

CIVIL SERVICES EXAMINATION focus

MONTHLY NOTES BY RAU'S

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CURRENT AFFAIRS ANALYSIS

logical . simple . targeted
analysis & explanation
of relevant news

ETHICS, INTEGRITY & APTITUDE

Coverage from
varied
sources

ESSAYS OF THE MONTH

Selected essays
from Rau's
GSI students

**AUGUST
2025**



**RAU'S IAS
STUDY CIRCLE**

Since 1953

focus

CRITICAL NOTES FOR THE PREPARATION OF GENERAL STUDIES PAPERS

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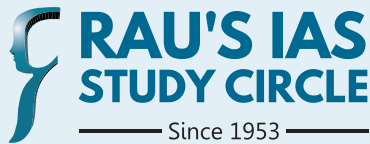
Rau's IAS Content Team

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The purpose of Focus is to expound the applied nature of General Studies to Civil Services aspirants thereby making them aware of the real demand of UPSC exam.

The sources relied for selection and analysis of issues are:

1. The Hindu, The Hindu (Sun.)
2. The Indian Express
3. The Times of India
4. Asian Age
5. The Tribune
6. The Economic Times
7. Hindu Business Line
8. Frontline
9. Economic and Political Weekly
10. IDSA
11. BBC
12. Yojana
13. Kurukshetra
14. Down to Earth



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Dear Students,

FOCUS is the Study Circle's monthly publication of contemporary issues and current affairs analysis. It is in fact a collective effort, by experienced educators in varied themes, of identifying current affairs in light of the UPSC syllabus, supplementing them with background information, explaining their related dimensions, lending them a generalist viewpoint and thus producing critical notes for the preparation of General Studies' syllabus.

The publication, as the name suggests, focuses solely on issues which are relevant to the **factual** as well as **applied** aspects of the General Studies' syllabus. That is how Focus covers all anticipated issues and themes for the upcoming Civil Services Examination (CSE).

Features

PART ONE | CURRENT AFFAIRS ANALYSIS

- This month's edition covers analysis of news from the immediately preceding month.
- All news/issues are categorized and clubbed syllabus-wise (International Relations, Polity & Governance, Science & Technology, Ethics, Integrity & Aptitude and so on) for efficient study.
- Background information has been added to provide context.
- Related and Additional information-dimensions have been explained to add depth to your understanding.
- Maps and figures have been provided for associative and retentive learning.
- Practice Questions

PART TWO | ETHICS, INTEGRITY & APTITUDE

- Coverage from varied sources

PART THREE | ESSAYS FOR YOU

- Selected essays from Rau's GSI students

For further understanding or discussion in any topic, please consult your respective professors.

Good Luck!
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PART ONE

CURRENT AFFAIRS

**logical .simple .targeted
analysis & explanation
of all relevant news of the month**

ECONOMIC DEVELOPMENT

GS PAPER (PRELIMS) & GS PAPER III (MAIN)

NATIONAL COOPERATIVE POLICY 2025

#COOPERATIVES #INDUSTRIAL POLICY

PRIMARY SOURCE THE HINDU

The Central Government has unveiled the **National Cooperative Policy 2025**. The government has urged States to announce their **own cooperative policies** by January 31, 2026, in alignment with the National Cooperative Policy.

WHAT ARE COOPERATIVES?

- A cooperative is a voluntary association of individuals with common economic, social, and cultural needs and aspirations, who come together to pool resources for mutual benefit. It functions on democratic principles and emphasises collective ownership, shared profits, and participatory decision-making.
- The 97th Constitutional Amendment (2011) gave constitutional recognition to cooperatives, adding Part IXB to the Constitution and inserting the term "Cooperatives" in Article 19(1)(c).
- **Types of Cooperatives:** Primary Agricultural Credit Societies (PACS); Dairy cooperatives, Fisheries cooperatives, Urban Cooperative Banks, etc.
- There are over 8.6 lakh registered cooperative societies in India covering 30 crore members, covering 99% of villages and 71% of rural households.

BENEFITS OF COOPERATIVES

- **Economic Inclusion:** Help small farmers, artisans, and rural entrepreneurs access markets and finance.
- **Job Creation and Democratic Empowerment:** Ensure grassroots participation in economic activities. With over 30 crore members, cooperatives remain a key socio-economic driver, especially in rural India.
- **Rural Development:** Cooperatives enable rural credit, dairy, storage, and agro-processing.

Successful Case studies of Cooperatives



पूर्णतः सहकारी स्वामित्व
Wholly owned by Cooperatives

- World's largest Cooperative in terms of turnover.
- India's largest Fertilizer Manufacturer.
- Started in 1960 as fertilizer Cooperative.
- Diversified its business towards Insurance, Microfinance, Food Processing (IFFCO Kisan SEZ) etc.



The Taste of India

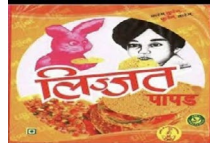
- World's largest dairy Cooperative and World's 3rd Largest Cooperative
- Enabled India to usher in "White Revolution".
- Focused on Value addition of milk-based products for more profits



INDIA COFFEE HOUSE

- Restaurant chain in India run by worker Cooperatives.
- Started by former employees of coffee board who were dismissed in 1950.

Shri Mahila Griha Udyog Lijjat Papad



- Started by Women Cooperative in 1960 with a seed capital of just Rs 80.
- Annual Turnover of Rs 1200 crores and provides employment to 45,000 women.
- Functions on the principle of Sarvodaya and collective ownership.

Mumbai's Dabbawala



- Started in 1890 to deliver home cooked food.
- Today, around 5000 dabbawallas deliver food to 2 lakh people daily.
- Known for its efficiency, management, work ethics.

Karnataka Milk Federation



- Second Largest Milk Cooperative after AMUL

CHALLENGES (AS PER SHIVAJI RAO PATIL COMMITTEE)

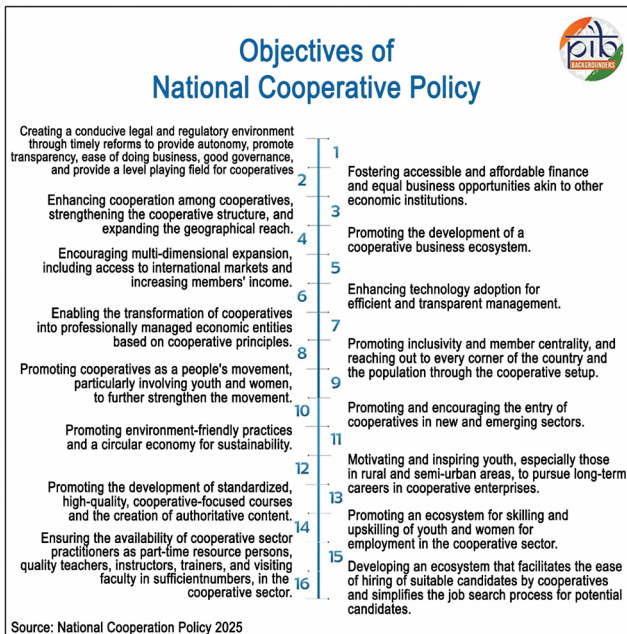
- **Lack of participatory character:** Free rider problem where inactive members benefit without contribution. Dominated by elite members and politicians.
- **Restricted Coverage and Role:**
 - Equity infusion by the government enables the government to appoint board of directors leading to poor autonomy.
 - State Cooperative Acts allow postponing elections and superseding boards.
- **Regional Skew:** Cooperatives are successful only in a few states like Karnataka, Gujarat, Maharashtra. Limited to single-purpose societies like PACs, reducing viability.
- **Governance related issues:** Poor regulation by Registrar of Cooperative Societies. Prevalence of Financial fraud, corruption etc.
- **Lack of adequate capital** as cooperatives cannot raise money from capital markets. Poor use of technology and lack of professional management.

GOVERNMENT INITIATIVES FOR COOPERATIVE SECTOR

- Creation of Ministry of Cooperation (2021) to streamline cooperative growth, policymaking, and digitisation.
- Computerisation of PACs.
- Income tax relief: Reduction in MAT from 18% to 15% in Union Budget 2023-24.
- National Cooperative Database launched to create a real-time, unified registry of all cooperative societies.
- Banking Regulation (Amendment) Act, 2020 to strengthen regulation of urban cooperative banks.
- Cooperatives as buyers on GeM portal (Government e-Marketplace).

NATIONAL COOPERATIVE POLICY 2025

- **Vision:** To contribute to India's collective ambition of becoming 'Viksit' by 2047 through sustainable cooperative development.
- **Need for a New Policy:** The last cooperative policy was framed in 2002 which was outdated due to the radical shifts brought on by globalisation, digitisation, and socio-economic transformation.



KEY HIGHLIGHTS OF NATIONAL COOPERATIVE POLICY 2025

Legislative and Institutional Reforms:

- Encourage States to amend cooperative laws (Cooperative Societies Acts and Rules) to enhance transparency, autonomy and ease of doing business.

- Promote digitalisation of registrar offices and real-time cooperative databases.
- Revive sick cooperatives with institutional mechanisms.

Financial Empowerment:

- Preserve and promote the three-tier **Primary Agriculture Credit Societies (PACS) - District Central Cooperative Bank - State Cooperative Bank** credit structure.
- Promote cooperative banks and umbrella organisations (like National Urban Cooperative Finance & Development Corporation).
- Enable cooperative banks to handle government businesses.

Business Ecosystem Development:

- Model cooperative villages with multipurpose PACS as growth engines.
- Encouraging States/UTs to develop at least one model cooperative village.
- Develop rural economic clusters (E.g., honey, spices, tea).

Future-Readiness & Technology:

- Develop a national **'Cooperative Stack'** integrating with Agri-stack and databases.
- Promote Open Network for Digital Commerce (ONDC) and Government e-marketplace (GeM) platform integration.
- Encourage research and innovation through cooperative incubators and Centres of Excellence.

Inclusivity Measures:

- Active participation of youth, women, SC/STs, and differently-abled in cooperatives.
- Model bye-laws for gender representation and transparent governance.

Sectoral Diversification:

Promote cooperatives in new and emerging sectors such as:

- Renewable energy,
- Waste management,
- Health and education,
- Mobile-based aggregator services (E.g., for plumbers, taxi drivers),
- Organic and natural farming,
- Biogas and ethanol production, etc.

Implementation and Monitoring:

A robust multi-tier implementation structure is proposed:

- **Implementation Cell** within the **Ministry of Cooperation** with technical Project Management Unit support for effective and timely implementation of the policy.
- **The National Steering Committee on Cooperation Policy** chaired by the Union Cooperation Minister will be constituted for overall guidance, inter-ministerial coordination, periodic policy review, etc.
- **Policy Implementation and Monitoring Committee** headed by the Union Cooperation Secretary for coordination with States, troubleshooting implementation bottlenecks, periodic monitoring and evaluation, etc.

GLOBAL CAPABILITY CENTERS IN INDIA

#SERVICE SECTOR

PRIMARY SOURCE THE HINDU

The **Confederation of Indian Industry (CII)** organised the Inaugural Edition of the **Global Capability Centers (GCCs) Summit** in New Delhi recently.

GLOBAL CAPABILITY CENTERS

- Global Capability Centres (GCCs) or Captive Centres are **offshore offices** or subsidiaries set up by multinational corporations (MNCs) to handle various business processes and services.
- These centres are responsible for tasks including IT support, data analytics, finance, human resources, BPO etc.
- Over time, GCCs have evolved from being simple support centres to becoming strategic hubs that drive innovation. GCCs now provide a scale and range of services including- product development, operations, R&D, engineering, software, data scientists etc.

STATUS OF GLOBAL CAPABILITY CENTERS IN INDIA

India has emerged as one of the world's largest GCC destinations. Key GCC hubs are located in Bengaluru, Hyderabad, Pune, Chennai, Mumbai, and the National Capital Region (NCR).

- The GCC sector contributes **\$68 billion as direct gross value addition** (GVA) which is **1.6% of India's GDP**.

Estimates suggest GVA from GCCs could rise to \$200 billion by 2030.

- GCCs in India currently **employ nearly 2.16 million people**. Estimates suggest it is expected to grow to 2.8 million by 2030.
- Over **1800 GCCs** are currently operational in India at present which are projected to increase to 5000 by 2030.
- Setup rate of engineering R&D GCCs has grown 1.3 times faster than the overall GCC setup over the last 5 years, indicating a clear shift towards **high-value-added work in India**.

The government is working on a **comprehensive National Framework for GCCs** to further accelerate their growth.

FACTORS CONDUCIVE TO THE GROWTH OF GCCS

- **Govt. initiatives:** Strong physical and digital infrastructure supported by strategic initiatives like Digital India and Ease of Doing Business Reforms have created a conducive environment.
- **Specific policies by states** like Karnataka, Tamil Nadu, and Telangana in physical and digital infrastructure development have enabled GCC clustering in these regions.
- **India's talent pool** remains a critical competitive advantage with approximately 2.1 million STEM graduates entering the workforce annually. There is approximately 35% female participation in the GCC workforce.
- **Cost-effectiveness:** Engaging Indian talent is more cost-effective as compared to other countries. It is estimated that GCC operations cost 30-50% in India less than the US, the UK and Australia.

CHALLENGES ASSOCIATED WITH GCCS

- **Clustered development in few states:** About 95% of GCCs in India are concentrated at six major locations, and the challenge is to expand this base to Tier-2 cities. Lack of digital infrastructure, power outages, unreliable internet connectivity, and traffic congestion can impact their expansion in Tier-2 cities.
- **Regulatory Issues:** Due to a lack of National level GCC policy, different states of India have varied GCC policies. There are also concerns related to dispute resolution mechanisms, and the lengthy appellate process.

- **Transfer Pricing:** Safe Harbour Regime was introduced to provide certainty in transfer pricing for MNCs. Industry experts have recommended safe harbour margin rates of 14-15% aligning with global trends, as the current transfer pricing margin rates of 17-24% is detrimental for MNCs' revenues and operations, and discourages GCC expansion.
- **Operational Challenges:** Conflicts between cross-border data transfers laws and regional laws create significant operational challenges for GCCs. E.g., Balancing EU-US Data Privacy Framework and India's data mandates under the DPDP Act 2023.
- **IP issue:** Despite hiring Indian engineers, GCCs retain innovation and intellectual property (IP) abroad. There is also a risk of IP theft or disputes. The multi-jurisdictional nature of GCC operations further complicates IP ownership and enforcement, with differing legal frameworks and limited cross-border IP protection.

