAINABLE SOLUTIONS

Why in News?

- Human-wildlife conflict has intensified in India, highlighting the urgent need for better **habitat management and coexistence strategies**.

What is Human Animal Conflict

- **Human Animal Conflict** Refers to **negative interactions between humans and wild animals**, leading to **loss of human life, livestock, crops**, and retaliatory killings or accidental wildlife deaths.
- **Human Toll:** Around **500 people die annually** due to elephant encounters, especially in states like **Odisha, West Bengal, and Assam**.
- **Wildlife Mortality:** In 2025, India recorded **166 tiger deaths**, the highest since the launch of **Project Tiger (1973)**, often linked to territorial disputes and human encroachment.
- **Economic Impact:** Nearly **5 lakh families** are affected every year by **crop-raiding incidents**, pushing marginal farmers into **debt and livelihood insecurity**.

Cases of Human-Wildlife Conflict

- **Human Toll:** Karnataka reported **53 human deaths** from wildlife encounters in FY 2025-26.
- **Tiger Mortality:** Madhya Pradesh saw **28 tiger deaths** in early 2026, many due to electrocution from illegal live wires in agricultural fields.
- **Elephant Losses:** India loses about **100 elephants annually** to electrocution, train collisions, and poaching.
- **Tiger Attacks:** At least **43 human fatalities from tiger attacks** were recorded in 2025, linked to habitat saturation and prey scarcity.



Reasons for Rising Conflict

- **Habitat Fragmentation:** Highways, mines, and railways cut through forests, disrupting corridors.
- **Agricultural Expansion:** Farms at forest edges attract elephants and leopards.
- **Climate Stress:** Droughts and rising temperatures push animals into villages.
- **Ecological Imbalance:** Invasive species like **Lantana camara** reduce natural forage.
- **Behavioral Shifts:** Fear-based deterrence squads often escalate aggression, leading to accidental deaths.

Government Initiatives

- **Project Tiger & Elephant Division Merger (2023-24):** Streamlined resources for keystone species.
- **AI-Based Monitoring:** Alerts in Coimbatore Forest Division to prevent train-related elephant deaths.
- **Regional Action Plans (RAP):** Landscape-level planning for Southern and North-Eastern regions.
- **Solar Fencing & Trenches:** Physical barriers in conflict zones.
- **Anti-Depredation Squads:** Local teams trained to mitigate conflict and prevent retaliatory killings.

Challenges

- **Slow Compensation Mechanisms:** Lengthy paperwork and delays discourage community tolerance and often push locals toward retaliatory actions.
- **Technology Limitations:** Tools like GPS-collaring and AI alerts are effective but difficult to scale in fragmented landscapes with poor connectivity.
- **Untrained Response Squads:** Lack of formal training turns anti-depredation squads into aggressive mobs, escalating danger for both humans and animals.
- **Habitat Quality Decline:** Invasive weeds and degraded grasslands reduce prey base, forcing animals into croplands.
- **Community Hostility:** Repeated losses without support erode tolerance, leading to illegal traps, electrocution, or poisoning.

Way Forward

- **Corridor Protection:** Legally safeguard and restore wildlife corridors to ensure safe passage for elephants, tigers, and other wide-ranging species.
- **Community-Centric Conservation:** Involve locals as partners by sharing tourism revenues and offering livelihood incentives.
- **Fast Compensation Systems:** Digitise and simplify claims to ensure payouts within a week, reducing hostility.

- **Habitat Restoration:** Remove invasive species like **Lantana camara** and restore grasslands to improve fodder availability.
- **Eco-Friendly Infrastructure:** Mandate eco-bridges, underpasses, and green design in all new highways and railways cutting through forests.

Conclusion

Human-wildlife conflict is an **inevitable outcome of fragmented land use and rising ecological stress**. The focus must shift from elimination to **scientific, socially just, and ecologically sustainable coexistence**, with **community involvement and habitat restoration** as the cornerstones.

II. Environmental pollution

1. NGT'S AIR QUALITY FINANCE REFORM AND CLEAN AIR

Why in News?

- The **Southern Bench of the National Green Tribunal (NGT)** in *Dharmesh Shah v. Union of India & Ors (April 2024)* delivered a landmark judgment linking **public finance to measurable air quality outcomes**.

NGT Judgment

- **Sector-wise Roadmaps:** States must prepare detailed plans for **transport, industry, and waste sectors** within six months, backed by emission inventories and reduction targets.
- **Funding Linked to Outcomes:** Public money will be released only if **air quality actually improves** (e.g., reduction in PM2.5/PM10), ending the old system of symbolic spending.
- **Data-Driven Governance:** Mandates use of **CAAQMS, IoT sensors, SAFAR forecasting** and transparent dashboards to ensure accountability.

Implication of judgement

- **Turning Point in Jurisprudence:** The ruling shifts focus from **individual polluters** to the **administrative machinery**, making governance itself accountable for air quality.
- **Systemic Failure Identified:** It recognizes India's air pollution crisis as a **failure of governance and public finance**, not merely an environmental challenge.
- **Fiscal Accountability:** By linking **funding to measurable outcomes**, the judgment ensures that **public money must deliver cleaner air**, moving away from symbolic compliance.
- **Broader Implication:** The decision embeds **data-driven accountability** into environmental governance, marking a **new phase in India's fight against pollution**.

NGT's Air Quality Finance Reform

- **Sector-Wise Roadmaps:** States must prepare **roadmaps for transport, industry, and waste sectors within six months**, backed by **emission inventories and source apportionment studies**.
- **Funding Linked to Outcomes:** Grants will be tied to **actual reduction in PM2.5 and PM10 levels**. Example: Karnataka received **₹618 crore (2024)** but used only **37%**, mostly on road dust - such symbolic spending will no longer qualify.
- **Data-Driven Accountability:** States must integrate **CAAQMS, IoT sensors, and SAFAR forecasting systems** to generate **real-time, transparent data**. Year-on-year targets will ensure measurable progress.
- **Airshed Governance:** Pollution crosses boundaries; NGT directs creation of **regional airshed councils** (Southern states + Puducherry) similar to **NCR's GRAP**, to manage industrial corridors and freight emissions collectively.

NCAP and Southern States

- The **National Clean Air Programme (NCAP)** launched in 2019 aimed to reduce PM_{2.5} and PM₁₀ levels by 20-30% by 2024.
- Despite administrative compliance, **southern urban centres like Bengaluru, Chennai, and Hyderabad** continue to record PM_{2.5} levels above **60 µg/m³**, exceeding safe limits.
- The NGT observed that committees and portals exist, but **actual air quality improvement is missing**.



Fiscal Dimension - Outlays vs Outcomes

- The Tribunal criticized the focus on **money spent rather than results achieved**.
- Example: **Karnataka** received ₹618 crore for air quality management but utilized only **37%** by late 2024.
- Over **86% of funds** went to road dust management, ignoring major sources like **industrial emissions and diesel combustion**.

Scientific and Governance Dimensions

- Data Vacuum:** Lack of emission inventories, source apportionment studies, and measurable targets.
- Airshed Management:** Pollution transcends city boundaries; NGT advocates regional coordination similar to NCR's GRAP model.
- Institutional Accountability:** States must link funds to outcomes and establish permanent coordination mechanisms.

Comparative Models

Model	Key Feature	Core Philosophy
Surat, Gujarat	Emission Trading Pilot	Economic incentives for cleaner industries
Maharashtra	Star-Rating Program	Public transparency and accountability
China	Mortality Reduction Targets	Linking air quality to health outcomes
London	Ultra Low Emission Zone	Traffic restrictions justified by health data

Challenges

- **Technical Capacity:** Cities lack expertise in **air modeling**; dependence on manual systems instead of **CAAQMS, IoT sensors, SAFAR, ENVIS**.
- **Political Resistance:** Pushback against **BS-VI norms**, phasing out diesel fleets, and regulating industries under **CEPI index**.
- **Federal Coordination:** Multi-state cooperation weak; NCR's **GRAP model** shows disputes hinder regional action.

Way Forward

- **Public Health Integration:** Declare air pollution a **health emergency** under **NHM**; link with **NDSP & ICMR** for disease tracking.
- **Performance-Linked Grants:** Adopt **SBM-Urban style** funding; introduce **Clean Air Index (CAI)** for fiscal incentives.
- **Transparent Data:** Expand **NAMP**, publish via **OpenAQ & CPCB dashboards**; use **AI analytics** for accountability.
- **Regional Airshed Bodies:** Create **Southern Airshed Councils** under **NCAP 2.0** for coordinated industrial and transport emission control.