WAY FORWARD

- **Enhanced outreach strategies** to attract global players and facilitate GCC expansion beyond the US companies to other countries.
- **Comprehensive framework** involving dialogue between the Centre and state governments and Industry bodies to promote the geographic spread of GCCs to Tier-2 cities.
- **Identifying best practices** from existing GCC hubs in India to provide direction for emerging locations to attract GCCs.
- **For regulatory simplification,** GCCs need a national-level single-window clearance and rationalisation of the safe harbour margins in transfer pricing.
- **Concessional tax rates** to GCCs for engaging in R&D and IP creation.
- **Creation of digital economic zones** housing GPU-based data centres, academia, startups and co-located workspaces. This will facilitate the shift beyond traditional business functions to engineering R&D, AI, and emerging technologies with specialised skills development.

India has evolved from a cost-arbitrage destination to an innovation-driven economy powered by emerging technologies. GCCs have played a vital role in India's

economic landscape by creating high-value jobs, fostering skill development & employment, and facilitating knowledge transfer.

INDIA'S TECHNICAL TEXTILE SECTOR

#MANUFACTURING #TEXTILES SECTOR

PRIMARY SOURCE THE HINDU BUSINESS LINE

*India's Textile Sector is witnessing a transformation with **Technical Textiles emerging as a key growth area**, amid stagnation in traditional manufacturing.*

OVERVIEW OF INDIA'S TEXTILE SECTOR

- Textiles contribute around 2% to India's GDP and make up 3.9% of global exports making India the 6th largest textile exporter in the world.
- The sector directly employs 45 million people and indirectly supports over 100 million (Ministry of Textiles 2023-24). Expected to reach \$350 billion by 2030 and create 3.5 crore new jobs.
- Despite its scale, the share of manufacture of textiles and cotton ginning in India's Gross Value Added (GVA) has been stagnant between 2013 and 2024. The sector recorded a negative growth (-1% CAGR) in this period.

While the traditional sub-segments of the textile sector are facing glitches over the years, the rise of technical textiles has opened a key opportunity.

TECHNICAL TEXTILES

- Technical textiles are defined as textile materials and products used primarily for their technical performance and functional properties rather than their aesthetic or decorative characteristics.
- They are used for various applications ranging from automobiles to space.

The demand for technical textiles is increasing particularly for applications such as :

- Packtech (biodegradable jute sacks)
- Hometech (blinds, fire-resistant curtains)
- Meditech (non-woven absorbent pads)
- Sportstech (wearable technology for sports and fitness applications)
- Indutech (conveyer belts)

ECONOMIC DEVELOPMENT

Meditech <ul style="list-style-type: none"> • Diapers, Sanitary Napkins, Disposables, Contact Lens, Artificial Implants 	Mobilech <ul style="list-style-type: none"> • Airbags, Helmets, Nylon Tyre Cords, Airline Disposables 	Oekotech <ul style="list-style-type: none"> • Recycling, Waste Disposal, Environmental Protection 	Packtech <ul style="list-style-type: none"> • Wrapping Fabrics, Polyolefin Women Sacks, Leno Bags, Jute Sacks 	Protech <ul style="list-style-type: none"> • Bullet Proof Jackets, Fire Retardant Apparels, High Visibility Clothing 	Sportech <ul style="list-style-type: none"> • Sports Net, Artificial Turf, Parachute Fabrics, Tents, Swimwear
Agrotech <ul style="list-style-type: none"> • Shadents, Fishing Nets, Mulch Mats, Ant - hail Nets 	Buildtech <ul style="list-style-type: none"> • Cotton Canvas Tarpaulins, Floor and Wall Coverings, Canopies 	Clothtech <ul style="list-style-type: none"> • Zip Fasteners, Garments, Umbrella Cloth, Shoe Laces 	Geotech <ul style="list-style-type: none"> • Geogrids, Geonets, Geocomposites 	Homotech <ul style="list-style-type: none"> • Mattress and Pillow Fillings, Stuffed Toys, Blinds, Carpets 	Indutech <ul style="list-style-type: none"> • Conveyer Belts, Vehicle Seat Belts, Bolting Cloth

Further, the 3D non-woven textiles have expanded the industry's reach into automotive, aerospace and protective gear manufacturing.

OVERVIEW OF TECHNICAL TEXTILE SECTOR

- The Indian technical textile industry is experiencing strong growth of 10-12% CAGR, the market is projected to grow from \$29 billion in 2024 to \$309 billion by 2047.
- India has become a net exporter of technical textiles recording a growth of 5.3% CAGR from \$1.99 billion in 2019 to \$2.59 billion in 2024.
- The penetration rate is expected to increase from 13-20% in 2026 to 40-60% by 2047.

GOVERNMENT INITIATIVES TO BOOST TECHNICAL TEXTILE SECTOR

The government has introduced a range of policies, including the:

- **National Technical Textiles Mission (NTTM)** was launched in 2020 by the Ministry of Textiles to boost technical textiles in India. It aims to make India a global leader in Technical Textiles with a budget of Rs. 1480 crore till 2025-26.
- **Grant for Internship Support for Technical Textiles (GIST 2.0):** Launched under NTTM, GIST 2.0 bridges the gap between industry and academia by offering hands-on learning opportunities in technical textiles and fosters local innovation.
- **GREAT Scheme** (Grant for Research & Entrepreneurship across Aspiring Innovators in Technical Textiles Scheme): Launched in 2023 to provide funding to help translate prototypes into technologies and products for commercialisation.

- **Production Linked Incentive (PLI) scheme** focuses on enhancing the scale of production.
- **The PM MITRA** scheme has sanctioned seven integrated textile parks to improve infrastructure, supply chains and production efficiency.
- The government is **reducing duties** on new types of textiles machinery and correcting inverted duty structures to boost exports.

CHALLENGES IN GROWTH OF TECHNICAL TEXTILES IN INDIA

- The majority of the machinery used to manufacture technical textiles is imported from outside.
- Limited skill training in technical textiles.
- The existing textile engineering curriculum is outdated with minimal focus on technical or functional fabrics.
- Lack of awareness - Technical textiles are not yet part of the mainstream textile culture in India.

WHY IS CORPORATE INVESTMENT LAGGING BEHIND?

#MOBILISATION OF RESOURCES #INVESTMENT

PRIMARY SOURCE THE HINDU

According to data released by the Ministry of Statistics and Programme Implementation (MoSPI), **India's Index of Industrial Production (IIP) growth fell to 1.2% in May 2025, the lowest in nine months.**

STATE OF CORPORATE INVESTMENT IN INDIA

The 2024-25 Economic Survey expressed concern, noting that:

- The corporate sector is enjoying record-high financial performance. However, there has been negligible growth in hiring and employee compensation.
- **Private-sector Gross Fixed Capital Formation (GFCF)** in machinery, equipment, and intellectual property has grown only 35% cumulatively over four years- indicating weak investment momentum.

Despite various government steps like tax cuts, infrastructure spending (capex), and low interest rates, private sector investment is not picking up and lagging behind.

WHY IS CORPORATE INVESTMENT LAGGING BEHIND?

- **Low Consumer Demand:** After COVID-19, overall demand in the economy is weak. When people are not buying enough, companies see no reason to invest in expanding production.
- **Underutilisation of Existing Capacity:** Firms are hesitant to invest when their existing facilities are not being used to full capacity, fearing low returns from added production.
- **Slow Export Demand:** The global economic slowdown, combined with rising trade protectionism and tariff regimes (such as the reciprocal tariff measures by the US), has weakened external demand for Indian goods. This uncertain global environment discourages firms from undertaking export-oriented investments.
- **Delay in Impact of Government Capex Projects:** Projects like ports and highways have long gestation periods, the time lag between investment and tangible economic returns delays their crowd-in effect on private investment. So, their benefits do not immediately encourage private investment.
- **High Import Content in Capex:** A part of the government's capital expenditure goes into imported machinery and technology. This does not help Indian industries and reduces the positive impact on local demand.
- **Low Labour Intensity of Projects:** Many infrastructure projects use heavy machines instead of workers. This means fewer jobs are created, so income and consumption do not rise much.
- **Low interest rates are not enough:** Even if loans are cheap, companies would not borrow unless they believe they can sell their products and make profits.

- **Weak Link profits and investment:** The assumption that higher profits will automatically lead to greater private investment is flawed. As per renowned economist Kalecki, firms can choose to invest but cannot ensure profits. In a weak demand environment, profitability alone does not incentivise capacity expansion.

Thus, tax cuts or higher earnings do not translate into investment unless backed by strong demand prospects.

WAY FORWARD

- Increase government expenditure to act as an external stimulus for reviving investment.
- Focus on reviving demand, as investment will follow recovery, not lead it.
- Prioritise high-multiplier and short-gestation projects to generate quicker economic impact.
- Minimise import content in capex to ensure maximum domestic demand generation.
- Promote labour-intensive investments to boost employment and consumption.
- Recognise that low interest rates alone cannot drive investment without demand.

DAP FERTILISER CRISIS MADE IN CHINA

#BILATERALTRADE #AGRICULTURE



China's informal ban on DAP exports to India during the crucial sowing season has disrupted supply chains, and has exposed India's strategic dependence on the geopolitical rival.

DAP FERTILISER IN INDIAN AGRICULTURE

- India is the largest importer of **Di-Ammonium Phosphate (DAP)** in the world, the second-most used fertiliser in the country after Urea.
- **DAP contains** - 46% Phosphorus (P) and 18% nitrogen (N), and is critical during sowing for root and shoot development.
- China has historically been the **top exporter of DAP to India**. 80% of India's speciality fertilisers- crucial for high-value horticultural crops like fruits and vegetables, come from China.

CHINA'S INFORMAL WEAPONISATION OF TRADE

Informal Export Ban on DAP:

- China has stopped exporting DAP to India without an official notification.
- Until 2023-24, China was a prominent supplier of DAP to India.
- In 2024-25, imports from China fell from 22.9 lakh tonnes (LT) in FY24 to 8.4 LT in FY25.
- Since January 2025, not a single tonne from China has been imported.

IMPACTS ON INDIA

Shortage of Di-Ammonium Phosphate (DAP) the second most-used fertiliser in India during the peak kharif sowing season.

- **Rise in DAP Prices:**
 - DAP import prices rose from ~\$515/tonne (mid-2024) to \$810+/tonne (mid-2025).
 - DAP prices in local markets spiked from the official MRP of ₹1,350 to ₹1,700+ per 50-kg bag due to shortages and hoarding.
- **Distress among farmers** due to erratic supply and growing black market.
- **Shortage-driven crop damage** may raise prices of vegetables, pulses, and oilseeds, fuelling food inflation.
- **Fertiliser units may struggle to meet demand**, leading to underproduction and reliance on second-tier alternatives like Single Superphosphate (SSP) and Ammonium Phosphate Sulphate (APS). China's indirect control over upstream phosphate resources affects India's ability to domestically manufacture DAP.
- **Indian importers have to source more phosphates** from Saudi Arabia, Morocco, Russia and Jordan, however, none of these countries have been able to fill the void left by China.

WAY FORWARD

- **Supply diversification:** Establish new supply lines from Morocco, Saudi Arabia, Russia, etc.
- **Boost Domestic Production:** Invest in reviving and upgrading public and cooperative sector fertiliser units.
- **Subsidise innovation** in green and nano-fertilisers to reduce import dependence.
- Like the proposed India Rare Earth Mission, create a **National Fertiliser Mission** with production-linked incentives, research, and domestic backward linkages.

- **Leverage multilateral forums** (e.g., WTO) to raise the issue of informal trade blockades.
- Explore **bilateral pressure through BRICS or SCO** diplomatic backchannels.
- Improve real-time logistics and digital tracking of fertiliser distribution and direct benefit transfers for fertiliser subsidies to **bypass black-market exploitation.**

India's fertiliser crisis is a strategic wake-up call. It offers an opportunity for India to reset its fertiliser ecosystem toward efficiency, resilience, and autonomy.

KEY FACTS

- DAP contains 46% Phosphorus (P) and 18% Nitrogen (N). Experts recommend that Indian farmers should be **discouraged from applying fertilisers with very high individual nutrient content**- be it DAP (46% P); Urea (46% N) and Muriate of Potash (60% potassium or K).
- **Ammonium phosphate sulphate (APS)**, a **NPKS** complex (20: 20: 0: 13), has emerged as India's third most consumed fertiliser after urea and DAP. APS is more balanced i.e., has nutrients in the right quantities and proportions for effective absorption by the plant roots and leaves.

REGULATION OF BIOSTIMULANTS IN AGRICULTURE

#AGRICULTURE

PRIMARY SOURCE *The Indian EXPRESS*

*Government has tightened the **regulation of Biostimulants** following the complaints from farmers about **forced tagging of Nano-fertilisers or Biostimulants** with conventional subsidised fertilisers.*

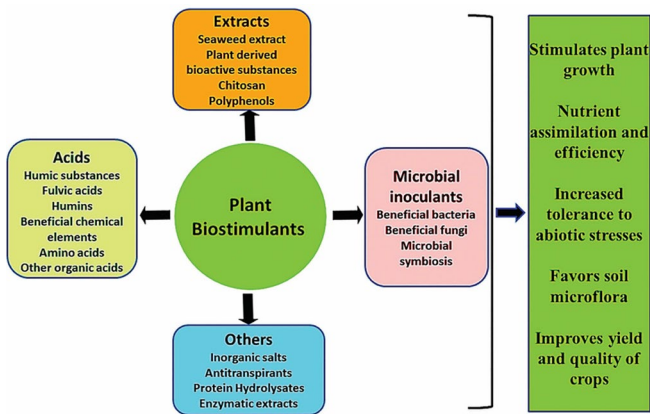
WHAT ARE BIOSTIMULANTS?

The Fertiliser (Inorganic, Organic or Mixed) (Control) Order 1985, which regulates the manufacturing and sale of biostimulants, defines biostimulants as substances or microorganisms that:

- Stimulate plant physiological processes
- Improve nutrient uptake
- Enhance growth, yield, stress tolerance, and crop quality.

- Do not include pesticides or plant growth regulators which are regulated under the Insecticide Act 1968.

They can be derived from seaweed extracts, plant waste, or microorganisms and are not traditional fertilisers or pesticides.



INDIA'S BIOSTIMULANT MARKET

- India biostimulants market size is valued at USD 355.53 million in 2024.
- The market is projected to grow from USD 410.78 million in 2025 to USD 1,135.96 million by 2032, exhibiting a CAGR of 15.64% during the forecast period.

ISSUES WITH BIOSTIMULANTS

- Questionable Efficacy:** Many farmers complained about the ineffectiveness of biostimulants.
- Unregulated Sale in the Past:** Biostimulants were sold without government approval for years since they were neither classified as fertilisers nor pesticides. Over 30,000 products were sold unchecked for years. After government regulation, the number has now come down to approximately 650.
- Provisional Certification Loophole:** Manufacturers were allowed to sell products with only provisional registration, which was extended repeatedly. This delayed the enforcement of full regulatory standards.

1985 FERTILISER CONTROL ORDER (FCO) AND THE INSECTICIDE ACT, 1968

- In India, fertilisers and pesticides are governed by the 1985 Fertiliser Control Order and the Insecticides Act of 1968, respectively.
- The Union Ministry of Agriculture and Farmers' Welfare issues the Fertiliser Control Order (FCO)

under the Essential Commodities Act, 1955, and makes changes to it from time to time.

REGULATION OF BIOSTIMULANTS

- In 2021, the Ministry of Agriculture amended the 1985 FCO and included biostimulants, paving the way for their regulated manufacturing, sale and import. The inclusion of biostimulants empowered the Central government to fix specifications.
- The FCO classified biostimulants** specified in Schedule VI of the FCO in eight categories, including botanical extracts (as well as seaweed extracts), biochemicals, vitamins, and antioxidants.
- Every manufacturer or importer of a biostimulant shall make an application to the Controller of Fertilisers along with the requisite product information.
- The product's chemistry, source (natural extracts of plant/microbe/animal/synthetic), shelf-life, reports of bio-efficacy trials, and toxicity must be submitted, along with other data. **The five basic acute toxicity tests are:**
 - Acute oral
 - Acute dermal
 - Acute Inhalation
 - Primary skin Irritation
 - Eye irritation
- The four eco-toxicity tests are:** (i) Toxicity to birds; (ii) Toxicity to Fish (Freshwater); (iii) Toxicity to honeybees; (iv) Toxicity to earthworm
- The FCO clearly states that **no biostimulant shall contain any pesticide** beyond the permissible limit of 0.01ppm.
- Agronomic bio-efficiency trials** shall be conducted under the National Agricultural Research System, including the Indian Council of Agricultural Research and state agricultural universities.
- Bio-efficacy trials** shall be conducted at minimum three different doses for one season at three agro-ecological locations.

CENTRAL BIOSTIMULANT COMMITTEE

- In 2021, the Agriculture Ministry constituted the Central Biostimulant Committee for 5 years, with the Agriculture Commissioner as its Chairperson and seven other members.

- Under the FCO, it shall advise the Centre on:
 - inclusion of a new biostimulant;
 - specifications of various biostimulants
 - methods of drawing of samples and its analysis
 - minimum requirements of laboratory
 - method of testing of biostimulants
 - any other matter referred to it by the central government.

POOR SOIL HEALTH AND HIDDEN HUNGER

#AGRICULTURE #CROPPING PATTERNS



Despite achieving food self-sufficiency, India continues to face widespread malnutrition largely due to declining soil health and imbalanced fertiliser use.

INDIA'S PROGRESS IN FOOD SECURITY

Once dependent on food imports under the US PL-480 programme in the 1960s, India has today become self-sufficient in food production:

- In FY25, India exported 20.2 million tonnes (MT) of rice in a global market of 61 MT.
- India runs the **world's largest food distribution programme**, the **PM-Garib Kalyan Yojana (PMGKY)**, providing 5 kg of free rice or wheat per person per month to more than 800 million people.
- The **Food Corporation of India** holds about 57 MT of rice- the **highest stock in 20 years** and nearly four times the buffer norm of 13.54 MT as of July 1, 2025.

POVERTY HAS RECEDED SIGNIFICANTLY

The extreme poverty head count (those earning less than \$3/day at 2021 PPP) dropped from 27.1% in 2011 to just 5.3% in 2022.

PERSISTENT CHALLENGE OF MALNUTRITION

- Despite food self-sufficiency, malnutrition remains a major concern. The National Family Health Survey (NFHS 5) (2019-21) reports that:
 - 35.5% of children under five years of age are stunted,
 - 32.1% are underweight, and
 - 19.3% are wasted.

- One critical and often overlooked factor behind malnutrition is the health of soils.

STATUS OF INDIAN SOILS

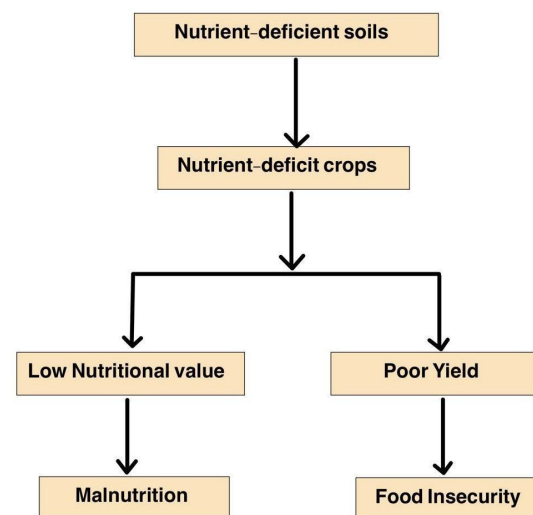
- Less than 5% of Indian soils have high or sufficient nitrogen (N).
- Only 40% have sufficient phosphate (P).
- Only 32 % have sufficient potash (K).
- Just 20% are sufficient in soil organic carbon (SOC) - a critical component of soil fertility and nutrient absorption
- Soils suffer from a deficiency of sulphur, as well as micronutrients like iron, zinc and boron.

IMBALANCED FERTILISER USE

- **For example**, In Punjab, nitrogen use exceeds recommendations by 61%, while potassium use is short by 89%, and phosphorus use is short by 8%.
- **Only 35-40% of Nitrogen from granular urea is absorbed by crops**, the rest is either released into the atmosphere as nitrous oxides or leaches into groundwater, contaminating it with nitrates and making it unsafe for consumption.

IMPACTS OF AGRICULTURE IN NUTRIENT-DEFICIENT SOILS

- Crops grown on nutrient-deficient soils often mirror those deficiencies, leading to a silent but pervasive form of malnutrition in humans. **E.g.**, Deficiency of zinc in soils results in low zinc content in cereals like wheat and rice, which in turn is linked to childhood stunting.
- Imbalanced use of fertilisers leads to soil degradation and suboptimal agricultural productivity.



The **Indian Council for Research on International Economic Relations** (ICRIER) and **OCF Nutricrops** (Moroccan state-owned fertiliser production company) have committed to collaborating to improve soil health in India. The collaboration aims to develop, implement, and scale region-specific, data-driven soil nutrition solutions that enhance crop productivity while improving their nutritional profile.

WAY FORWARD

To restore soil health and improve both crop and human nutrition, India needs a paradigm shift-

- Shift from indiscriminate fertiliser use to science-based soil nutrition management.
- Promote rigorous soil testing to guide fertiliser application.
- Implement customised fertilisation strategies aligned with specific soil and crop needs.
- Link to Sustainable Development Goals (SDGs) - Improving soil nutrition advances SDG-2 (Zero Hunger) and SDG-13 (Climate Action).

RBI'S FINANCIAL INCLUSION INDEX HITS 67 IN FY25

#FINANCIAL INCLUSION #REPORT AND INDEX



The Reserve Bank of India's **Financial Inclusion Index (FI Index)** improved to **67 in March 2025** from 64.2 in March 2024.

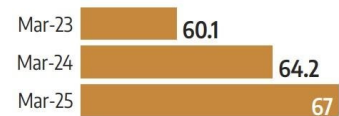
FINANCIAL INCLUSION INDEX

- Financial Inclusion Index (FI Index) captures the **extent of financial inclusion** across the country. The **comprehensive index** includes data from various sectors such as banking, investments, insurance, postal services, and pensions, making it a comprehensive measure of financial inclusion in the country.
- The index captures information on various aspects of financial inclusion in a single **value ranging between 0 and 100**, where 0 represents complete financial exclusion and 100 indicates full financial inclusion.
- The FI Index comprises of **three broad parameters**:
 - Access (having a weight of 35% in the index)

- Usage (weight 45%)
- Quality (weight 20%). Quality parameter captures the quality aspect of financial inclusion as reflected by financial literacy, consumer protection, and inequalities and deficiencies in services.
- The weight of each parameter comprises various dimensions, which are calculated based on a number of indicators.
- The Index has been **constructed without any base year** and as such it reflects cumulative efforts of all stakeholders over the years towards financial inclusion.
- RBI published the **first FI index in 2021** for FY21 (FI Index 53.9).

Improving parameters

RBI financial-inclusion index



Source: RBI

DECODING THE RISE IN FI INDEX

The improvement in FI Index in FY25 is largely due to usage and quality dimensions, reflecting **deepening of financial inclusion**, and sustained financial literacy initiatives. India has made significant strides in expanding financial inclusion through initiatives like:

- **Pradhan Mantri Jan Dhan Yojana:** Over 558 million accounts have been opened in rural and semi-urban areas. Notably, 311 million of these accounts have been opened in the name of female beneficiaries.
- **JAM Trinity:** The pillar of financial inclusion is JAM (Jan Dhan, Aadhaar, Mobile) trinity which has expanded the coverage of direct benefit transfers.
- Unified Payments Interface (UPI) and Aadhaar-enabled Payment System (AePS)
- Payments Banks; Business Correspondent Model
- Pradhan Mantri Mudra Yojana
- Pradhan Mantri Jeevan Jyoti Bima Yojana
- Pradhan Mantri Suraksha Bima Yojana
- Atal Pension Yojana
- Sukanya Samridhhi Yojana
- Stand Up India Scheme
- Financial Literacy Programmes like Pradhan Mantri Gramin Digital Saksharta Abhiyan.

IS GINI INDEX THE RIGHT WAY TO MEASURE INEQUALITY?

#POVERTY #INCLUSIVE GROWTH

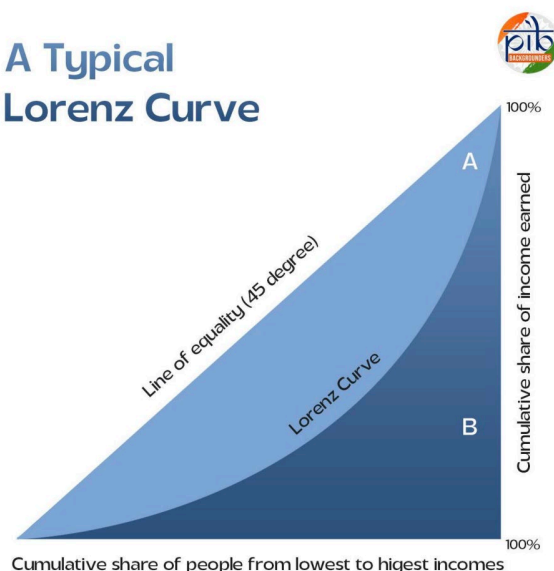
PRIMARY SOURCE *The Indian EXPRESS*

The government recently claimed that India is one of the most equal countries based on the Gini Index. However, the experts argue that this measure does not fully capture the real extent of inequality.

WHAT IS THE GINI INDEX?

- Gini Index or Gini Coefficient is a **statistical measure of inequality**. It quantifies how equally income, wealth or consumption is distributed across households or individuals in a country.
- It ranges in value from **0 to 100**. A score of 0 means perfect equality. A score of 100 means one person has all the income, wealth or consumption and others have none, hence absolute inequality. The higher the Gini Index the more unequal the country.
- Graphically Gini Index can be explained by the **Lorenz curve**.
 - A perfectly equal distribution will be shown by a diagonal line, while the actual distribution will be shown by the Lorenz curve.

A Typical Lorenz Curve

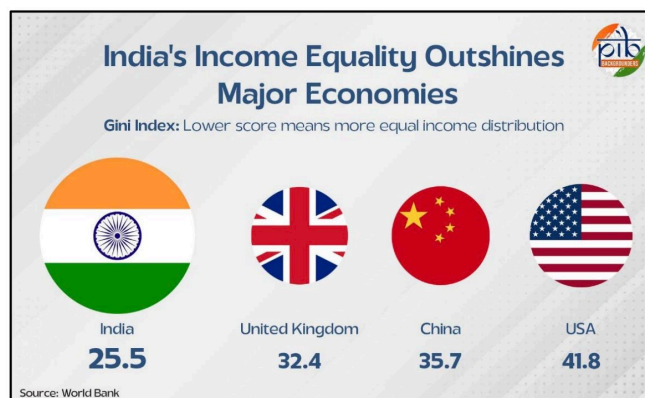


- The Gini Index tells us how far the Lorenz Curve is from the ideal equality line; the farther it is, the more unequal the society.

INDIA'S GINI INDEX TRENDS

- As per the World Bank's Poverty and Equity Brief- India ranks **fourth globally in income equality** with a Gini score of 25.5 (2022-23), after the Slovak Republic, Slovenia and Belarus.
- The index was measured at 28.8 in 2011, and reached 25.5 in 2022. This shows that **India has made consistent progress** in combining economic growth with social equity.
- India primarily uses a **consumption-based Gini Index** instead of an income-based one, relying on household surveys that measure inequality based on individuals' consumption levels rather than their actual incomes.

However, economists argue that **consumption-based Gini Index** fails to reflect actual levels of inequality, especially in India's context.



TRENDS FROM WORLD INEQUALITY LAB DATABASE

World Inequality Database which is based on income shows:

- Income inequality in India is rising from a Gini of 52 in 2004 to 62 in 2023.
- Wage disparity remains high, with the median earnings of the top 10% being 13 times higher than bottom 10% in 2023-24.
- The top 1% earn more than 22% of national income. The bottom 50% earn less than 15%. India's inequality is now worse than colonial levels.

LIMITATIONS OF CONSUMPTION-BASED MEASURES

- **Underestimates Inequality:** Rich people consume proportionally less and save more of their income. Poor

people spend nearly all of their income leading to less visible inequality in consumption data.

- **Fails to capture Wealth Inequality:** Wealth disparities such as those in property or financial assets are ignored.
- **Affected by Public subsidies:** Free ration, subsidies etc. improves consumption data but may not always lower inequality in real life.

Thus, it is misleading to compare India's Consumption based Gini Index value with that of other countries, which use an income based Gini.

LIMITATIONS OF THE SURVEY DATA

- Differential Non-response Bias: High-income individuals often decline to participate in surveys.
- Sampling Errors: Probability of randomly including ultra-rich in a small survey is low.
- Surveys largely capture the middle-income majority. But most inequality is driven by the top 1%, who are missing from survey samples.

WAY FORWARD

- Shift from a purely consumption-based approach to include income-based inequality measures, aligning with global standards.
- Combine household survey data with income tax data to better capture top incomes and reduce underestimation.
- **Use Alternative Indicators** like Palma Ratio. Palma Ratio measures the ratio of the richest 10% of the population's share of national income divided by the poorest 40% 's share.

EMPLOYMENT-LINKED INCENTIVE (ELI) SCHEME

#GOVERNMENT POLICIES #EMPLOYMENT



Union Cabinet has approved the **Employment Linked Incentive (ELI) Scheme** aimed at addressing the challenges of unemployment and jobless growth.

EMPLOYMENT-LINKED INCENTIVE (ELI) SCHEME

- ELI Scheme is a part of the Prime Minister's package of five schemes to facilitate employment, skilling, and other opportunities for 4.1 crore youth.

- With an outlay of ₹99,446 crore, ELI Scheme aims to incentivise the creation of more than 3.5 crore jobs over two years.