Conclusion

The NGT's ruling redefines India's environmental governance by embedding **fiscal accountability into air quality management**. It ensures that **public funds must now buy cleaner air, not just compliance reports**.

2. A DECENTRALISED SOLUTION FOR WASTE CRISIS

Why in News?

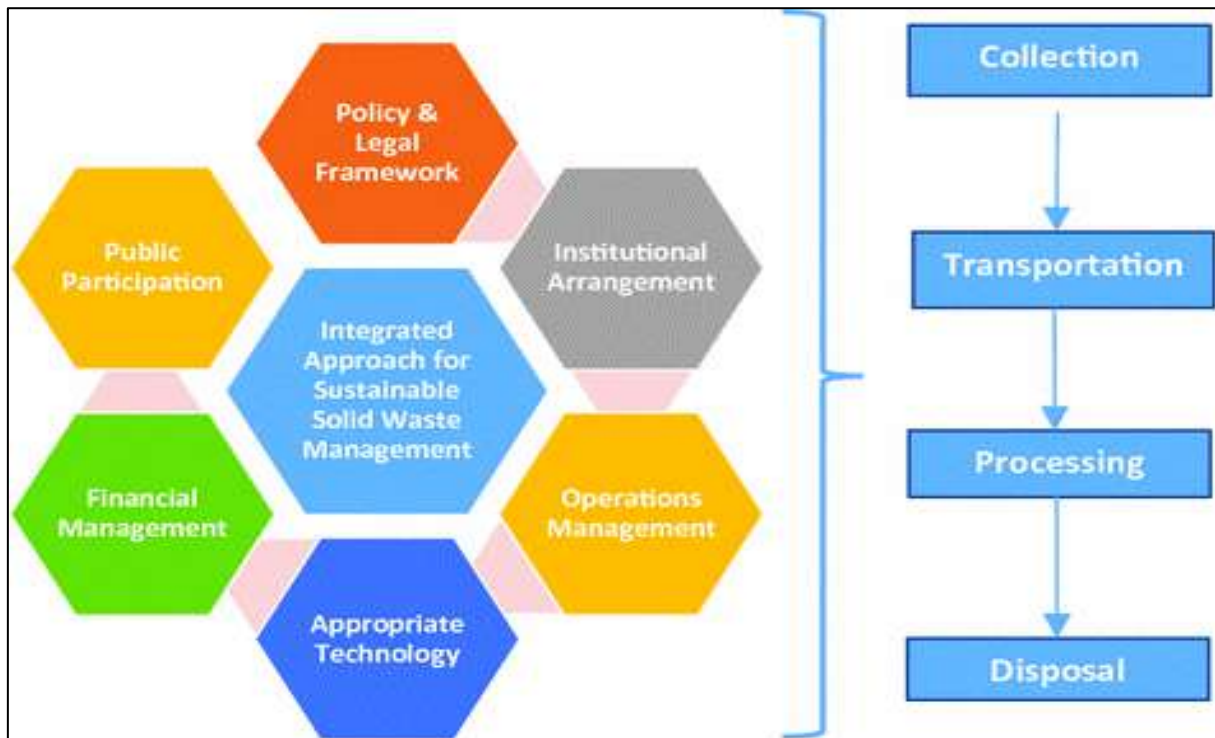
- The **Solid Waste Management Rules, 2026**, notified on **April 1, 2026**, are being criticized for their **centralized and technocratic design**.

India's Waste Crisis

- **Scale of the Problem:** India generates nearly **160,000 tonnes of municipal solid waste daily (2025)**, of which only **~30% is scientifically processed**; the rest ends up in landfills or open dumps.
- **Urbanization Pressure:** Rapid urban growth has created **landfill mountains** in Delhi, Mumbai, and Bengaluru, turning them into methane hotspots and fire hazards.
- **Plastic Burden:** India produces **3.5 million tonnes of plastic waste annually**, with recycling rates below **30%**, leading to clogged drains and urban flooding.
- **Governance Debate:** The **Solid Waste Management Rules, 2026** sparked criticism for being **over-centralized**, raising questions on whether waste management should be **centrally controlled or decentralized to ULBs and Gram Panchayats**.

Nature of Decentralised Waste Management

- **Subsidiarity Principle:** Authority shifts to **Urban Local Bodies (ULBs) and Gram Panchayats**, closest to the problem.
- **Local Knowledge:** Utilizes household behaviour, informal waste worker networks, and indigenous composting practices.
- **Operational Autonomy:** Empowers local institutions to design context-specific solutions instead of one-size-fits-all mandates.



Condition of Waste Crisis

- **Fiscal Leakage:** 40-50% of municipal budgets spent on **secondary transport**, not processing.
- **Landfill Hazards:** Fires in **Delhi (2024)** and **Kochi (2024)** show methane build-up risks.
- **Urban Flooding:** Plastic-clogged drains worsened **Bengaluru floods (2025)**.
- **Coverage Gap:** Rural areas lack basic collection for **pesticide containers and sanitary waste**.
- **Legacy Dumpsites:** **Ghazipur landfill, Delhi**, continues to pollute despite remediation attempts.

Problems with Centralisation in Waste Governance

- **Uniform Models:** One-size-fits-all designs like **MRF-linked systems** ignore local terrain realities (e.g., Himalayan towns vs metros).
- **Trust Deficit:** The **CPCB portal** reduces states to mere **data suppliers**, limiting autonomy.
- **Blurred Accountability:** Centre frames rules, local bodies execute - failures lead to **blame-shifting**.
- **Fiscal Burden:** Gram Panchayats mandated to buy **costly vehicles** without assured finance, creating stress.
- **Innovation Curbed:** States cannot pilot **SHG-led composting models** if they conflict with rigid central blueprints.

Way Ahead

- **Adopt Subsidiarity:** Waste management at **Ward and Gram Sabha level**.
- **State Policy Labs:** States to pilot **indigenous composting and recycling models** for 5 years.
- **Phased Rollout:** Strict compliance in **megacities (>1 crore population)**; flexible rules for rural hamlets.
- **Formula-Based Finance:** Statutory transfers to back new obligations.
- **Shared Data Platforms:** CPCB portal redesigned as a **federal platform**, customizable by local bodies.

Conclusion

India's waste governance must shift from **centralised, technocratic control to localised, democratic solutions**. Empowering **ULBs and Gram Panchayats** will ensure cleaner streets and resilient cities.

3. ROAD DUST AND THE HIDDEN POLLUTION THREAT

Why in News?

- Recent studies by **CSIR-NEERI** and **CRRI**, along with reports from the **Commission for Air Quality Management (CAQM)**, have identified **road dust as the single largest contributor to Delhi's air pollution**.

Road Dust and pollution

- Definition:** Road dust is a **continuous line-source pollutant** spread along busy roads, made up of **soil particles, tyre wear, brake lining residue, and construction debris**.
- Difference from Construction Dust:** Unlike construction dust (a **point-source pollutant** confined to specific sites), road dust is **persistent, widespread, and constantly resuspended** by vehicle movement.
- Major Contributor to Air Pollution:** In Delhi, road dust accounts for **over 50% of PM₁₀** and **~30% of PM_{2.5}** during dry seasons, making it the **largest single source of particulate pollution**.
- Health Impact:** Fine dust particles carry **heavy metals and toxins**, leading to **respiratory diseases, COPD, and cardiovascular risks**. Studies link road dust exposure to **10,000+ premature deaths annually** in urban India.

Indian Scenario:

- Major Source:** Road dust contributes **over 50% of PM₁₀** and **~30% of PM_{2.5}** in Delhi during dry seasons.
- Pollution Spikes:** PM₁₀ levels near major roads recorded at **1,700 µg/m³**, far above the safe limit of **100 µg/m³**.
- High Silt Load:** Average silt load on Delhi roads is **14.47 g/m²**, much higher than cleaner Indian cities.
- Health Impact:** Linked to **10,000+ premature deaths annually** in urban India due to respiratory and cardiovascular diseases.

Causes of Road Dust Pollution

- Unpaved Shoulders:** Loose soil from unpaved road shoulders and medians gets resuspended by vehicles.
- Poor Median Design:** Soil spills from medians due to faulty irrigation practices.
- Potholes & Road Damage:** Broken Road edges grind into fine dust particles.
- Loss of Natural Barriers:** Mining and degradation of the Aravalli range allow **desert dust storms** from Rajasthan to sweep into Delhi.

Implications of Road Dust Pollution

- Child Respiratory Damage:** Causes chronic wheezing and asthma in children near traffic corridors.
- Heavy Metal Exposure:** Dust carries **lead, cadmium, nickel**, entering bloodstream and raising cancer risks.
- COPD Aggravation:** Sharp mineral dust particles inflame lungs, worsening COPD cases.
- Smog & Visibility Loss:** Dust traps other emissions, creating **dense smog blankets** that disrupt flights and traffic.

Challenges in Dust Control

- Temporary Sprinklers:** Provide short-term relief, often ineffective.
- Mechanical Sweepers:** Improper sweeping lifts fine particles back into the air.
- Encroachments:** Illegal parking blocks cleaning operations.
- Geographic Disadvantage:** Dry climate and dust storms worsen the problem.

Way Ahead

- Vegetative Barriers:** Plant drought-resistant shrubs and trees along roads to trap dust.
- Kerb Redesign:** Build retaining kerbs with soil barriers to prevent spillage.
- Drip Irrigation:** Replace water hoses with **sub-surface drip systems** using treated wastewater.
- GPS-Tracked Sweepers:** Monitor cleaning routes in real-time for scientific dust removal.

- **Integrated Policy:** Combine urban design, ecological restoration, and strict enforcement to reduce dust loads.

Conclusion

Delhi's air crisis cannot be solved by targeting **vehicle emissions alone**. Tackling **road dust pollution** through structural reforms, ecological restoration, and scientific cleaning is essential for sustainable air quality.

III. Land Degradation

1. SAND AND SUSTAINABILITY

Why in News?

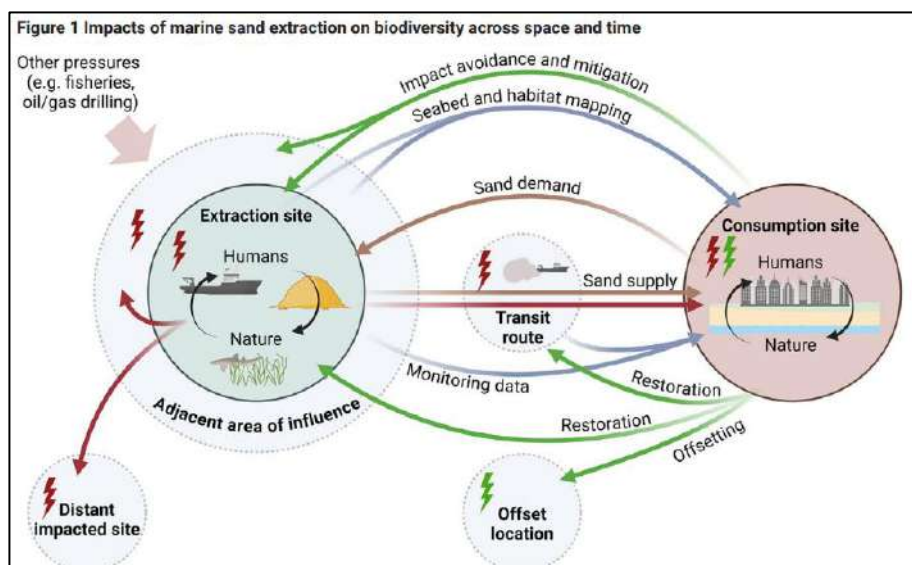
- The **United Nations Environment Programme (UNEP)** released its 2026 report *Sand and Sustainability: An Essential Resource for Nature and Development*, warning that **global sand consumption has reached unsustainable levels**.

Sand as a Strategic Resource

- Sand is the **second most consumed natural resource after water**, indispensable for **construction, land reclamation, glass, and silicon industries**.
- The **UNEP 2026 report** emphasizes that sand must be treated as a **strategic resource**, not an unlimited commodity, given its ecological and economic importance.
- Beyond construction, sand plays a crucial role in **coastal protection, aquifer recharge, and biodiversity support**, making its depletion a direct threat to **climate resilience and livelihoods**.
- Globally, sand demand is projected to rise by **45% by 2030**, driven by **urbanization, infrastructure expansion, and renewable energy industries**.

Recent trends

- **Global Demand:** Consumption rose from **9.6 billion tonnes (1970)** to **50 billion tonnes annually (2020)**, with demand projected to rise further by 2030.
- **Urban Expansion:** Built-up area per person grew from **43 sq. m (1975)** to **63 sq. m (2025)**.
- **Economic Value:** Global sand market valued at **USD 569.4 billion (2024)**.
- **Livelihoods:** **2.3 billion people** depend on sandy ecosystems through small-scale fisheries.



Reasons for Rising Sand Mining

- **Rapid Urbanization:** Over **45% of the world's population** lives in cities, driving demand for concrete and glass.
- **Infrastructure Projects:** India's **PM Awas Yojana** and highway expansions increase riverbed extraction.
- **Population Growth:** Global population of **8.2 billion (2025)** requires more housing and infrastructure.
- **Climate Adaptation:** Sand used for sea walls and island raising (e.g., Maldives dredged **24.5 million m³** for Gulhifalhu project).
- **Technological Demand:** High-purity sand essential for semiconductors and solar panels.

Ecological Impacts

- **Riverine Degradation:** Lowers riverbeds, destabilizing banks and infrastructure.
- **Groundwater Depletion:** Sand removal drops water tables, drying wells.
- **Biodiversity Loss:** Dredging destroys benthic habitats, harming fish and coral reefs.
- **Saline Intrusion:** Coastal mining allows seawater into aquifers.
- **Health Hazards:** Silica dust causes **silicosis**, while stagnant pits breed **malaria**.

Initiatives Taken

- **Global:** UNEP's **10-Point Action Plan** and **Marine Sand Watch** for monitoring dredging vessels.
- **India:**
 - **Sustainable Sand Mining Guidelines (2016)** - District Survey Reports for replenishment checks.
 - **Enforcement Guidelines (2020)** - Remote sensing and QR-coded transit passes.
 - **NGT Bans** - Judicial interventions against illegal mining.

Way Ahead

- **Strategic Resource Recognition:** Treat sand as a finite strategic resource.
- **Promote M-Sand:** Encourage crushed rock and recycled waste as substitutes.
- **Strengthen Governance:** Mandatory cumulative impact assessments for dredging projects.
- **No-Go Zones:** Ban extraction in MPAs and critical rivers.
- **Transboundary Cooperation:** Develop global protocols for shared river basins.

Conclusion

Sand is the **hidden foundation of modern development**, but unsustainable extraction risks collapsing ecosystems and livelihoods. A **shift to circular economy practices and M-Sand adoption** is essential to balance growth with ecological survival.

IV. Renewable Energy

1. INDIA'S ETHANOL BLENDING PROGRAMME AND PATH TO E100

Why in News?

- Recently the **Union Minister for Road Transport and Highways** advocated moving towards **100% ethanol blending (E100)** to achieve **energy self-reliance, reduce crude oil import dependence, and global oil shocks**.

Ethanol blending

- Ethanol is a **biofuel produced from sugarcane molasses, maize, surplus rice, and damaged foodgrains**, classified into **1G, 2G, 3G, and 4G** based on feedstock and technology.

- India's **Ethanol Blended Petrol (EBP) Programme**, under the **National Biofuel Policy 2018**, aims to reduce crude oil imports, cut emissions, and enhance farmer incomes.
- India achieved its **20% blending target (E20) in 2025**, five years ahead of schedule, with production capacity rising from **2 billion litres (2014) to nearly 20 billion litres (2026)**.

Features of the EBP Programme

- **Blending Targets:** E10 widely adopted; E20 mandatory nationwide since April 2026; E100 requires flex-fuel vehicles.
- **Infrastructure & Pricing Reforms:** Ethanol Interest Subvention Schemes, Long-Term Offtake Agreements with OMCs, GST reduction from 18% to 5%, and interstate movement facilitation.
- **Economic Impact:** Forex savings of **₹1.4 lakh crore since 2014**; farmers earned **₹1.18 lakh crore** and distilleries **₹1.96 lakh crore** till 2025.
- **Climate Action:** E20 blending reduced **832 lakh metric tonnes of CO₂ emissions**, advancing India's **Net-Zero 2070 goal**.
- **Waste-to-Wealth:** Grain-based ethanol yields DDGS, a premium cattle feed, reducing fodder shortages.