Objectives:

- Create additional employment in the formal sector and sustain it.
- Promote employability and formalisation of the workforce.
- Complement National Manufacturing mission.
- Enhance social security of the workforce.

KEY HIGHLIGHTS OF THE SCHEME

BENEFITS FOR FIRST-TIME WORKERS

- ELI scheme will benefit individuals entering the workforce for the first time and registered with the Employees' Provident Fund Organisation (EPFO).
- Eligible employees, those earning up to ₹1 lakh/month, will receive an **EPF-based wage incentive of up to INR 15,000** disbursed in two stages.
- The first half will be paid after six months of continuous service, while the second half will be released upon completing one year of service and a financial literacy program.

INCENTIVES FOR EMPLOYERS GENERATING JOBS

- Companies registered with EPFO that hire additional staff earning up to ₹100,000 per month will receive a **monthly incentive of up to ₹3,000 per employee** for a period of two years.
- For manufacturing units, this support will continue through the third and fourth years as well.
- Eligibility criteria include the hiring of at least two new employees by establishments with fewer than 50 employees, and a minimum of five new hires for those with 50 or more employees.
- All new hires must remain continuously employed for at least six months to qualify.
- **Coverage Period:** Valid for jobs created between August 1, 2025, and July 31, 2027.

SIGNIFICANCE OF THE SCHEME

- Addresses the challenge of jobless growth by directly linking fiscal incentives to net employment generation.
- Encourages a shift from informal to formal employment, thereby enhancing social security coverage, tax base, and compliance with labour laws.

- Targets first-time entrants, helping reduce structural unemployment and leveraging demographic dividend in the economy.
- Encourage employers to create sustained new employment, particularly in the manufacturing sector.
- Boosts aggregate demand via higher household income and consumption.
- Supports labour-intensive manufacturing, enhancing employment elasticity.

INDIA UNVEILS ALUMINIUM AND COPPER VISION DOCUMENTS

#MINERAL RESOURCES #MANUFACTURING



India unveiled the Aluminium and Copper Vision documents at the international conference of **World Mining Congress (WMC)**. The conference was hosted by the Indian National Committee of the WMC in Hyderabad, India.

ALUMINIUM VISION DOCUMENT

- **Status:** India has an untapped potential in the aluminium sector. Despite being the **world's second-largest producer**, India contributes only 6% to global output.
- **Key Targets:**
 - Scale up aluminium production six-fold by 2047
 - Expand bauxite production capacity to 150 million tonnes per annum (MTPA)
 - Double National aluminium recycling rate
 - Adopt low-carbon technologies for sustainable production
 - Strengthen raw material security through targeted policy reforms and institutional frameworks.
- **Significance:** Support India's shift towards clean energy, electric mobility (EVs), and sustainable infrastructure development.

• **Bauxite** (a sedimentary rock) is the primary ore of Aluminium. **Odisha** is India's largest bauxite-producing state and has the largest bauxite reserves.

• In FY23, Odisha produced 17.4 million tonnes of Bauxite which accounts for ~73% of the nation's share.

COPPER VISION DOCUMENT

- Copper has a vital role in India's energy transition, infrastructure growth, and green technology. It is an **essential input** in solar panels, EVs, turbines, electricity grids, semiconductors, undersea cables, and munitions.
- The vision document anticipates a six-fold increase in the demand of Copper by 2047.
- **Key Targets:**
 - Addition of 5 million tonnes per annum of smelting and refining capacity by 2030.
 - Scaling up secondary refining and enhance domestic recycling
 - Reduce dependence on open-market imports by securing overseas mineral assets through global partnerships.

• Copper ore is typically found in the Earth's crust in the form of copper minerals, such as chalcopyrite, bornite, malachite, chalcocite etc.

• Copper was added to **India's 30 critical minerals list in 2023** and is supported by the National Critical Mineral Mission.

• **Domestic ore production** in FY24 was 3.78 million tonnes. India's copper reserves are mainly located in Rajasthan, Madhya Pradesh and Jharkhand.

• **India is reliant on imports** to meet its demand. India **imported raw copper ores** and concentrates worth US\$ 3.3 billion in FY23, largely from Chile, Indonesia, Australia, and Peru.

OFFSHORE AREA ATOMIC MINERALS CONCESSION RULES 2025

#MINES AND MINERALS



The Ministry of Mines, in coordination with the Department of Atomic Energy (DAE), have notified the **Offshore Area Atomic Minerals Concession Rules, 2025**. The new rules seek to

regulate offshore atomic mineral mining for energy security and strategic control.

OFFSHORE AREA ATOMIC MINERALS CONCESSION

RULES 2025

- **Purpose:** To regulate the award of exploration licences and production leases for atomic minerals such as Uranium, Thorium, and other radioactive elements in the country's offshore areas, including its territorial waters and exclusive economic zones (EEZs)
- **Nodal Authority:** The DAE and the Atomic Energy Regulatory Board will serve as the nodal oversight agencies, ensuring compliance with radiological safety and strategic protocols.

KEY HIGHLIGHTS: OFFSHORE AREA ATOMIC MINERALS CONCESSION RULES 2025

- **Only Central Government Agencies, State-owned enterprises, or government-nominated companies** can be awarded composite licences or mining leases.
- **Foreign firms barred from exploration activities** unless subcontracted under highly-restrictive guidelines, and only with prior security clearance from Ministries, including Defence, Home and Environment.
- **Exploration will be allowed without a licence**, but only for notified government agencies.
- **Any later discovery of Atomic Minerals** above threshold grades, as defined in alignment with the Atomic Mineral Concession Rules, 2016, **must be reported to the Directorate of Atomic Minerals Exploration and Research.** Upon reporting a significant discovery, the government may immediately reserve the block for National use.
- **The government reserves the right to revoke or deny licences** if discoveries are deemed strategically sensitive or exceed the threshold grade. The Central Government can directly acquire such sites if needed for strategic reasons.
- **Explorers may be compensated only** for actual expenses incurred, discouraging speculative private activity.

CAN GI TAG PREVENT CULTURAL MISAPPROPRIATION?

#TRADE POLICIES #INTELLECTUAL PROPERTY RIGHTS

PRIMARY SOURCE THE HINDU

Recently, at its Spring/Summer 2026 menswear show in Milan, Italian luxury brand **Prada** unveiled footwear inspired by **India's Geographical Indication (GI) tagged Kolhapuri chappals**, sparking accusations of 'cultural misappropriation'.

WHAT IS A GI TAG?

- Geographical Indications of goods refer to the **place of origin of a product.**
- GI tags are a form of **Intellectual Property Rights (IPR)** that identifies goods as originating from a specific country, region or locality, where their distinctive qualities, characteristics, or reputation are essentially linked to that 'place of origin'.
- **Awarded by:** Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry.

India currently has over **650 registered GI-tagged goods**, including Chanderi sarees (Madhya Pradesh), Madhubani painting (Bihar), Pashmina shawls (J&K), Kancheepuram silk (Tamil Nadu), and Darjeeling tea (West Bengal).

KEY FEATURES OF GI REGISTRATION

- Unlike trademarks, which are owned by enterprises, **GIs are public property** belonging to the producers of the concerned goods and cannot be assigned, transmitted or licensed.
- **GI registration is given to an area**, not a trader. Once a product gets the registration, traders dealing in the product can apply to sell it with the GI logo.
- Any trader's body, association, or organisation can apply for a GI tag. The applicants need to prove the uniqueness of the item with historical records and a complete breakdown of how the product is made. Authorised traders are each assigned a **unique GI number.**
- Raw materials for such products do not have to come from that region (unless it is an agricultural tag). **E.g.,** Leaf in Banarasi paan is not grown in Varanasi; it comes from Bihar, West Bengal, or Odisha.

SIGNIFICANCE OF GI TAG

GIs serve as a powerful marketing tool, driving rural development, boosting exports, enhancing consumer

confidence, and preserving 'cultural knowledge' of local communities, farmers and indigenous groups.

CAN AN UNAUTHORISED TRADER SELL THE GI PRODUCT?

- Legal protection of GIs stem from international instruments like:
 - Under the **Paris Convention for the Protection of Industrial Property** (1883) GIs are covered as an element of IPRs.
 - Clearer definition under the **Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement, 1995**.
- India, as a **TRIPS signatory**, enacted the Geographical Indications of Goods (Registration and Protection) Act, 1999, which came into force in 2003. The Act provides for GI registration, enforcement of rights, prohibition of unauthorised use and penalties for infringement.

- If any unauthorised trader tries selling the product under that name, they can be prosecuted under the **Geographical Indications of Goods (Registration and Protection) Act, 1999**. However, GI rights are primarily 'territorial' and consequently limited to the country (or region) where protection is granted. At present, no automatic 'world' or 'international' GI right exists.

WAY FORWARD

Indian traditional products have time and again suffered exploitation by global corporations, to prevent such cases in the future:

- **Expand the Traditional Knowledge Digital Library** to include wider traditional grassroots expressions.
- **Make a 'searchable database'** to allow brands to conduct due diligence and searches to identify right holder communities for collaboration.

PRACTICE QUESTIONS

MCQS

Q1. Consider the following statements about biostimulants:

1. They are classified as fertilisers under the Fertiliser Control Order, 1985.
2. They include pesticides and plant growth regulators.
3. They can be derived from seaweed or plant-based waste.

Which of the statements given above is/are correct?

- (a) 1 and 3 only (b) 2 and 3 only
(c) 1, 2, and 3 (d) 3 only

Q2. Consider the following statements with respect to Soil Health in India:

1. Only about 20% of tested soils are sufficient in organic carbon.
2. Nitrous oxide is less potent than carbon dioxide in terms of greenhouse effect.
3. The Soil Health Card Scheme is implemented by the Ministry of Health and Family Welfare.

Which of the statements is/are correct?

- (a) 1 only (b) 1 and 2 only
(c) 1 and 3 only (d) 1 only

Q3. With reference to the Offshore Area Atomic Minerals Concession Rules, 2025, consider the following statements:

1. Only Private Indian Companies can be awarded mining leases for offshore atomic minerals.
2. Exploration without a licence is permitted for notified government agencies.
3. The Department of Atomic Energy and the Atomic Energy Regulatory Board are the nodal oversight authorities.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

Q4. Which of the following can directly lead to an increase in private investment in a demand-constrained economy?

1. Increase in real wages
2. Increase in corporate profits
3. Increasing repo rate
4. Rise in domestic consumption demand

Select the correct answer using the code below:

- (a) 1 and 4 only (b) 2 and 3 only
(c) 1, 2 and 3 only (d) 1, 3 and 4 only

Q5. With reference to the Employment Linked Incentive (ELI) Scheme, consider the following statements:

1. It provides wage support to first-time employees entering the formal workforce.
2. Employers in all sectors are eligible for incentives for up to four years.
3. Employees earning up to ₹1 lakh per month are eligible under the scheme.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 1 and 3 only
(c) 2 and 3 only (d) 1, 2 and 3

DESCRIPTIVE QUESTIONS

Q1. Food security in India must now evolve from calorie sufficiency to nutritional security. Discuss in the context of soil health and fertiliser use patterns in India.

Q2. The rise of technical textiles marks a shift in India's manufacturing strategy from tradition to innovation. Discuss.

Answers: 1-a, 2-a, 3-b, 4-a, 5-b

CONSTITUTION, POLITY AND GOVERNANCE

GS PAPER (PRELIMS) & GS PAPER II (MAIN)

VICE PRESIDENT OF INDIA RESIGNS MID-TERM

#EXECUTIVE

PRIMARY SOURCE 

Mr. Jagdeep Dhankhar, 14th Vice President of India, has tendered his resignation with immediate effect citing health reasons.

VICE PRESIDENT RESIGNS MID-TERM

- Jagdeep Dhankhar assumed the Office of Vice President in August 2022.
- He is **only the third Vice-President** in India's history to resign before completing his term. Earlier V.V Giri and R. Venkatraman stepped down to contest presidential elections.

WHO PERFORMS THE VICE PRESIDENT'S DUTIES NOW?

- The Constitution does not provide for an acting Vice President.
- However, since the Vice-President is also the **ex-officio Chairman of the Rajya Sabha**, the Deputy Chairman, currently Harivansh Narayan Singh, will preside over the House in his absence.

WHEN WILL THE ELECTIONS BE HELD?

- In the case of the President, the Constitution requires that a vacancy be filled within six months. But for a Vice Presidential vacancy, there is **no such fixed deadline**. The only requirement is that the election be held "as soon as possible" after the post falls vacant.
- The Election Commission of India will announce the schedule. The poll is conducted under the Presidential and Vice Presidential Elections Act, 1952.

- As per convention, the Secretary General of either House of Parliament is appointed as the Returning Officer, in rotation.

HOW LONG WILL THE NEW VICE PRESIDENT SERVE?

The elected candidate will serve a **full five-year term** from the date of assuming office- not just the remainder of Dhankhar's tenure.

HOW IS THE VICE PRESIDENT ELECTED IN INDIA?

- The Vice President is elected by an **electoral college** made up of members from **both Houses of Parliament** (Lok Sabha and Rajya Sabha) including nominated members.
- Unlike in a Presidential election, **state legislatures do not participate**.
- Voting is held in Parliament House in New Delhi by **secret ballot**, using the system of **proportional representation** with a **single transferable vote**.
- Each Member of Parliament (MP) casts a vote by ranking candidates in order of preference. **All votes carry equal value**.
- To be declared elected, a candidate must reach a **required minimum number of votes**- called the quota. This is calculated by dividing the total number of valid votes by two and adding one (fractions, if any, are ignored).
- If no candidate crosses the quota in the first round, the one with the fewest first-preference votes is eliminated, and their votes are transferred to the remaining candidates based on second preferences. The process continues until one candidate crosses the quota.

WHAT ARE THE ELIGIBILITY CRITERIA FOR VICE PRESIDENTIAL CANDIDATES?

A person contesting for the post of Vice President must be:

- A citizen of India

CONSTITUTION, POLITY AND GOVERNANCE

- At least 35 years old
- He must be qualified to be elected to the Rajya Sabha, and registered as an elector in any parliamentary constituency.
- He must not hold any office of profit under the central or state governments, except positions like President, Governor, or Minister.

SPECIAL INTENSIVE REVISION IN BIHAR: LEGAL BASIS AND CRITICISM

#ELECTIONS REFORMS

PRIMARY SOURCE | THE HINDU

The Election Commission of India (ECI) has initiated a **Special Intensive Revision (SIR) of the electoral rolls in Bihar** ahead of the upcoming Legislative Assembly elections. ECI has defended its authority to require electors to prove citizenship through fresh documentation as part of the SIR exercise.

WHAT IS THE SIR (SPECIAL INTENSIVE REVISION)?

- A process initiated by the ECI to revise and verify electoral rolls. Electoral roll (voter list) is an official list of all eligible voters in a particular constituency who are entitled to vote in elections.
- **Aim:** To ensure that the voter list is accurate, inclusive, and free from discrepancies by allowing new registration, deletions, and modifications.