Why India Must Accelerate Towards E100

- **Energy Security:** India imports **89% of crude oil and 60% of LPG**; past crises (2008 oil surge to \$147.5/barrel, 2022 Russia-Ukraine war peak at \$139.13/barrel) highlight vulnerability.
- **Pragmatic Transition Fuel:** Ethanol is a “drop-in” fuel compatible with existing ICE vehicles, enabling immediate decarbonisation.
- **Stubble Burning Solution:** Scaling 2G and 3G ethanol production can reduce **crop residue burning in Punjab and Haryana**, addressing winter pollution.
- **Decentralised Energy Infrastructure:** Ethanol distilleries located in hinterlands reduce dependence on coastal refineries.

- **Circular Economy:** India generates **78.2 million tonnes of food waste annually**; damaged grains and residues can be converted into ethanol.

Challenges Beyond E20

- **Vehicle Compatibility:** Pure ethanol delivers **45-55% less energy per litre**, reducing mileage; FFVs are not yet widespread.
- **Taxation Issues:** Ethanol under GST (5%) but petrol outside GST, removing consumer incentive for higher blends.
- **Food vs Fuel Debate:** Diverting maize and rice stocks risks food inflation during erratic monsoons.
- **Water Footprint:** Producing 1 litre of ethanol from sugarcane requires **2,800-3,000 litres of water**, stressing groundwater in states like Maharashtra.
- **Infrastructure Bottlenecks:** Fuel stations need specialised dispensing units and tanks for E30/E100.

Way Forward

- **Replicate Brazil Model:** Incentivise automakers to produce **flex-fuel vehicles (FFVs)**; Brazil achieved **51.8% of light-duty fleet powered by ethanol**.
- **Link with CAFE III Norms (2027):** Push automakers to adopt flex-fuel technology under *Make in India*.
- **Rationalise Taxation:** Bring ethanol blends under a **uniform lower GST slab** to pass benefits to consumers.
- **Promote 2G & 3G Ethanol:** Scale production from **agri-residue and algae** to avoid food security risks.
- **Diversified Energy Basket:** Combine ethanol with **EVs and green hydrogen** for balanced energy transition.

INDIA'S E20 ACHIEVEMENT (2026)

- **Nationwide rollout:** Effective **1 April 2026**, E20 petrol became the **default grade** at all retail outlets under a notification from the Ministry of Petroleum and Natural Gas.
- **Fuel specification:** Minimum **95 RON** standard improves combustion stability and reduces engine knocking.
- **Production capacity:** India produced **≈ 1,800 crore litres** of ethanol in 2025-26 against a requirement of **≈ 1,200 crore litres** - a surplus that strengthens energy security.
- **Economic impact:** Over **₹ 1.44 lakh crore** saved in foreign-exchange since 2014; farmers' income rose by **≈ \$ 4.6 billion** in 2025 alone.
- **Vehicle compatibility:** All vehicles manufactured after April 2023 are E20-ready; older models may experience **3-7 % lower mileage**.

Conclusion

India's push towards **E100 ethanol blending** reflects a strong intent to achieve **energy independence and cleaner mobility**. Success depends on **scaling 2G/3G ethanol, incentivising flex-fuel vehicles, rationalising taxation, and building infrastructure**. A balanced approach will ensure sustainability while reducing oil dependence.

2. DECENTRALIZED BIOENERGY SYSTEMS

Why in News?

- India's **Ministry of New and Renewable Energy (MNRE)** has prioritized **decentralized bioenergy systems** in 2026 to counter global energy corridor disruptions and reduce dependence on imported fossil fuels.

What is bioenergy

- **Bioenergy:** Renewable energy derived from **biomass** such as crop residues, municipal waste, animal manure, and sewage sludge.

- Conversion pathways include **gasification (dry waste)** and **anaerobic digestion (wet waste)**, producing **syngas, biochar, biogas, and compressed biogas (CBG)**.
- Decentralized systems emphasize **local energy hubs**, reducing transport costs and integrating waste management with energy production.

Types of Conversion Systems

- **Gasification:**
 - Feedstock: Dry residues like paddy straw, husks, woody biomass.
 - Process: Thermochemical breakdown at **800-1,000°C** with limited oxygen.
 - Output: **Syngas** (CO + H₂) and **Biochar** (soil fertility + carbon sequestration).
- **Anaerobic Digestion:**
 - Feedstock: Wet waste streams like kitchen waste, dairy manure, sewage sludge.
 - Process: Microbial breakdown in oxygen-free biodigesters.
 - Output: **Biogas (methane + CO₂)**, upgraded to **90%+ pure CBG**, plus nutrient-rich digestate fertilizer.

Significance

- **Energy Security:** Local hubs insulate MSMEs from volatile oil imports.
- **Pollution Reduction:** Provides market for crop residue, reducing stubble burning and NCR smog.
- **Circular Economy:** Digestate returns nutrients to soil, cutting dependence on chemical fertilizers.
- **Urban Waste Management:** Biodigesters reduce landfill methane emissions and groundwater contamination.
- **Carbon Credits:** Biochar and green methane enable monetization via global carbon markets.

Challenges

- **Seasonal Feedstock Fluctuations:** Biomass supply is cyclical; during monsoons, dry crop residue availability drops by **30-40%**, leading to shutdowns of small gasifiers.
- **Input Variability:** High silica content in paddy straw increases tar formation, raising maintenance costs by **20% annually** for rural plants.
- **Segregation Bottleneck:** Only **30% of urban households** practice proper waste segregation, reducing biodigester efficiency and methane yield.
- **Logistics Costs:** Transporting loose biomass beyond **25 km** raises costs by **₹2-3 per kg**, making biogas less competitive than fossil fuels.
- **Capital Constraints:** Despite MNRE's **₹858 crore National Bioenergy Programme (Phase I, 2022-25)**, banks remain hesitant; startups face borrowing rates of **12-14%**, limiting expansion.

Way forward

- **Source Segregation:** Municipal penalties and smart bins can raise segregation compliance to **70% by 2030**, ensuring cleaner feedstock.
- **Biomass Storage Banks:** MNRE plans decentralized silos; India targets **5% biomass pellet co-firing in thermal plants by 2026**, requiring large-scale storage.
- **Off-Take Agreements:** India has announced a **5% mandatory CBG blending obligation by 2028-29**, ensuring fixed demand for local producers.
- **Credit Guarantees:** NABARD-backed funds can reduce borrowing rates to **6-7%**, de-risking rural entrepreneurs.
- **Green Hydrogen Upgrade:** India's bioenergy roadmap includes refining syngas into hydrogen; pilot projects aim to contribute to the **2% biojet blending target by 2028**.

Conclusion

India's true energy reserve lies in its agricultural and municipal waste streams, not imported fossil fuels. Unlocking decentralized bioenergy systems will strengthen energy security, reduce pollution, and integrate circular economy practices.

V. Global Warming and Climate Change

1. SHAPING INDIA'S CLIMATE TRAJECTORY

Why in News?

- Recently India faced increasing climate-induced disasters, highlighting the urgent need for a robust Climate Physical Risk (CPR) framework.

Climate change as reality

- Climate Change as Lived Experience:** India is already facing recurring floods, heatwaves, and droughts, directly affecting millions of people across states.
- Economic Risks:** As per the World Bank (2024), unchecked climate risks could reduce India's GDP by 2.8% annually by 2030, undermining growth and development.
- Preparedness Challenges:** India's climate readiness remains limited, with fragmented risk assessment systems and reactive disaster management policies that fail to address long-term resilience.
- Global Context:** India is among the top five most climate-vulnerable nations, making adaptation and mitigation strategies crucial for sustainable development.

Climate Physical Risks (CPRs)

- CPRs are long-term physical consequences of climate change, including extreme weather events (floods, cyclones, droughts, heatwaves) and slow-onset changes (sea-level rise, glacier melt, desertification).
- Dual Nature:**
 - Acute risks* - sudden events like flash floods or cyclones.
 - Chronic risks* - gradual shifts like rainfall variability or prolonged droughts.
- India:** CPRs manifest as coastal erosion in Kerala, glacier retreat in the Himalayas, and desertification in Rajasthan, affecting diverse geographies.