LEGAL BASIS

- **Article 326:** Mandates that only Indian citizens can be registered as Voters. ECI asserted that it has the authority to require individuals to submit relevant documents to prove citizenship and eligibility under Article 326.
- **Article 324** vests the ECI with the power to supervise and control the preparation of electoral rolls and conduct of Elections.
- **Section 21 of the Representation of the People (RP) Act, 1950** empowers the Election Commission (EC) to undertake a special revision of electoral rolls at any time, citing reasons in writing.
- **Section 15 of the Representation of the People Act, 1950** mandates the preparation of electoral rolls “under

the superintendence, direction and control” of the ECI, Representation of the People Act, 1950 (RPA).

- **Registration of Electors Rules, 1960:** Permit summary and intensive revisions.

However, the term “intensive” is not mentioned in the Representation of the People Act, and the rules do not define it clearly, raising questions about the statutory backing of the SIR.

WHY HAS AN SIR BEEN INITIATED?

- The EC observed **large-scale additions and deletions in electoral rolls** over the past two decades, primarily due to rapid urbanisation and migration, raising the risk of duplicate and inaccurate entries.
- **ECI is constitutionally obligated** to ensure that only eligible citizens are enrolled in the electoral rolls. Accordingly, the EC has decided to carry out an SIR for the entire country, starting with Bihar. The last such SIR was carried out for Bihar in 2003.
- **The qualifying date is 1 July, 2025.** Any citizen who is 18 years or older as of July 1, 2025, and meets all other eligibility criteria, is entitled to be included in the updated electoral roll.

PROS OF THE SPECIAL INTENSIVE REVISION (SIR)

- **Help to eliminate duplicate entries,** ineligible voters, and ensure only citizens who are ordinarily resident are included. The process adheres to provisions in the RP Act and Registration of Electors Rules (RER), ensuring **only genuine residents are registered** in a constituency.

NO SIR, PLEASE

The key objections against the special intensive revision (SIR) of the voter list in Bihar

- **Estimates suggest** 25-30 million people may lack required documents, potentially excluding one-third of adult population. Disproportionate effect on Muslims, Dalits, migrant workers and rural poor
- **Exclusion of documents** like Aadhaar, ration card and MGNREGA card, which the SC flagged on July 10
- **Lack of prior consultation** with political parties and

deviation from established ECI practices

- **Exercise conducted** just 4-6 months before Bihar polls, unlike historical precedent of 2-3-year gap
- **Unrealistic 30-day** timeline for verifying 79 million voters during monsoon season in the flood-prone state
- **Critics label** it “National Register of Citizens through backdoor” due to citizenship verification requirements

CONSTITUTION, POLITY AND GOVERNANCE

- Aadhaar is rightly excluded as a document of registration as it is not a proof of citizenship or date of birth, aligning with constitutional and legal standards.
- Reliance on official documents like caste certificates, family registers, and land records is seen as a more legally sound approach to validate identity and citizenship.

KEY ISSUES AND CRITICISM OF SIR

• **Burden of Proof on Electors:**

- SIR shifts the burden of proving citizenship onto all existing electors, despite their prior registration through due process.
- A complaint-based mechanism already exists to delete non-citizens, but the ECI has provided no data showing its failure due to large-scale inclusion errors. In absence of such evidence, the ECI's claim that only SIR-based entries are authentic is unsubstantiated and legally weak.

- **Weak Statutory Basis:** The Representation of the People Act, 1950 makes no distinction between electors added through summary or intensive revisions. The term "intensive" is absent from the Act and lacks a clear definition even in the 1960 Rules. Thus, the legal foundation of SIR is vague, raising concerns over its legitimacy and enforceability.

• **Arbitrary Privileging of 2003 Electoral Roll:**

- ECI rejects EPIC as proof of citizenship but exempts electors in 2003 rolls and their children from furnishing documents, relying only on name extract. This contradiction is legally questionable, especially when no proof of house-to-house verification or deletions of illegal migrants in 2003 is provided.
- Absence of 2003 SIR guidelines in the affidavit further weakens the claim, making the preferential treatment of 2003 entries arbitrary and unverified.

• **Questionable use of NRC-Based Citizenship Criteria:**

- SIR 2025 applies citizenship verification norms from the CAA 2003, requiring extensive documentary proof (birth details of voter and parents). However, the constitutionality of CAA 2003 is still under Supreme Court review, and NRC, which the law envisaged, has not been implemented anywhere except Assam.
- Rules under CAA 2003 were notified even before the Act was passed, casting doubt on their legality. Even

the Registrar General of India has not ordered NRC initiation.

- Hence, ECI lacks legal authority to enforce NRC-based citizenship tests via SIR in Bihar.

• **Arbitrary Exclusion of Aadhaar and Ration Cards as Eligibility Documents:**

- ECI rejected Aadhaar as proof of citizenship, despite voluntarily collecting Aadhaar numbers in SIR 2025 forms. This is inconsistent, especially since ECI has no statutory mandate to test citizenship.
- Ration cards were excluded citing the prevalence of forgeries, but no similar objection was raised against residence certificates, despite over 13.89 crore certificates issued in Bihar (2011-2025), far more than the state's total population.

• **Transparency Concerns:**

- The ECI's counter-affidavit claims that over 90% of Bihar's 7.89 crore electors have already submitted enumeration forms under the SIR exercise. However, the affidavit does not reveal how many of those forms were submitted with the required documents.
- It admits that forms submitted "with or without documents" will be included in the draft electoral roll, to be published on August 1, 2025. Document verification has been postponed, and scrutiny by electoral registration officers will only happen after the draft is published.

• **Operational & Implementation Issues in SIR:**

- Till 22 July around 21.35 lakh (2.7%) electors were yet to receive and submit their enumeration forms. As of July 24, around 7 lakh electors (0.9%) had not submitted enumeration forms.
- Major political parties of Bihar were requested by the ECI to connect with the remaining electors, through their functionaries and booth level agents.
- Inability of the ECI in ensuring 100 % coverage through its own machinery of booth level officers (BLOs) and volunteers further exposes the impracticality of the SIR schedule.

• **Unverified Mass Exclusions:**

- Over 53 lakh electors (6.7%) were not found at their addresses, including 21.6 lakh deceased and 31.5 lakh migrated voters.
- The absence of constituency-wise data and pending verification raises concerns about error-prone

CONSTITUTION, POLITY AND GOVERNANCE

deletions that may disproportionately affect certain demographics and constituencies.

WAY FORWARD

- The EC should ensure that adequate safeguards are put in place for the completion of the exercise without errors.
- The Booth Level Agents (BLAs) should actively participate to prevent errors of omission or addition.
- Based on ground realities observed during the first phase, the EC should relax or modify documentation norms during the claims and objections phase, ensuring no eligible citizen is excluded.
- Ensure that no eligible citizen is excluded due to their inability to produce any document from the list of valid documents.
- Do not remove long-term migrant workers from their home constituency rolls if they wish to vote there and continue to have familial or property links.
- As per the 2010 RP Act amendment, NRIs can vote from their Indian constituency of origin; a similar flexible approach should be considered for internal migrants.
- Address the issue of duplicate voter IDs for the same person in different constituencies through Aadhaar seeding.

NEED TO SAFEGUARD THE RIGHT TO VOTE

#ELECTORAL REFORMS #RIGHTS ISSUES

PRIMARY SOURCE THE HINDU

The Supreme Court has directed the Election Commission of India to accept **Aadhaar, voter ID, and ration cards** as valid documents for the Special Intensive Revision (SIR) of Bihar electoral rolls.

However, ECI disagreed with the SC's view on using Aadhaar, voter ID, and ration cards for Bihar's electoral roll SIR. EC stated these documents are unreliable.

UNIVERSAL ADULT SUFFRAGE (UAS) IN INDIA

- **Article 326** of the Constitution grants every adult citizen the right to vote, regardless of gender, caste, religion, education, or property.
- **61st Constitutional Amendment 1989:** Initial threshold of 21 years of age for being eligible to vote was lowered to 18 by the 61st CAA.

- **Kesavananda Bharati v. State of Kerala (1973)** established democracy as part of the 'basic structure' doctrine. For this ideal to function meaningfully, people should be able to freely decide the fate of their government (through voting), an unassailable right that shapes governance.
- Two Key laws operationalised this inclusive vision:
 - **Representation of the People Act 1950** which governs the preparation and revision of electoral rolls.
 - **Representation of the People Act 1951 Act** which regulates election conduct, candidature, and electoral offences.
- **Under Article 324** the EC serves as a constitutional guardian of elections, with powers of superintendence, direction, and control. EC's key duty is to prepare accurate electoral rolls, guided by Section 19 of the RPA 1950, which mandates that any citizen aged 18 or above, ordinarily resident in a constituency and not disqualified, is entitled to be registered.

IS VOTING A FUNDAMENTAL RIGHT IN INDIA?

- **Constituent Assembly view:** Dr. B.R. Ambedkar and K.T. Shah proposed including the right to vote as a fundamental right; the Constituent Assembly's Advisory Committee ultimately rejected the idea.
- **Kuldip Nayar v. Union of India (2006):** The five-judge bench of the SC held that the 'right to elect' is a **statutory** right under Section 62 of the RPA 1951, and not a fundamental or constitutional right.
- **Rajbala v. State of Haryana (2016):** The two-judge bench of SC described the 'right to vote' as a **constitutional** right, though not a fundamental right. However, the ruling of the larger-bench in the Kuldip Nayar judgment prevails.
- **Anoop Baranwal v. Union of India (2023):** The SC declined to pronounce on the issue, noting that it had already been settled by the Kuldip Nayar judgment.
 - In the minority view (dissent opinion), the Justice asserted that the '**right to vote**' is an expression of Article 19(1)(a) and reflects the essence of Article 21.
 - However, the 'right to elect' continues to be recognised as a **statutory right**.

WHY DOES ELECTORAL ROLL ACCURACY MATTER?

- **Inaccuracies in Electoral Roll** like mass omissions, ineligible inclusions, duplicates, or incorrect entries

undermine the “one person, one vote” principle by enabling impersonation, disenfranchisement, or dilution of votes, which ultimately distorts the people’s mandate.

- **The Bihar SIR controversy** and broader electoral reform debates highlights the core democratic truth:
 - India’s democracy depends on electoral rolls that are accurate, inclusive, and accessible.
 - Purification of rolls is necessary because just as the exclusion of an eligible voter undermines democracy, so does the inclusion of an ineligible name.

Thus, EC must complete the exercise with a careful balance between genuine vigilance and inclusion to uphold the fairness of the process.

STATES CANNOT DEMAND DELIMITATION CLAIMING PARITY WITH J&K: SC

#FEDERALISM #DELIMITATION

PRIMARY SOURCE THE HINDU

The Supreme Court dismissed a petition seeking the Delimitation of Assembly Constituencies in Andhra Pradesh and Telangana on grounds of parity with the recent delimitation exercise in Jammu and Kashmir (2022).

WHAT IS A DELIMITATION EXERCISE?

- **Delimitation refers** to the process of redrawing the boundaries of constituencies or electoral areas. This ensures that each constituency has a roughly equal number of voters, based on the principle of ‘one vote, one value’.
- The Constitution under **Article 82 mandates delimitation after each census** to readjust the seats as per changes in population. (Article 82 for Lok Sabha and Article 170 for State Legislative Assemblies).
- After each census, a **readjustment is to be made in:**
 - allocation of seats in the Lok Sabha to the States
 - division of each State into territorial constituencies.
- **Such an exercise was carried out** after the 1951, 1961 and 1971 Census.
- The **42nd Constitution Amendment Act, 1976** put the delimitation exercise on freeze for 25 years until the

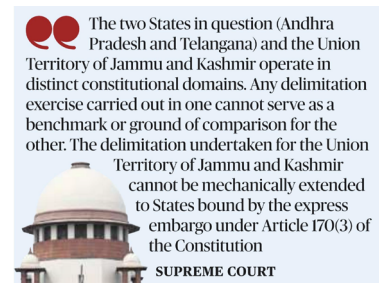
2001 Census to encourage population-limiting measures.

- Further, **84th Amendment Act, 2001** put on hold the delimitation exercise again until the first Census after 2026.

The Supreme Court rejected the petition as **Article 170 (3)** imposes a freeze on delimitation of State Legislative Assembly seats until the first Census after 2026.

What Article 170 (3) says?

Article 170 deals with the composition of Legislative Assemblies.



- **Article 170 (1):** Subject to the provisions of Article 333, the Legislative Assembly of each State shall consist of not more than 500, and not less than 60 members chosen by direct election from territorial constituencies in the State.
- **Article 170 (2):**
 - Each State must be divided into territorial constituencies in such a way that the population per seat is roughly equal across the State. This division is based on the most recent census for which final figures have been published.
 - Until the figures of the first post-2026 census figures are published, the term “last census” will mean the 2001 Census. (84th Constitutional Amendment Act, 2001)
- **Article 170 (3):** Until the relevant figures for the first Census taken after the year 2026 have been published, it shall not be necessary to readjust:
 - Total number of seats in the Legislative Assembly of each State as fixed by the Delimitation of Parliamentary and Assembly Constituencies Order, 1976; and
 - Division of each State into territorial constituencies as made by that Order.

WHY WAS DELIMITATION ALLOWED IN JAMMU & KASHMIR?

- Jammu & Kashmir became a Union Territory in 2019 after the abrogation of Article 370. As a Union Territory, it is not bound by the freeze under Article 170(3).

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- The delimitation exercise in 2022 was based on the 2011 Census, following the Jammu & Kashmir Reorganisation Act, 2019.

The Supreme Court also held that:

- Allowing delimitation for Andhra Pradesh and Telangana through a judicial dictum would foster discontent among other States and breed inequality.
- Granting such a relief would prompt unabated challenges from other similarly situated regions. In particular, the four NorthEastern States- Arunachal Pradesh, Assam, Manipur, and Nagaland, which were expressly excluded from the scope of delimitation by way of a Central notification in 2021.

NEED TO PROTECT INDIA'S LINGUISTIC SECULARISM

#SECULARISM #INDIAN CONSTITUTION

PRIMARY SOURCE THE HINDU

Recently, there have been a few instances of linguistic violence against non-Marathi speakers in Maharashtra. India's diversity in religion and language is one of the primary factors which protects the secular character of the nation, ensuring its unity and integrity.

INDIAN SECULARISM

- Unlike Western secularism, which calls for a complete separation of religion and state, Indian secularism is rooted in tolerance and equality **granting all citizens the Freedom of Conscience and Religion.**
- The state has **no official religion**, making India truly secular.
- Indian secularism also addresses linguistic pluralism. It is **neither pro-religion nor anti-religion or language**, but actively seeks to prevent communalism, whether religious or linguistic, making diversity a foundation of national unity.