Impact Across Multiple Fronts

- Economic Stability:** Climate shocks disrupt agriculture and industry; World Bank projects GDP loss of 2.8% annually by 2030 if risks remain unmanaged.
- Public Health:** Heatwaves and erratic rainfall increase vector-borne diseases (malaria, dengue) and heat-related deaths; *Lancet Countdown (2025)* warns of rising vulnerability.
- National Security:** Climate-induced migration, water scarcity, and resource conflicts threaten internal stability and border security, especially in Himalayan and coastal regions.

IPCC Risk Framework

- Hazard:** Climate events like floods or droughts.
- Exposure:** Populations and assets located in risk zones (India has 450 million people in flood-prone districts).
- Vulnerability:** Ability to cope and recover; urban centres with strong infrastructure fare better than rural districts.

India's Gaps in Risk Assessment

- **Fragmented Systems:** IMD, IITs, and NIDM produce separate risk maps, leading to **data silos and duplication**.
- **No Unified CPR Tool:** Unlike the U.S. or U.K., India lacks a **nationwide integrated climate risk model**.
- **Global Model Limitations:** RCPs and SSPs fail to capture **India's microclimates**, limiting hyper-local predictions.

Steps Taken So Far

- **National Adaptation Plan (NAP):** India submitted its first **Adaptation Communication (2023)**; full NAP under preparation covering **nine sectors**.
- **Regulatory Measures:** RBI integrating **climate risk into financial regulation**.
- **Institutional Efforts:** IIT Gandhinagar's **flood hazard maps**, IMD's **vulnerability atlases**, and NIDM's **state-level disaster planning**.
- **Adaptation vs. Mitigation:** UNEP notes every **\$1 in adaptation yields \$4 in avoided losses**, yet most global finance prioritises mitigation.

Way Forward

- **National CPR Assessment Tool:** Integrate scientific modelling with **local knowledge** for real-time projections.
- **Central Climate Risk Data Hub:** Consolidate IMD, IIT, NIDM data into an **open-access platform**.
- **Strengthen Institutional Capacity:** Establish a **National Centre for Climate Risk Assessment** under MoEFCC.
- **Private Sector Role:** Mandate **CPR disclosures in corporate risk reports**; encourage insurers to use CPR data.
- **Community-Based Adaptation:** Empower **Panchayats and ULBs with climate grants** and participatory risk mapping.

Conclusion

India's journey toward **Viksit Bharat 2047** cannot ignore climate physical risks. By building a **robust CPR framework**, India can shift from **reactive relief to proactive resilience**, ensuring prosperity, sustainability, and equity for future generations.

2. ECOCIDE, WAR AND ENVIRONMENT

Why in News?

- Recently **Lebanon and Iran accused Israel of committing ecocide during military operations**, highlighting the **ecological devastation of modern warfare** and demanding to recognize **ecocide as an international crime**.

Ecocide in Global Context

- **Ecocide** refers to **extreme environmental destruction knowingly caused by human actions**, leading to **long-term, widespread, and severe ecological damage**.
- The term was first coined in **1970** by **Prof. Arthur Galston** during the Vietnam War to describe the devastation caused by **Agent Orange herbicides**.
- Countries such as **Russia, Ukraine, Belgium, Chile, and France** have already incorporated ecocide or equivalent provisions into their **domestic legal systems**, recognizing the environment as a victim in its own right.
- In **1990**, **Vietnam** became the first nation to codify ecocide in domestic law, influenced by its wartime experiences.
- In **2021**, **Stop Ecocide International's expert panel** proposed a standardized definition to aid its inclusion in the **Rome Statute of the International Criminal Court (ICC)**.
- The **International Union for Conservation of Nature (IUCN)** formally recognized ecocide as a crime in **2025**, though without enforcement powers.



How Ecocide Differs from Current International Law

- **Eco-centric Approach:** Recognizes the **environment itself as a victim**, unlike anthropocentric war crime laws.
- **Beyond Collateral Damage:** Criminalizes **wanton acts** with substantial likelihood of severe harm.
- **Peacetime Application:** Extends beyond war crimes to **industrial pollution and ecological destruction**.
- **Criminal Liability:** Moves from civil tort principles to **criminal accountability**.

Challenges in Enforcement

- **Rome Statute Limitation:** Environmental harm recognized only if **disproportionate during war**.
- **Jurisdictional Hurdles:** ICC jurisdiction limited to **member states or UNSC referrals**.
- **High Evidentiary Thresholds:** Proving **intent and scale of damage** is difficult.
- **Political Resistance:** Major powers resist laws that could **criminalize military or industrial actions**.
- **Infrastructure Gaps:** No precedent of **direct international prosecution for ecocide**.

Way Forward

- **Council of Europe Model:** Replicate the **2025 European Convention on Environmental Protection** globally.
- **Domestic Codification:** Encourage more nations to adopt **national ecocide laws** (Belgium, Chile examples).
- **Rome Statute Amendment:** Push for ecocide as the **fifth international crime** alongside genocide and war crimes.
- **Clear Definitions:** Standardize criteria for **long-term and severe damage**.
- **Non-Anthropocentric Jurisprudence:** Support ICJ in recognizing **environmental rights independent of human harm**.
- **Global Schemes:** Link ecocide recognition with **UNEP Adaptation Finance and Green Climate Fund (GCF)** to strengthen enforcement.

Conclusion

The recognition of **ecocide as an international crime** is a crucial step toward **holding states and actors accountable for ecological destruction during war and peace**. While enforcement faces political and legal hurdles, growing domestic legislation and global advocacy provide momentum for change.

VI. Global and Indian Initiatives, efforts and Commitments

1. TURNING CARBON BORDER TAXES INTO A STRATEGIC OPPORTUNITY

Why in News?

- The **European Union's Carbon Border Adjustment Mechanism (CBAM)** came into full effect on **January 1, 2026**, impacting India's exports of **steel, aluminum, cement, fertilizers, electricity, and hydrogen**.

Carbon Border Adjustment Mechanism (CBAM)

- CBAM** is an EU policy that imposes a **carbon price on imports** to prevent "carbon leakage," ensuring imported goods face the same carbon cost as EU-made products.
- It aligns with the **EU Emissions Trading System (ETS)**, where carbon prices averaged **€100 per tonne in 2026**, making compliance crucial for exporters.
- The six targeted sectors together account for **over 50% of India's industrial emissions**, making CBAM a major trade and climate challenge.

Features of CBAM

- Phased Implementation** - Gradual rollout from **2026 to 2034**, replacing free allowances for EU producers.
- Article 9 Deduction** - Importers can reduce CBAM liability if a **carbon price was paid in the origin country**.
- MRV Standards** - Requires **measurable, reportable, and verifiable emission data** with third-party audits.
- Certificate System** - Importers buy **CBAM certificates** linked to weekly ETS auction prices.
- Revenue Impact** - EU expects **₹500 crore annually** from Indian steel exports alone if India lacks a domestic carbon tax.

Opportunities for India

- Retention of Fiscal Revenue:** An **IBAM** would allow India to **collect carbon taxes domestically**, preventing loss of revenue to the EU.
- Financing Green Technology:** IBAM funds can support **green hydrogen-based steelmaking and low-carbon manufacturing**.
- Strengthening CCTS:** CBAM accelerates India's **Carbon Credit Trading Scheme (CCTS)**, enabling exporters to offset EU charges using domestic credits.
- Diplomatic Leverage:** Under the **India-EU FTA Annex 14-A**, India can negotiate **mutual recognition of carbon pricing**.
- Competitive Advantage:** Low-carbon producers using **renewable energy** can gain market share as CBAM penalizes high-emission competitors.

Challenges Ahead

- Subsidy Gap:** EU industries receive **€2 billion+ green transition aid**, while Indian firms lack comparable support.
- Compliance Burden:** MSMEs face high **carbon audit costs**, risking export exclusion.
- Data Sensitivity:** Sharing detailed emission data with foreign auditors may expose **industrial vulnerabilities**.

- **Technological Dependence:** Adopting **EU-mandated carbon accounting tools** could undermine India's **data sovereignty**.
- **Export Competitiveness:** Without IBAM, Indian exports could become **10-20% costlier** in EU markets.

Way Forward

- **Implement IBAM** - Capture carbon revenue at export points and reinvest in green industries.
- **Transparent Fund Usage** - Create audited green transition funds for **scrap-based steel and renewable electricity**.
- **Mutual Recognition Agreements** - Ensure EU accepts **Indian CCTS certificates** under Article 9.
- **MSME Support** - Provide **digital carbon calculators and subsidized audits**.
- **Global Advocacy** - Lead developing-nation coalition demanding **carbon revenue repatriation** for a **Just Transition**.

Conclusion

A proactive **IBAM**, backed by strong diplomacy and domestic reforms, can turn carbon border taxes into a **tool for sustainable industrial growth and climate leadership**.

2. GLOBAL ELECTRIFICATION DRIVE AND COP31

Why in News?

- At the **Copenhagen Climate Ministers' Meeting**, Türkiye's Environment Minister and COP31 President- emphasized **economy-wide electrification** as the central priority for COP31 to accelerate the global shift away from fossil fuels.

Electrification as Core Agenda

- **COP31 Venue:** The **31st UN Climate Conference (COP31)** will be hosted in **Antalya, Türkiye**, bringing together 193 nations to decide future climate pathways.
- **Electrification as Central Pillar:** Global leaders are positioning **economy-wide electrification** as the **main pillar of climate action**, shifting focus from abstract emission pledges to **system-wide energy transformation**.
- **Global Energy Share Data:** Currently, electricity accounts for **20% of final energy consumption worldwide (2025)**. The **IRENA roadmap** calls for scaling this to **35% by 2035** and **50% by 2050** to keep the **1.5°C climate target viable**.
- **Sectoral Decarbonization:** Electrification will directly target **hard-to-abate sectors** like transport (via EVs) and buildings (via heat pumps), replacing fossil fuel use at the consumption level.
- **Troika Continuity:** Under the **Troika model** (Brazil, Azerbaijan, Türkiye), electrification is being advanced as a **long-term, stable policy framework** across successive COP presidencies.

Importance of Electrification

- **Shield Against Fossil Fuel Volatility:** Reduces dependence on unstable oil and gas markets; global crises (e.g., U.S.-Israel-Iran tensions) highlight vulnerability.
- **35 by 35 Target:** IRENA roadmap requires electricity share in final energy use to rise from **20% (2025)** to **35% by 2035** to keep **1.5°C goal viable**.
- **Decarbonizing Hard Sectors:** Focus on transport (EVs) and buildings (heat pumps) to cut direct fossil fuel use.
- **Troika Stability:** Joint presidencies of **Brazil, Azerbaijan, and Türkiye** ensure continuity in electrification policy.
- **Energy Justice:** Expanding grids enables clean cooking and modern energy access for vulnerable populations.

Challenges

- **Funding Deficit:** Global grid investment must double from **\$0.5 trillion (2025)** to **\$1 trillion annually till 2035**.
- **Consensus Gap:** Binding UN commitment across **193 nations** faces friction; risk of voluntary coalitions.
- **Grid Flexibility:** Large renewable integration needs **battery storage and demand management** to avoid failures.
- **Climate Finance Diversion:** Developed nations cutting contributions; UK halved its **Green Climate Fund** pledge in 2025.
- **Socio-Economic Inequities:** Developing nations lack resources for EV charging or building electrification without aid.

Global Initiatives

- **Australia-EU Alliance:** Coordinating supply chains and incentives for electrification.
- **IRENA Roadmap:** Sets measurable targets-**35% electricity share by 2035, 50% by 2050**.
- **European Material Reshoring:** Extracting critical battery materials from Eastern Europe to secure supply chains.

Way Forward

- **Codify 35% Target:** Formalize electrification goal in COP31 Antalya decision, similar to COP28 renewables pledge.
- **Sovereign Transition Funds:** Impose windfall taxes on fossil fuel firms to finance grid modernization.
- **Pacific Pre-COP Dialogues:** Integrate indigenous knowledge and coastal resilience into electrification plans.
- **Tech Transfer Mandates:** Waive patents for heat pumps and long-duration batteries for low-income nations.
- **Cross-Border Grids:** Build HVDC continental grids for seamless renewable energy sharing.

Conclusion

Electrification as a **COP31 priority** marks a shift from abstract pledges to **concrete energy system transformation**. Bridging the **\$1 trillion annual funding gap** and ensuring **equitable access** will be critical to achieving long-term climate stability.

C. DISASTER MANAGEMENT

I. Disasters and their management

1. DELHI HEAT CRISIS

Delhi and the **National Capital Region (NCR)** are facing **intensifying heatwaves**, marked by prolonged high temperatures and minimal cooling at night.

Delhi's Heat Retention

- **Heat-absorbing infrastructure:** Concrete, asphalt, steel, and glass dominate construction, storing heat during the day and releasing it slowly at night.
- **High surface temperatures:** Densely built areas record **50-60°C** on peak afternoons, acting as thermal reservoirs.
- **Glass-heavy architecture:** Modern buildings in Gurgaon/Noida trap solar radiation indoors, increasing dependence on air conditioning.
- **Vehicular emissions:** Traffic corridors like **NH-48** act as "thermal corridors," adding continuous heat.
- **Poor urban design:** Narrow streets and dense construction restrict airflow, eliminating traditional cooling features like courtyards and shaded pathways.

Cooling Systems and Heat Feedback

- **Air conditioners expel heat outdoors**, raising local temperatures by 1-2°C.
- **Feedback loop**: Rising heat → more AC use → more outdoor heat.
- **Energy demand**: Delhi's summer power demand has crossed **8,000 MW**, with cooling systems as the main contributor.
- **Future challenge**: By 2050, cooling demand may overwhelm power grids, risking blackouts during extreme heat.

Economic and Ecological Impact

- **Industrial productivity loss**: Factories and warehouses see a **2-3% decline per degree rise** above optimal levels.
- **Supply chain disruptions**: Heat slows transport and damages storage, raising costs.
- **Economic losses**: India loses over **\$100 billion annually** due to heat-related productivity decline.
- **Shrinking natural cooling systems**: Loss of wetlands, Yamuna floodplains, and green cover reduces evapotranspiration, worsening heat stress.

Mitigation Strategies

- **Heat-resilient materials**: Use **cool roofs, reflective coatings, and high-albedo surfaces**.
- **Passive cooling design**: Promote insulation, shading, and natural ventilation.
- **Urban planning reforms**: Restore **ventilation corridors** and reduce dense heat-trapping layouts.
- **Green & blue infrastructure**: Expand **parks, wetlands, and water bodies** to regulate temperature.

Conclusion

The **Delhi heat crisis** requires a **multi-pronged approach** from sustainable infrastructure and energy-efficient cooling to restoring ecological buffers. Balancing **development with resilience** is essential to safeguard Delhi's population and economy against escalating heatwaves.

2. ELECTRICAL FIRE RISKS IN INDIA

Why in News?

- A **pre-dawn fire in Vivek Vihar, East Delhi (May 2026)** that killed nine people has drawn attention to India's growing **electrical fire risks**, exposing gaps in **wiring standards, safety codes, and fire infrastructure**.

Electrical Fires

- **Primary Cause of Urban Fires**: Over **80% of fires in Delhi** and **75% in Mumbai** are traced to **electrical faults**, making them the leading cause of urban fire incidents.
- **National Fire Records**: NCRB (2022) reported **7,566 fire accidents** and **7,435 deaths**, though many electrical fires are **under-counted** under generic categories.
- **Air Conditioner Expansion**: Installed AC base projected to rise from **93 million (2024)** to **240 million (2030)**, stressing circuits not designed for such heavy loads.
- **Infrastructure and Expertise Deficit**: India faces a **96% shortage in fire infrastructure** and lacks trained **fire forensic engineers**, weakening prevention and investigation capacity.

Causes of Electrical Fires

- **Outdated Wiring**: Old circuits cannot handle modern loads like ACs, geysers, and EV chargers.
- **Harmonic Distortion**: Inverter appliances overheat neutral wires, raising fire risks.
- **Counterfeit Components**: Non-ISI wires and breakers fail under high current.
- **Loose Connections**: Oxidised sockets create hotspots leading to smouldering fires.