CONSTITUTIONAL PROVISIONS TO PROTECT LINGUISTIC DIVERSITY

As per the data of Census 2011, India has a total of 121 languages and 270 mother tongues. Such diversity needs to be protected; each and every language irrespective of region or State must be shown respect. This is the only way to protect India's linguistic secularism.

- In order to protect linguistic diversity, the **Eighth Schedule** of the Constitution includes 22 languages.

- **Article 29:** Incorporates that any section of citizens of India including minority groups shall have the right to protect their language, script or culture, and that language cannot be the ground for discrimination. No State is permitted to go out of it in the name of a distinct language or culture.

- **Article 343:** As India is a Union of States, Article 343 enshrines that the official language of the Union shall be Hindi in Devanagari script. The states are free to choose their own official language.

India's religious and linguistic diversity is a key pillar of its secular character, ensuring unity and integrity. However, these aspects can also become sources of conflict, as seen in recent communal and linguistic tensions like in Maharashtra.

THREAT TO INDIA'S LINGUISTIC DIVERSITY: LINGUISTIC TENSIONS AND IDENTITY POLITICS

- Many Southern and North-eastern States have historically resisted the imposition of Hindi, fearing cultural and linguistic domination.
- Dravidian Movement in Tamil Nadu strongly opposed Hindi imposition, instead promoting Tamil and English as symbols of cultural pride and autonomy.
- Maharashtra has emerged as one of the most sensitive States on the language debate. The recent violence against non-Marathi speakers reflects identity politics, and not genuine concern for cultural protection.

India's secular fabric is deeply woven into its religious and linguistic diversity. Protecting this diversity is not merely a cultural or political obligation, but a constitutional imperative.

ARE EXISTING MECHANISMS EFFECTIVE IN PREVENTING CUSTODIAL VIOLENCE?

#HUMAN RIGHTS

PRIMARY SOURCE THE HINDU

The gruesome death of a security guard in **police custody** in Tamil Nadu is yet another grim addition to the long and growing list of **custodial deaths in India.**

EXISTING MECHANISMS TO PREVENT CUSTODIAL VIOLENCE IN INDIA

1. Constitutional Safeguards:

- **Article 21** guarantees the fundamental right to protection of life and personal liberty.
 - No person shall be deprived of their life except according to the **procedure established by law**.
 - It provides the right to **live with dignity** and free from any form of torture or cruel, inhuman, or degrading treatment.
- **Article 22(1)**: No person who is arrested shall be detained in custody without being informed of the grounds for such arrest.
- **Article 22(2)**: Every person who is arrested and detained in custody shall be produced before the nearest magistrate within a period of 24 hours of such arrest.
- **Article 20(3)**: No person accused of an offense shall be compelled to be a witness against themselves. Individuals cannot be forced to provide evidence or testimony that may incriminate themselves.

2. Statutory Safeguards:

- **Section 41A of CrPC**: Provides safeguards such as informing the accused of their rights and providing access to legal aid. It ensures that neither the accused's rights are deprived nor they are unfairly treated during and after the arrest.
- **Section 176(1) of CrPC**: Requires a Judicial Magistrate or Executive Magistrate to launch an investigation when a person passes away while in custody or any other location where the person is receiving institutional or state care.
- **Section 25 of Indian Evidence Act, 1872**: A confession made to a police officer is prohibited and cannot be admitted in evidence. The fundamental principle underlying is that a police officer may subject an arrested person to severe torture and force him to confess to the guilt of a crime that he may not have committed.

3. Judicial Guidelines:

- **D.K. Basu v. State of West Bengal (1997)**: The Supreme Court laid down strict guidelines related to custodial violence and deaths. These guidelines are to be followed in all cases of arrest and detention until legal provisions are made for the safeguard of a person in custody.

- **Prakash Singh v. Union of India (2006)**: The SC mandated the creation of police complaints authorities led by retired judges, at the State and district levels to address complaints against police misconduct.
- **Paramvir Singh Saini v. Baljit Singh (2020)**: The SC mandated the installation of CCTV cameras in police stations and lockups, and affirmed victims' right to access the footage.

Associated Challenges:

- **Lack of Sensitisation**:
 - Police personnel often normalise custodial violence as a necessary means to achieve justice, especially when the formal legal process is seen as slow and ineffective.
 - Public reaction to custodial violence is inconsistent and often shaped by the nature of the case.
- **Legal Issues**:
 - India **lacks a stand-alone domestic law** criminalising torture.
 - India has signed but **not ratified UNCAT** (United Nations Convention Against Torture). This reflects a lack of political will to implement international human rights obligations.
 - **Section 27 of the Indian Evidence Act, 1872** permits the use of material recovered (as evidence) as a result of confessions from the accused. This loophole enables the continued use of custodial torture to produce evidence that is admissible in court.
- **Weak Institutional Accountability**:
 - **Minimal compliance with the SC mandate (2020)** to install CCTV cameras in police stations. Acts of torture often occur outside police stations. Even where cameras are installed, the access to the footage is usually denied citing non-functionality of cameras.
 - **Absence of Police Complaints Authorities**: Most States have failed to establish these authorities. Even if they exist, their credibility is compromised by the inclusion of serving police officers as members.
 - **Lapses in Magisterial Oversight**: Magistrates often fail to fulfil their intended role, which includes scrutinising the grounds for arrest, physically examining the accused for signs of torture, and

CONSTITUTION, POLITY AND GOVERNANCE

engaging meaningfully with them to uncover any evidence of mistreatment.

- **Medico-legal examinations** are often reduced to a mere formality. This systemic failure contributes to the abysmally low conviction rates in cases of custodial torture and deaths.
- **Absence of authoritative data** on custodial violence. In the absence of accurate data, the accountability mechanisms remain weak.

Law Commission's 273rd Report (2017) recommends enacting a stand-alone **Anti-Torture law** in India and **ratification of the UN Convention against Torture**, amendments to the Code of Criminal Procedure (CrPC) 1973, and the Evidence Act, 1872.

NHRC GUIDELINES FOR POLICE REFORMS (2021)

- **Set up Police Complaints Authorities:** National Human Rights Commission (NHRC) has asked the Union Ministry of Home Affairs and the State Governments to set up the Authorities at the State/UT and district level, as per the judgment in Prakash Singh vs. Union of India, 2006. The status of compliance should be displayed on the websites of the Ministry and the State Home Departments.
- **Add Section 114 B to Indian Evidence Act, 1872:** Implement recommendations of the 113th report of the Law Commission to add Section 114 B to the Indian Evidence Act. This would ensure that in case a person sustains injuries in police custody, it is presumed that the injuries were inflicted by the police and the burden of proof to explain the injury lies on the authority concerned.
- **Make legal framework technology-friendly** to speed up the criminal justice system. Install CCTV cameras with night vision in all police stations immediately to ensure accountability.
- **Community Policing:** Involvement of trained social workers and law students with police stations as part of community policing and incorporating community policing in police manuals, laws and advisories.

WAY FORWARD

- **Set up district-level mental health units** with mandatory quarterly counselling, and refresher sensitisation courses for detainees and for officers. This will institutionalise mental wellness within law enforcement.

- **Reforms in Police training:** The curriculum needs a redesign to include human rights sensitisation, trauma-informed investigation methods and community policing models.
- **Implement robust training programmes** that not only equip police personnel with modern policing methods, but also sensitise them to their own implicit biases.
- **Technology as a safeguard:** CCTV cameras in areas where people are in custody should be operational, tamper-proof, and subject to real-time audits.
- **Comprehensive Anti-Custodial Violence Law** with time-bound investigation mechanisms, mandatory video documentation of interrogations, and civil society involvement in oversight.

*"Every custodial death not just marks the end of one life but also the **failure of the state's moral contract with its people.**"* To break this cycle, India needs to invest not just in policing but also in the **emotional, ethical, and structural reform of law enforcement.**

INDIA'S AVIATION SECTOR NEED REFORMS

#GOVERNANCE #AVIATION SECTOR

PRIMARY SOURCE THE HINDU

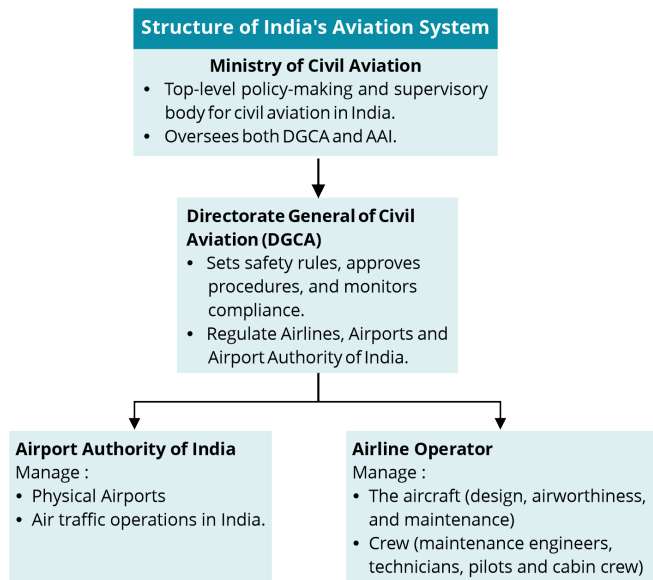
*The **Aircraft Accident Investigation Bureau's preliminary report** on the Air India Boeing 787 air crash in Ahmedabad was released recently. The **report remains inconclusive** with critical uncertainties on whether pilot action was inadvertent or deliberate.*

STRUCTURE OF INDIA'S AVIATION SYSTEM

- The Aviation System broadly involves multiple elements:
 - **Airline Operator:** The Aircraft (design, airworthiness, and maintenance) and the people who operate it (maintenance engineers, technicians, pilots and cabin crew) are the responsibility of the airline operator.
 - **Airports Authority of India:** While Airport infrastructure, Air traffic control systems and its personnel are the responsibility of the Airports Authority of India (AAI) and/or the Aerodrome operator.

CONSTITUTION, POLITY AND GOVERNANCE

- **Regulator:** Directorate General of Civil Aviation (DGCA)
 - DGCA regulates Airlines, Airports and Airport Authority of India (AAI).
 - It sets safety rules, approves procedures, and monitors compliance.



- **Supervisory Authority:** Ministry of Civil Aviation (MoCA)
 - It is the top-level policy-making and supervisory body for civil aviation in India.
 - It oversees both DGCA and AAI.

KEY ISSUES IN INDIA'S AVIATION SAFETY ECOSYSTEM

1. Systemic Neglect:

- **Aircraft Design and Airworthiness:** DGCA has limited internal technical capacity and relies heavily on foreign regulators such as the Federal Aviation Administration (US) and European Union Aviation Safety Agency (EU). This weakens India's self-sufficiency in evaluating airworthiness.
- **Aircraft Maintenance Standards:**
 - Aircraft Maintenance Engineers (AMEs) work under severe stress without duty time limits. Duty-time limitations recommended for AMEs by the court of inquiry following the crash in Mangaluru (2010) remain unimplemented.
 - The DGCA has allowed airlines to delegate AME tasks to less-qualified, lower-paid technicians- a cost-cutting move that undermines safety.
- **Pilot and Flight Crew Stress:**

- Airlines violate Flight Time Duty Limitations for pilots, and the DGCA grants exemptions which allow pilots who are fatigued to operate.
- The DGCA's unique NOC requirement restricts pilot mobility across airlines, increasing stress and enabling airlines to coerce pilots into breaching regulations.

• **Airline Operations:**

- Airlines prioritise profit over safety. Despite the DGCA suspending personnel for safety violations, airline officials often retain high positions, controlling operations.
- DGCA-appointed officers in airlines, who are expected to enforce compliance, often have no real authority, making accountability toothless.

- **Air Traffic Management:** The AAI faces a severe shortage of Air Traffic Controller Officers (ATCO). The provision to give licences to ATCO has not yet been implemented. Duty-time limitations for ATCOs, recommended by the Mangalore Court of Inquiry, remain unimplemented.

- **Silencing Whistle-Blowers:** Whistle-blowers are often demoted, transferred, or terminated, discouraging the reporting of critical safety issues in the AAI and airlines.

2. Regulatory Loopholes:

• **Violations of Inner Horizontal Surface (IHS) Norms**

- Thousands of illegal vertical obstructions have emerged within airport flight paths.
- Statutory safeguards like the Aircraft Act and Order 988 of 1988 were undermined by a non-statutory appellate committee starting in 2008. This committee, comprising officials from MoCA, DGCA, and AAI, approved dozens of unsafe buildings.
- Ironically, the same officials who approve unsafe structures are often responsible for judging safety complaints about them.

- **Judiciary has been inactive** on aviation issues, relying on the state's technical expertise on the subject.

WAY FORWARD

- Reform DGCA and AAI to improve transparency, technical strength, and accountability.
- Enact and enforce legal protection for employees who report safety concerns.
- Revoke and re-evaluate unsafe building approvals.

CONSTITUTION, POLITY AND GOVERNANCE

- Judiciary's conservative approach to valuing human life needs to change. It must address the deterioration in the aviation sector and hold authorities accountable.
- A genuine 'culture of safety' must permeate every layer of the Aviation System including fair employment terms and access to mental health care without punitive consequences.

Without immediate, bold reforms and a fundamental shift toward a genuine culture of safety, India's rapidly growing Aviation Sector risks further tragedies. The Judiciary, regulators, and policymakers must act in cohesion to bring out the necessary reforms.

ANIMAL BIRTH CONTROL RULES 2023

#GOVERNMENT POLICIES

PRIMARY SOURCE | The Indian EXPRESS

The Supreme Court observed that citizens who wished to feed stray dogs should consider doing so inside their own homes.

The case highlights the **relevance of the Animal Birth Control Rules 2023**, which aims to regulate feeding practices while balancing animal welfare and public safety.

ANIMAL BIRTH CONTROL RULES 2023

- Animal Birth Control Rules 2023 (ABC Rules) were notified under **The Prevention of Cruelty to Animals Act, 1960**.
- The Rules **seek to control stray dog populations through sterilisation, and to curb the spread of rabies** by vaccinating them.
- The Rules **lay down protocols** to ensure that the feeding of dogs respects both animal welfare and public safety.
- The Rules replaced the **Animal Birth Control (Dog) Rules, 2001**.
- These Rules use the expression "**community animals**" instead of "stray dogs"- recognising that these dogs are not ownerless intruders but territorial beings that inhabit and belong to their local environments.

RULE 20 OF THE ABC RULES 2023: FEEDING OF COMMUNITY ANIMALS

- If a resident feeds street animals, the Resident Welfare Association (RWA), Apartment Owners' Association, or

local body's representative must **arrange** designated **feeding spots**.

- Feeding spots must be away from public entry points, stairs, or play areas.
- The designated spaces must be kept clean and litter-free, and community dogs should be fed at an appointed time.
- The Rule also lays down a **dispute resolution mechanism** involving the Chief Veterinary Officer, Representatives of the Police, the District Society for Prevention of Cruelty to Animals, Organisations conducting Animal Birth Control, and the RWA.