- **Neglected Maintenance:** Dust and moisture in unused appliances trigger short circuits.

Challenges in Addressing Risks

- **Forensic Deficit:** Most fires attributed vaguely to “short circuit” without root-cause analysis.
- **Absence of AFCIs:** Arc-Fault Circuit Interrupters, mandatory in the U.S., are missing in Indian codes.
- **Weak Inspection Regimes:** No mandatory wiring audits every 4-5 years as seen in Japan/South Korea.
- **Low Awareness:** Consumers often overload circuits with multiple heavy devices.
- **Insurance Gaps:** No ecosystem for IoT-based fire detection devices in India.

NDMA Guidelines on Electrical Fire Safety

- **Mandatory Load Audits:** Hospitals, malls, and high-rise buildings must undergo **periodic electrical load audits** to ensure circuits can handle modern appliances like ICUs, ACs, and EV chargers.
- **Fire-Resistant Wiring:** Use **flame-retardant cables** and **metal conduits** for low-voltage circuits, as mandated by the **National Building Code (NBC)**, to reduce ignition risks.
- **Compartmentalisation of Shafts:** Electrical distribution shafts must be **segregated with fire-stopping barriers**, preventing vertical fire spread across floors.
- **Automatic Detection Systems:** Install **smoke detectors, sprinklers, and central alarm systems** in critical areas to enable early detection and rapid response.
- **Evacuation & Disaster Plans:** Conduct **regular evacuation drills** and maintain a **building-level disaster management plan**, ensuring occupants know escape routes and emergency protocols.

Way Forward

- **Harmonic Compliance:** Tie approvals for data centres, malls, EV hubs to **IEEE 519 standards**.
- **Periodic Audits:** Introduce mandatory inspections every 5 years or after adding major loads.
- **Forensic Chain:** Establish a **National Fire Investigation Agency** for root-cause reporting.
- **AFCI Mandate:** Update codes to include **Arc-Fault Detection Devices** in new buildings.
- **Public Awareness:** Campaigns on ISI-marked products, safe load sharing, and annual AC servicing.

Conclusion

India's electrical fire crisis is a **predictable outcome of modern loads on outdated wiring**. Moving from **post-fire affidavits to pre-fire inspections** is the only way to prevent tragedies.

D. SCIENCE AND TECHNOLOGY

I. Awareness in the fields of IT, Space,

1. GAGANYAAN'S ENVIRONMENTAL CONTROL AND LIFE SUPPORT SYSTEM (ECLSS)

Recently ISRO has showcased the **Environmental Control and Life Support System (ECLSS)** for the **Gaganyaan mission**, designed to replicate Earth-like conditions and ensure astronaut safety.

What is Gaganyaan's ECLSS

- **Astronaut Safety:** The ECLSS is designed to replicate **Earth-like living conditions** inside the crew module, ensuring astronaut survival through regulated oxygen, water recycling, waste management, and fire safety systems.

- **Technological Milestone:** This marks India's entry into the league of nations capable of **independent human spaceflight**, with ECLSS being the backbone of mission safety and sustainability.
- **Future Readiness:** The system lays the foundation for **long-duration missions, space station modules, and deep space exploration**, strengthening India's global space research collaborations.



Air Revitalisation

- **Oxygen Supply:** Maintained at safe levels for survival.
- **Carbon Dioxide Removal:** Lithium hydroxide canisters absorb CO₂; activated charcoal neutralizes odours.
- **Atmospheric Control:** Pressure and humidity regulated to mimic Earth-like conditions.

Thermal Regulation

- **Cabin Temperature:** Maintained between **20-26°C** for comfort.
- **Humidity Control:** Relative humidity kept within **30-70%**.
- **Electronics Safety:** Prevents overheating of onboard systems.

Water Management

- **Recycling & Storage:** Essential in microgravity where conservation is critical.
- **Microgravity Risks:** Floating water globules can cause **short circuits or accidental inhalation**.
- **Safe Usage Systems:** Special containment and dispensing mechanisms ensure safe consumption.

Waste Management

- **Chemical Treatment:** Neutralises odours and inhibits bacterial growth.
- **Sealed Storage:** Airtight containers store waste until return.
- **Hygiene Assurance:** Prevents contamination and maintains crew health.

Fire Safety

- **Suppression Systems:** Integrated mechanisms ensure rapid response.
- **Emergency Depressurisation:** As a last resort, cabin can be depressurised (similar to Russia's Soyuz) after astronauts wear protective suits.

Significance of Gaganyaan's ECLSS

- **Crew Survival & Comfort:** Provides safe oxygen, controlled temperature, clean water, and waste management.
- **Human Spaceflight Capability:** Demonstrates India's competence in advanced life support systems.
- **Foundation for Future Missions:** Builds groundwork for space station modules, long-duration missions, and deep space exploration.
- **Strategic Advancement:** Strengthens India's position as a spacefaring nation, enhancing scientific prestige and collaborations.

Conclusion

The **ECLSS** is the backbone of **Gaganyaan**, replicating Earth-like conditions in space. It ensures astronaut safety and marks a crucial step in India's journey toward **human space exploration**.

E. SECURITY

I. Role of External State and Non-state Actors in creating challenges to Internal Security.

1. RUSSIA CHINA PROXIMITY AND INDIA'S SECURITY CHALLENGE

Russian President **Vladimir Putin's** recent visit to **Beijing** underscored the **deepening Russia-China partnership**, raising strategic concerns for India amid shifting global power equations.

Russia-China Relations

- **Historical Background:** Relations have passed through **imperial, Soviet, and post-Soviet** phases.
- **Early Cooperation:** The **1950 Treaty of Friendship** marked strong ties after China's Communist revolution.
- **Sino-Soviet Split:** Ideological rifts led to **border clashes in 1969**, paving the way for **US-China rapprochement**.
- **Post-Soviet Revival:** After 1991, both nations rebuilt ties through the **1992 Strategic Partnership Treaty**.
- **No-Limits Partnership:** In 2022, **Putin** and **Xi Jinping** declared a **"no-limits" partnership**, signalling unprecedented strategic closeness.

Deepening Strategic Partnership

- **Economic Interdependence:** China now accounts for **≈32 % of Russia's trade** (≈\$228 billion of \$700 billion in 2025).
- **Energy Cooperation:** Expansion of the **Power of Siberia gas pipelines** strengthens long-term energy ties.
- **Technology & Industry:** Chinese firms replaced Western companies in **automobiles, telecom, and semiconductors**.
- **Currency De-dollarisation:** Bilateral trade increasingly uses **yuan and ruble**, reducing dependence on the US dollar.
- **Political Coordination:** Frequent summits and over 40 agreements in 2025 highlight **shared opposition to Western dominance** and support for a **multipolar world order**.

Are They Moving Toward a Military Alliance?

- **Strategic Alignment:** Both view the **US as a structural rival**, but remain cautious about formal defence commitments.
- **Mutual Constraints:** China avoids entanglement in **Russia's Ukraine conflict**. Russia steers clear of **China's Taiwan tensions**.

- **Flexible Cooperation:** Joint military drills and technology exchanges continue, yet **no formal alliance** is expected soon.
- **US-China Engagement:** Renewed US-China diplomacy further reduces the likelihood of a binding pact.

Implications for India's Security

- **Strategic Dilemma:** Russia's growing dependence on China narrows India's **strategic balancing space** between Moscow and Washington.
- **Defence Cooperation Risks:** India's reliance on **Russian defence supplies (≈ 60 % of inventory)** could face constraints if Moscow prioritises Beijing.
- **Regional Power Shift:** A stronger Russia-China axis may **reshape Eurasian geopolitics**, affecting India's interests in **Central Asia and the Indo-Pacific**.
- **Policy Recalibration:** India must **diversify defence partnerships**, strengthen **Quad cooperation**, and enhance **self-reliance in technology and energy**.

Conclusion

The **Russia China proximity** marks a major **geopolitical realignment**, challenging India's traditional strategic equilibrium. India must pursue **multi-vector diplomacy and defence autonomy** to safeguard its interests in an increasingly multipolar world.

II. Cyber Security

1. CYBER WARFARE AND THE LEGAL VACUUM

Why in News?

- Amid rising **geopolitical tensions between the US, Israel, and Iran**, experts have warned that **cyber warfare is expanding faster than global legal frameworks**, exposing a dangerous governance vacuum.

Nature of Cyber Warfare

- **Definition:** Cyber warfare refers to **digitally driven attacks** carried out by states or state-sponsored groups to **disrupt, infiltrate, or damage** another nation's networks, infrastructure, and communication systems.
- **Modern Conflict Tool:** It has evolved into a **primary weapon of international conflict**, operating at **machine speeds** and often bypassing traditional legal accountability mechanisms.
- **Legal Challenge:** The rapid growth of cyber operations has created a **governance vacuum**, leaving global institutions struggling to define rules and enforce accountability.

Global Data & Trends (2026)

- **Economic Cost:** Cybercrime and state-linked attacks projected at **\$10.5-10.8 trillion annually**, expected to reach **\$23 trillion by 2027**.
- **India's Exposure:** Indian organizations face **3,195 weekly attacks per firm**, **62% higher than global average**.
- **AI-Driven Speed:** Breakout time for e-crime has dropped to **29 minutes** due to generative AI tools.
- **Critical Targets:** Government and education sectors in India face **4,912 and 7,684 weekly probes**, respectively.

Reasons for Surge in Cyber Warfare

- **Low-Cost Advantage:** Enables weaker nations/non-state actors to inflict damage without expensive weapons.
- **Anonymity & Deniability:** Attacks routed through proxies hide state involvement.
- **Force-Multiplier Strategy:** Pre-emptive cyber strikes disable defenses before physical attacks.
- **Dual-Use Assets:** Civilian networks exploited for military purposes.

- **Legal Vacuum:** No binding global punishment mechanisms for state-sponsored cyber intrusions.

Challenges

- **Attribution Gap:** Difficult to convert intelligence on attackers into **legally admissible proof**. For example, tracing malware to a group often fails in court due to weak digital chain of custody.
- **Use of Force Ambiguity:** No clear global standard on when a cyberattack equals an **act of war** under the UN Charter. A 48-hour power grid shutdown may cause devastation but remains legally undefined.
- **Sovereign Immunity:** International tribunals like the ICJ cannot act against a state without its **explicit consent**, limiting accountability.
- **Treaty Limitations:** Existing frameworks (e.g., Budapest Convention) focus on **individual hackers**, not **state-sponsored APT groups** engaged in espionage or sabotage.
- **Fear of Escalation:** Victim states avoid legal remedies to prevent **intelligence leaks** or escalation of geopolitical tensions.

Government Initiatives

- **Budapest Convention:** First multilateral treaty harmonizing cybercrime laws and forensic cooperation.
- **UN Cybercrime Convention:** Negotiated to establish **global standards** for evidence sharing and asset recovery.
- **India's Cybersecurity Budget:** Allocation of **₹782 crore (2026)** to strengthen national cyber defense.
- **CERT-In Operations:** Sector-specific SOC's deployed to monitor **real-time attacks** on power and telecom grids.
- **Global Data:** Cybercrime costs projected at **\$10.5-10.8 trillion annually**, rising toward **\$23 trillion by 2027**.

Way Ahead

- **Digital Geneva Convention:** Draft a binding treaty outlawing **state-sponsored cyberattacks** on civilian infrastructure like hospitals and banks.
- **Attribution Protocols:** Establish UN-backed forensic panels to **neutrally identify attack origins**.
- **Zero-Trust Architecture:** Mandate resilient defense systems with **human oversight** to keep critical services running during attacks.
- **Automated Sanctions:** Create agreements that trigger **automatic sanctions** against states hosting cyber campaigns.
- **Global South Alliances:** India to lead **mini-lateral cyber alliances** within the Global South to counter advanced threat actors.

Conclusion

Cyber warfare has become a **frontline weapon of modern geopolitics**, moving faster than existing legal systems. Without a **binding global treaty and resilient national defenses**, critical infrastructure remains exposed to trillion-dollar risks.



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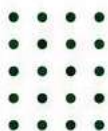
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3	CA June 2026	26.07.2026
4	CA July 2026	16.08.2026
5	CA August 2026	13.09.2026
6	CA September 2026	11.10.2026
7	CA October 2026	15.11.2026
8	CA November 2026	13.12.2026
9	CA December 2026	10.01.2027
10	CA January 2027	14.02.2027
11	CA February 2027	14.03.2027
12	CA March 2027	11.04.2027
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GENERAL STUDIES - 4

A. ETHICS, INTEGRITY AND APTITUDE

I. Ethics in Public Administration

1. Recusal in Judiciary

Why in the news?

- Delhi High Court recusal controversy highlighted ethical concerns regarding judicial impartiality, fairness, and integrity in constitutional governance.

Ethical Issues Involved

- **Judicial Impartiality:** Judges must remain unbiased and appear unbiased while discharging judicial responsibilities.
- **Public Confidence:** Perception of neutrality is essential for trust in judiciary.
- **Conflict of Interest:** Professional or personal associations creating apprehension of bias raise ethical concerns in adjudication.
- **Integrity in Public Office:** Judicial office demands avoidance of situations affecting credibility.
- **Fairness and Natural Justice:** Justice should not only be done but also be seen to be done.
- **Procedural Fairness:** Transparent and unbiased process is fundamental to rule of law.
- **Accountability and Transparency:** Judicial decisions affecting public trust require objective reasoning and institutional accountability.
- **Ethical Responsibility:** Courts must preserve legitimacy through ethical conduct.
- **Constitutional Morality:** Judges are custodians of constitutional values including equality, fairness, and due process.
- **Protection of Democratic Institutions:** Ethical judicial behaviour safeguards constitutional democracy.

Values Highlighted in the Case

- **Integrity:** Judges must maintain high ethical standards in both official and personal conduct.
- **Moral Credibility:** Ethical restraint strengthens institutional legitimacy.
- **Objectivity:** Decisions should be free from personal preferences or external influences.
- **Reasonable Apprehension Standard:** Even appearance of bias can weaken public trust.
- **Propriety:** Judicial conduct should avoid situations creating doubts about impartiality.

Lessons for Governance and Ethics

- **Importance of Ethical Institutions:** Democratic governance depends on impartial and trusted institutions.
- **Rule of Law:** Fair adjudication ensures protection of citizens' rights.
- **Need for Codified Standards:** Clear recusal guidelines can reduce ambiguity and strengthen judicial accountability.
- **Institutional Reforms:** Transparent mechanisms enhance credibility of justice delivery.

Conclusion:

Ethical governance requires both actual impartiality and visible fairness. Judicial integrity remains indispensable for sustaining constitutional democracy and rule of law.

II. Probity in Governance

1. NTA and NEET Paper Leak

Why in the news?

- Repeated controversies over alleged paper leaks and malpractice in medical entrance examinations have reignited concerns over examination integrity.

Implications of Examination Leaks

- **Erosion of Public Trust:** Repeated controversies weaken faith in merit-based selection processes.
- **Mental Stress Among Students:** Genuine aspirants face uncertainty, anxiety, and reduced confidence in fairness.
- **Threat to Social Mobility:** Examination irregularities disproportionately affect economically weaker students dependent on merit.
- **Damage to Institutional Credibility:** National Testing Agency (NTA) and public institutions face reputational decline.
- **Economic and Governance Costs:** Re-examinations and investigations impose administrative and financial burdens.

Measures Needed for Reform

- **Minimise Human Exposure:** Restrict access to complete question papers and question banks to very few individuals.
- **Strengthen Academic Control:** Universities and academic bodies should directly manage sensitive examination processes.
- **Use Secure Machine-Assisted Translation:** Reduce dependence on manual translation through technology-assisted secure systems.
- **Strict Conflict-of-Interest Norms:** Mandatory disclosure and periodic rotation of paper setters and translators must be enforced.
- **Enhanced Cybersecurity Measures:** Robust digital security systems are essential for CBT infrastructure.
- **Independent Audit Mechanism:** Regular external audits should evaluate examination integrity and operational procedures.
- **Institutional Accountability Framework:** Clear legal responsibility and punitive mechanisms must exist for malpractice.

Constitutional and Governance Dimensions

- **Article 14 - Equality Before Law:** Fair examinations are essential to ensure equal opportunity in education and employment.
- **Article 21 - Right to Life and Dignity:** Examination irregularities affect students' future prospects and psychological well-being.
- **Good Governance Principle:** Transparent and accountable public institutions are fundamental to democratic governance.



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