CONSTITUTIONAL PROVISIONS

Article 51A(g) places a fundamental duty on citizens to have compassion for living creatures.

IMPORTANT COURT JUDGMENTS

- **In Jallikattu Case 2014 (Animal Welfare Board of India vs A. Nagaraja)**: The Supreme court ruled that animal life falls within the meaning of **Article 21** of the Constitution. The SC noted that all living creatures (including animals) have inherent dignity, right to live peacefully and the right to protect their well-being.
- **Bombay High Court in Sharmila Sankar v. Union of India (2023)** ruled in favour of residents who had faced opposition from their housing societies for feeding dogs. The court affirmed that the ABC Rules have **the force of law**. RWAs and societies cannot restrict the feeding of community animals or threaten or penalise individuals who do so.

The presence of dogs in residential areas cannot automatically be considered unlawful. Nor can those who feed them be considered offenders unless their actions violate specific behavioural and spatial guidelines set by the law.

MINISTRY BLOCKS 25 OTT PLATFORMS OVER 'OBSCENE CONTENT'

#GOVERNANCE #CENSORSHIP

PRIMARY SOURCE | THE HINDU

The Information & Broadcasting Ministry has directed the blocking of websites and Apps of 25 OTT platforms for

allegedly carrying obscene, vulgar, and in some cases, pornographic content.

MINISTRY BLOCKS OTT PLATFORMS OVER OBSCENE CONTENT

- The Information & Broadcasting Ministry has directed the blocking of websites and Apps of 25 OTT platforms for allegedly carrying obscene, vulgar, and in some cases, pornographic content.
- Utilising the provisions of the **Information Technology Act, 2000** and the **IT Rules, 2021**, notifications have been issued to various intermediaries to ensure that access to these sites and Apps is disabled.
- **The content hosted on these platforms was found to be in violation of:**
 - Section 67 of the IT Act, 2000; Section 67A of the IT Act, 2000
 - Section 292 of the Indian Penal Code
 - Section 4 of the Indecent Representation of Women (Prohibition) Act, 1986.
- The government had received **multiple public grievances** against these platforms, including the references from the **National Commission on Protection of Child Rights** (NCPCR) about content on platforms Ullu and ALTT.

LEGAL BASIS OF THE BAN

- **Section 69A of IT Act, 2000** empowers the government to block public access to any online information (block content on internet) in the interest of: (i) interest of sovereignty and integrity of India, (ii) defence of India, (iii) Security of the State, (iv) friendly relations with foreign States, (v) public order, (vi) for preventing incitement to the commission of any cognizable offense relating to above.
 - **Criticism:** The law does not have “decency and morality” as grounds for blocking information.

LEGAL PROVISIONS ON OBSCENITY IN INDIA

- **Section 67 of the Information Technology Act, 2000:** An offence is committed by a person who publishes or transmits any material which is lascivious or appeals to the prurient interest.
- **Section 67A of the Information Technology Act, 2000:** Punishment for publishing or transmitting material containing sexually explicit acts, etc. in **electronic form**.

- **Article 19(2) of Indian Constitution:** Allows the State to impose reasonable restrictions on freedom of speech and expression for reasons like- security of the state, public order, morality, etc. It provides constitutional backing to Section 69A of the IT Act, 2000.
- **Sections 292 and 294 of the Indian Penal Code** contemplate the selling, letting on hire, distribution or public exhibition of obscene matter.
- **Section 4 of the Indecent Representation of Women (Prohibition) Act, 1986:** Prohibition of publication or sending by post of books, pamphlets, etc., containing indecent representation of women.
- **IT Rules, 2021 (Intermediary Guidelines and Digital Media Ethics Code)** Mandates OTT platforms to:
 - Self-classify content into age-based categories
 - Set up Grievance Redressal Mechanisms
 - Adhere to a Code of Ethics.

CABINET APPROVES NATIONAL SPORTS POLICY 2025

#POLICIES AND INTERVENTIONS #SPORTS POLICY

PRIMARY SOURCE THE HINDU

The Cabinet has approved the National Sports Policy (NSP) 2025, which focuses on developing India as a strong contender for excellence in international sporting events, including the 2036 Olympic Games.

SPORTS SECTOR IN INDIA- GOVT. INITIATIVES AND POLICIES

Sports is a ‘State’ subject in the Indian Constitution.

- **1951:** India hosted the **first Asian Games** in New Delhi.
- **1954:** Government set up the **All-India Council of Sports** to advise on sports matters, support federations, and fund elite athletes.
- **1984:** India unveiled its **first National Sports Policy**. The NSP aimed to improve infrastructure, promote mass participation, and raise standards in elite sports. It also stressed the importance of integrating sports with education, which was formalised in the 1986 National Education Policy.

CONSTITUTION, POLITY AND GOVERNANCE

- **2000:** India created a dedicated **Ministry of Youth Affairs and Sports**.
- **2001:** A **revised National Sports Policy** was launched in 2001, setting clearer goals for mass participation and international excellence.
- **2011: National Sports Development Code** was introduced, aiming to regulate and professionalise **National Sports Federations**. It addressed governance, anti-doping, age fraud, betting, gender issues etc. but implementation remained the hurdle.
- **2014: Target Olympic Podium Scheme (TOPS)** provided elite athletes with coaching, nutrition, and infrastructure support.
- **2017: Khelo India** conducted youth talent identification across schools and universities
- **2019: Fit India Movement** promoted physical activity and fitness as a public health priority.
- **2025: NSP 2025** was announced as Khelo Bharat Niti - 2025.

NATIONAL SPORTS POLICY (NSP) 2025

The new policy will replace the existing framework of **National Sports Policy, 2001**, with an objective to make India among the top five sporting nations by 2047.

FIVE KEY PILLARS OF NSP 2025

- **Excellence on Global Stage:** It focuses on achieving the nation's excellence on the global stage by enhancing infrastructure, talent identification and international competitiveness.
- **Sports for Economic Development:** emphasises leveraging sports to boost industries such as tourism, manufacturing and sports technology.

- **Sports for Social Development** promotes inclusivity, health and education through sports, fostering societal cohesion.
- **Sports as People's Movement** seeks to engage communities in physical activities, making sports a cultural cornerstone.
- **Integration with Education (NEP 2020):** It aligns with the National Education Policy (NEP) 2020, integrating sports with education to nurture holistic development and life skills in students, youths, promoting academic, athletic excellence.

STRATEGIC FRAMEWORK OF NATIONAL SPORTS POLICY (NSP) 2025

NSP 2025 lays down a comprehensive implementation strategy encompassing:

- **Governance:** Establish a robust regulatory framework for sports governance, including legal framework.
- **Private Sector Funding & support:** Develop innovative financing mechanisms and engage private sector participation through PPPs and CSR.
- **Technology & Innovation:** Leverage emerging technologies, including AI and data analytics, for performance tracking, research, and program implementation.
- **National Monitoring Framework:** Create a national framework with well-defined benchmarks, Key Performance Indicators (KPIs), and time-bound targets.
- **Model Policy for States:** NSP 2025 will serve as a model for States and Union Territories, encouraging them to revise or formulate their own policies.

India also needs to codify measures like the **Draft National Code for Good Governance in Sports, 2017** to enforce reforms for the larger good of sport.

PRACTICE QUESTIONS

MCQS

Q1. With reference to the "Special Intensive Revision (SIR)" exercise by the Election Commission of India (ECI), consider the following statements:

1. The term "intensive revision" is clearly defined under the Representation of the People Act, 1950.

2. SIR in Bihar requires existing voters to submit proof of citizenship including details of parents' birth.
3. Aadhaar and Ration Cards are mandatory eligibility documents under SIR 2025.

Which of the statements given above is/are correct?

CONSTITUTION, POLITY AND GOVERNANCE

- (a) 1 and 2 only (b) 2 only
(c) 1 and 3 only (d) 1, 2 and 3

- (a) 1 and 2 only (b) 1 and 3 only
(c) 2 and 3 only (d) 1, 2 and 3

Q2. Consider the following statements regarding the Electoral Roll in India:

1. Only Indian citizens who are 21 years of age or above can be enrolled in the electoral roll.
2. A person can be considered "ordinarily resident" in a constituency even if they are temporarily living elsewhere.
3. Non-citizens are disqualified from being included in the electoral roll.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

Q3. With reference to the structure of India's civil aviation system, consider the following statements:

1. The Directorate General of Civil Aviation (DGCA) is responsible for the regulation of airlines, airports, and the Airports Authority of India (AAI).
2. The Ministry of Civil Aviation (MoCA) has no supervisory authority over the DGCA.
3. The Airports Authority of India (AAI) is responsible for managing air traffic control and airport infrastructure.

Which of the statements given above is/are correct?

Q4. Which of the following statements about the Vice President of India is/are correct?

1. He is elected by members of both Houses of Parliament, including nominated members.
2. The election uses the first-past-the-post voting system.
3. The Vice President can be re-elected.

Choose the correct option:

- (a) 1 and 2 only (b) 1 and 3 only
(c) 2 and 3 only (d) 1, 2 and 3

Q5. With reference to the Animal Birth Control Rules 2023, consider the following statements:

1. These rules are made under the Environment Protection Act, 1986.
2. The rules recognise street dogs as community animals.
3. Feeding of community dogs is prohibited in residential societies.
4. The rules include a dispute resolution mechanism involving multiple stakeholders.

Which of the above statements is/are correct?

- (a) 2 and 4 only (b) 1, 2 and 3 only
(c) 1 and 3 only (d) All of the above

DESCRIPTIVE QUESTIONS

- Q1.** Discuss the significance of Special Intensive Revision (SIR) of electoral rolls in ensuring free and fair elections. Highlight the associated challenges.
- Q2.** Discuss the constitutional provisions related to the Vice President of India. What are the implications of a mid-term resignation of the Vice President on parliamentary functioning and institutional continuity?

Answers: 1-b, 2-b, 3-b, 4-b, 5-a

INTERNATIONAL RELATIONS & SECURITY

GS PAPER (PRELIMS) & GS PAPER II & III (MAIN)

INDIA-CANADA TIES: STRATEGIC RESET

#BILATERAL RELATIONS

PRIMARY SOURCE THE HINDU

A leadership change in Canada under the Prime Minister Mark Carney has led to a **strategic reset in India-Canada ties**, with both sides working to restore diplomacy and revive trade talks after a two-year standoff.

BACKGROUND OF THE CANADA - INDIA TENSIONS

- India-Canada relationship faced a major setback in September 2023 when former Canadian Prime Minister Justin Trudeau accused Indian agents of being involved in the assassination of Hardeep Singh Nijjar, a Canadian citizen and pro-Khalistan separatist leader. India denied the allegations, calling them “absurd and motivated,” and responded by expelling Canadian diplomats and suspending visa services.
- The situation worsened in October 2024, with further diplomatic expulsions amid Canadian investigations into alleged Indian involvement in clandestine operations targeting Sikh separatists.

RECENT STRATEGIC RESET BETWEEN INDIA-CANADA

A shift in Canada’s leadership and a more pragmatic foreign policy under the new Prime Minister have created an opportunity to reset ties with India. The improvement is reflected by:

- **High-Level Engagement:** The new Prime Minister of Canada hosted the Indian Prime Minister at the G7 Summit. Calling it his great honor, the Indian counterpart highlighted the need for win-win cooperation, reflecting a positive shift in bilateral intent.

- **Mutual Cooperation:** Both leaders emphasised cooperation on energy transition, artificial intelligence, and countering transnational repression and terrorism.
- **Revival of Dialogue:** India’s External Affairs Ministry confirmed plans to restart senior ministerial and working-level engagements.
- **Resumption of the Trade talk:** Talks on Canada-India Free Trade Pact, stalled since 2023, are being revived.

SIGNIFICANCE OF INDIA-CANADA RELATIONS

India-Canada bilateral ties are underpinned by shared values of democracy, pluralism, expanding economic engagement and long standing people-to-people ties.

- **Strategic Economic Partnership:**
 - Bilateral trade stood at \$12.4 billion in 2024, with potential for exponential growth.
 - Canadian investments in India (direct and indirect) now total nearly CA\$100 billion, particularly in infrastructure, financial services, and real estate.
 - India supplies Canada with pharmaceuticals, textiles, gems and jewelry, while Canada exports potash, timber, paper, and mining products to India.
- **Educational and People-to-People Ties:**
 - India is the largest source of international students in Canada, contributing significantly to its education sector and economy.
 - Canada is among the top 5 tourist sources for India. A large and politically active Sikh diaspora in Canada, the largest outside India, influences bilateral dynamics.
- **Geopolitical and Strategic Convergence:**
 - Both countries are part of democratic alliances and share concerns about transnational terrorism,

climate change, and emerging technologies like AI and renewable energy.

- Trade diversification is a priority for both amid growing concerns over US tariffs and China's assertiveness.
- **Complementary Economic Strengths:** Canada seeks to diversify beyond the US market; India offers a young market with rising consumption.

KEY CHALLENGES IN THE RELATIONSHIP

- **Khalistan Issue:** India sees Canada's inaction against Khalistan-linked separatist groups as a serious security concern, which continues to cause diplomatic friction.
- **Pending Extradition Requests:** More than two dozen extradition and provisional arrest requests by India, related to individuals charged with extremism, remain unresolved in Canada.
- **Allegations of Transnational Repression:** Canada is investigating the killings of two Sikh separatists and has accused Indian nationals of involvement. While India denies any role, the ongoing legal cases have strained bilateral trust.
- **Mistrust in Security Cooperation:** Canada accuses Indian diplomats of covert surveillance, while India criticizes Canada for ignoring intelligence inputs and not cooperating on counterterror efforts.
- **Stalled Trade Negotiations:** Despite prolonged discussions, both countries have been unable to finalise a Free Trade Agreement (FTA), limiting economic potential.

WAY FORWARD

- **Revive Strategic Dialogue:** Resume high-level diplomatic talks to rebuild trust and strengthen institutional ties.

- **Boost Security Cooperation:** Establish joint mechanisms for intelligence sharing and counterterror collaboration.
- **Fast-Track Trade Engagement:** Accelerate trade talks like EPTA to expand economic cooperation and reduce dependency on third markets.
- **Adopt Economic-First Approach:** Prioritise trade and investment ties regardless of political differences, especially in education and energy.
- **Leverage Diaspora Diplomacy:** Strengthen cultural links through the Indian diaspora while addressing extremist influences diplomatically.

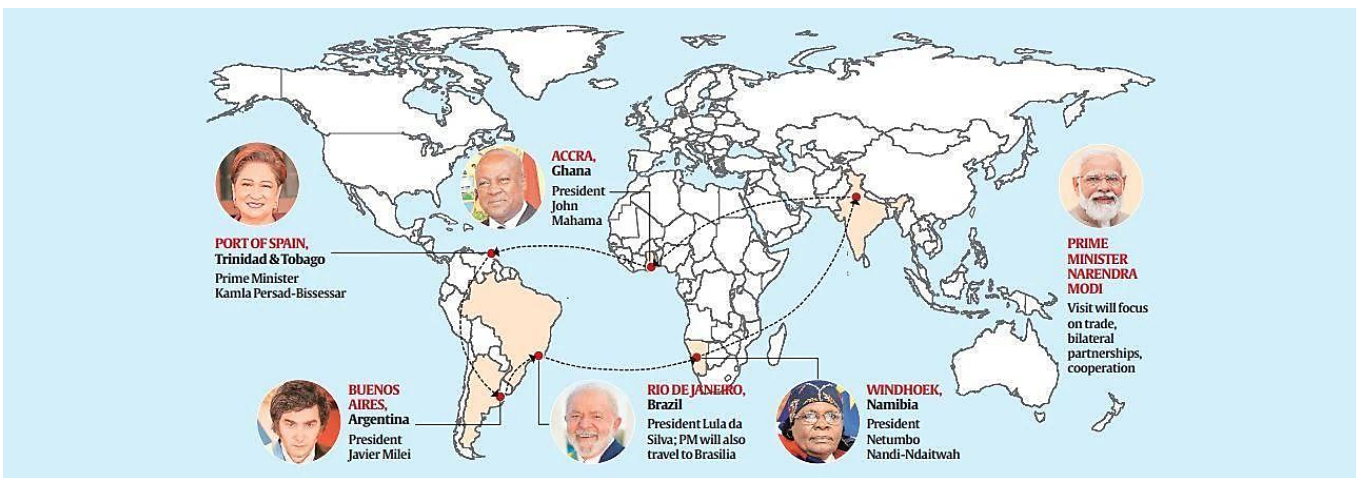
The recent strategic reset signals a move toward pragmatic diplomacy between India and Canada, and signals a shift towards a stable, future-ready partnership focused on trade, trust, and shared global goals.

FIVE-NATION TOUR TO DEEPEN INDIA'S GLOBAL SOUTH OUTREACH

#BILATERAL RELATIONS #GLOBAL SOUTH

PRIMARY SOURCE The Indian EXPRESS

The Prime Minister of India is on a **five-nation diplomatic tour** from July 2 to 9 in **Ghana, Trinidad & Tobago, Argentina, Brazil and Namibia** aimed at deepening India's bilateral ties and strengthening India's leadership role in the **Global South**.



COUNTRIES IN THE TOUR: PURPOSE AND SIGNIFICANCE**1. Ghana:**

- First visit by an Indian PM to Ghana in the last three decades. Ghana is one of **West Africa's fastest-growing economies**.
- Ghana is a valued partner in the Global South and plays an important role in the **African Union** and the **Economic Community of West African States (ECOWAS)**.
- India is the largest destination for Ghanaian exports; gold accounts for more than 70% of India's imports from Ghana.
- India and Ghana have elevated their ties to the level of **comprehensive partnership** with the resolve to expand bilateral ties in food security, pharmaceuticals, and development cooperation. Ghana plans to emerge as the **vaccine hub for Africa**.
- **India-Ghana cooperation** will be enhanced in areas such as training of armed forces, maritime security, defence supply and cyber security.
- Indian companies will cooperate with Ghana in the **exploration and mining of critical minerals**. India would share its experience of **UPI digital payments** with Ghana.
- Indian Prime Minister was conferred with the country's highest state honour, the Companion **of the Order of the Star of Ghana** during the visit for his distinguished statesmanship and influential global leadership.

2. Trinidad & Tobago:

- First bilateral visit by an Indian PM after 1999.
- 40-45% of the Indian diaspora in the Caribbean lives in Trinidad and Tobago.
- Both Prime Minister Kamla Persad-Bissessar and President Christine Carla Kangaloo are of Indian origin.
- The visit will mark 180 years of the arrival of **Indian immigrants (Girmitiyas)** in T&T.
- The bilateral economic relationship has witnessed steady growth with total trade reaching \$341.61 million in FY 2024-25.
- T&T is the first country in the Caribbean to adopt India's UPI (Unified Payments Interface) system that would help in transfer of finance between the two sides.

- The Indian Prime Minister was conferred with the highest honour of the land- the Order of the Republic of Trinidad and Tobago.

3. Argentina:

- First bilateral visit by an Indian PM in 57 years.
- Both countries will review ongoing cooperation and discuss ways to enhance defence, agriculture, mining, oil and gas, energy, etc. partnerships.
- Argentina is a key economic partner in **Latin America** and a **G20 member**.
- India and Argentina have significantly **advanced bilateral cooperation** in the mineral resources sector, particularly in lithium, copper, and rare earth elements, a critical input for India's green energy transition and industrial growth.
- Argentina is a **major supplier** of soybean and sunflower oil to India.
- In 2024, India was Argentina's fifth-largest trading partner and export destination.

4. Brazil:

- Brazil is India's largest trading partner in South America.
- Both countries will work closely to **expand the Mercosur preferential trade agreement** to cover more products and improve market access for Indian exporters. Mercosur is a regional trade bloc comprising Brazil, Argentina, Paraguay and Uruguay.
- India announced the plans to **enable Unified Payments Interface (UPI)** adoption in Brazil on the lines of India's digital payments infrastructure.
- The key sectors for **enhanced bilateral cooperation** were identified, including agriculture, food processing, digital public infrastructure and space technology.
- Indian PM was conferred with **Brazil's highest civilian award**, the Grand Collar of the National Order of the Southern Cross.

5. Namibia:

- Namibia is a valued and trusted African partner with which India seeks to **boost bilateral cooperation**.
- Bilateral trade has grown from less than \$3 million in 2000 to almost \$600 million.
- Indian companies have invested in mining, manufacturing, diamond processing and services in Namibia.

- Eight cheetahs from Namibia were released by the PM at Kuno National Park in Madhya Pradesh in 2022, the world's first intercontinental translocation of a major carnivore species.

SIGNIFICANCE OF INDIA'S GLOBAL SOUTH OUTREACH

- Reinforces India's leadership role in the Global South.
- Focus on South-South cooperation.
- Strengthens India's economic diplomacy and strategic alliances.
- Enhances cultural and diaspora linkages.
- Counter China's influence with democratic and transparent partnerships.
- India reasserting itself as a voice of emerging economies.

The diplomatic trip aims to reinforce partnerships on both sides of the Atlantic and strengthen India's collaboration with regional and multilateral platforms including BRICS, the African Union, the Economic Community of West African States (ECOWAS), and the Caribbean Community, or CARICOM.

BRICS SUMMIT 2025

#INTERNATIONAL ORGANISATIONS



The 2025 BRICS Summit took place in Rio de Janeiro, Brazil on July 6-7. The 17th edition of BRICS Summit focuses on the theme- 'Strengthening Global South Cooperation'.

KEY HIGHLIGHTS OF BRICS SUMMIT 2025

- The Summit called to **reform multilateral institutions**, including the usual call for Brazil and India to become permanent members of the United Nations Security Council.
- The group introduced a **new framework for joint action**, an important signal of the group's coordinated position ahead of the upcoming UNCCC, known as COP30, which will be held in Belém, Brazil.
- Advocated for **more inclusive global discussions on artificial intelligence (AI) governance**, echoing concerns that Global South perspectives are often underrepresented in these debates.
- **Proposal for an institution inspired by the World Bank's Multilateral Investment Guarantee Agency.** It would aim at facilitating infrastructure and

development investment across the Global South by providing investment guarantees to reduce political risk.

- The declaration condemned the terror attack in Pahalgam, called for peace in Gaza and condemned recent bombings in Iran (a member of the BRICS) and attacks on Russian civilian infrastructure.

ABOUT BRICS

- BRICS is an **intergovernmental organisation** comprising **ten** countries- Brazil, Russia, India, China, South Africa, Iran, Egypt, Ethiopia, United Arab Emirates and Indonesia.
 - The acronym 'BRIC' was coined by economist Jim O'Neill in 2001.
 - Founding countries of BRIC: Brazil, Russia, India, and China.
 - **First formal BRIC summit:** Held in 2009 in Yekaterinburg, Russia
 - South Africa joined BRIC in 2010, transforming BRIC to BRICS.
- **New members:** Egypt, Ethiopia, Iran, and the UAE joined BRICS as full-time permanent members in 2024. Indonesia was admitted as the full-time member in 2025.
- BRICS was conceived as a counterweight to the Group of Seven (G7) developed economies, and has emerged as a **formidable bloc for political and diplomatic coordination** among Global South nations.

OBJECTIVES

- To promote economic growth, **strengthen cooperation** in areas like trade, investment, and infrastructure.
- Coordination in global governance and advocating for reforms in institutions like the **United Nations (UN)** and **International Monetary Fund (IMF)**.
- Cultural and social exchange by enhancing people-to-people connections.

ECONOMIC IMPORTANCE OF BRICS+

- BRICS+ represents nearly **55%** of the global population and accounts for nearly **40%** of global GDP, based on purchasing power parity, exceeding that of the G7.
- Growing influence in global trade and investment through the **New Development Bank**.
- **Contingent Reserve Arrangement (CRA)** under BRICS USD 100 billion CRA is established to provide financial

support to member countries in times of balance of payments crises.

NEW DEVELOPMENT BANK

- NDB is a multilateral development bank established by BRICS.
- **Objective:** To mobilise resources for infrastructure and sustainable development projects in emerging markets and developing countries (EMDCs).
- Initial authorised capital: \$100 billion.
- **Headquarters:** Shanghai, China.

BRICS AS PLATFORM FOR SOUTH-SOUTH COOPERATION

BRICS grouping has emerged as a significant platform for fostering South-South cooperation in the evolving global order.

- **Diversified Representation:** BRICS+ has included countries from Africa and Asia to enhance BRICS' representation of developing nations. Diverse BRICS gains legitimacy to advocate for Global South issues like fair-trade, climate justice, and technology access.
- **Economic Collaboration:** Intra-BRICS integration encompasses free trade agreements and export-oriented strategies, including tariff exemptions and reductions. This encourages regional and inter-regional value chains, reducing over-dependence on Western supply chains. It would ultimately lead to trade expansion, and rise in both inward and outward foreign direct investment.
- **Financial Independence:**
 - The New Development Bank (to finance infrastructure and development projects) is a **credible alternative to existing financial institutions** (IMF, World Bank dominated by western powers).
 - BRICS nations have agreed to **promote use of local currencies in trade**. E.g., UAE and India trade in Rupees and Dirhams instead of the US Dollar. The current intra-BRICS trade stands at over \$600 billion.
 - The plan to launch a **common BRICS currency** is under consideration.
- **Global Governance Reforms:** BRICS provides a platform to advocate for a more multipolar world order and reforms in global institutions like the WTO, IMF, and U.N. E.g., reforms to the UNSC to include more representation from the Global South. The reforms would benefit Indian industry by ensuring fairer trade

rules, better dispute settlement mechanisms, and more balanced development policies.

- **Technology Sharing:** BRICS+ members share technology particularly in areas like digital payments and renewable energy. E.g., Collaboration in digital payment systems (India's UPI and China's Cross-Border Payment Systems).

CHALLENGES FACED BY BRICS

- **Diverse Interests:**
 - Member states have varying economic interests and geopolitical alignments which can hinder collective action. E.g., India and Brazil maintain strong ties with the US, while Russia and China adopt anti-West stances.
 - New members like Iran and UAE add to the ideological diversity complicating consensus-building.
- **Lacks Institutional Framework:** BRICS lacks formal treaty or secretariat, or enforcement mechanisms and thus relies on consensus-based decision-making. This makes it difficult for coordination and policy implementation.
- **External Pressures and Sanctions:** BRICS members (particularly Russia) face economic sanctions from Western countries. This can limit their ability to cooperate and implement joint initiatives.
- **Internal Economic Challenges:** Some BRICS members (such as Brazil and South Africa) face significant domestic economic challenges which can divert attention from regional cooperation.

BRICS+ marks an important step toward a multipolar world and empowerment of the Global South. The need of the hour is to harmonise BRICS customs ecosystem-including Mutual Recognition Agreements, streamlined documentation, and the elimination of non-tariff barriers to facilitate smoother trade flows and economic cooperation.

2ND BIMSTEC PORTS CONCLAVE

#REGIONAL GROUPINGS #BIMSTEC



India hosted the 2nd BIMSTEC Ports Conclave in Visakhapatnam, Andhra Pradesh on 14-15 July 2025.

BIMSTEC PORTS CONCLAVE

- India hosted the 2nd BIMSTEC Ports Conclave in Visakhapatnam.
- Organised recently by Visakhapatnam Port Authority (VPA).
- **Aim:** To operationalise the recently signed **BIMSTEC Agreement on Maritime Transport Cooperation (AMTC)**, facilitate dialogue on port-led development, and foster deeper integration in maritime trade, logistics, cruise tourism, and skill development.
- **Theme:** Navigating the Future- Blue Economy, Innovation and Sustainable Partnerships.

KEY HIGHLIGHTS OF THE CONCLAVE

Member countries pushed for greater collaboration between the members of the grouping.

- In line with India's 'Neighbourhood First' policy, the participants were in agreement on the need for deeper BIMSTEC collaboration in port-led growth, digital integration, and skill development to unlock regional prosperity.
- Call to make the BIMSTEC maritime economy more innovative and inclusive. Despite the grouping's 1.7 billion population and a combined GDP of \$4.5 trillion, its intra-regional trade stands at just 7%, as against 25% in the ASEAN maritime zone.
- Industry and government representatives called for:
 - Unifying digital port platforms for seamless tracking and trade
 - Creation of a regional skill certification framework for maritime professionals
 - Promotion of coastal shipping and cruise tourism circuits to boost connectivity and culture.
- The Union Minister for Ports, Shipping and Waterways urged the member countries to **ratify** and implement the recently inked **BIMSTEC Agreement on Maritime Transport Cooperation (AMTC)**.

BIMSTEC AGREEMENT ON MARITIME TRANSPORT COOPERATION (AMTC)

- AMTC was signed during the **6th BIMSTEC Summit held in Bangkok**, Thailand (April 2025).
- The agreement seeks to facilitate dialogue on port-led development and foster greater integration of

maritime trade, logistics, cruise tourism, and skill development.

KEY INITIATIVES

The conclave also hammered out key initiatives, including:

- Regional collaboration through the Kaladan corridor linking northeast India with Myanmar,
- A BIMSTEC cruise tourism circuit.
- Launch of a real-time maritime dashboard for regional project tracking.
- Leveraging public-private partnerships to build world-class port and logistics infrastructure.

SIGNIFICANCE OF BIMSTEC PORTS CONCLAVE

- **Strategic Connectivity Boost:** Strengthens multimodal links like the Kaladan project, enhancing access to India's Northeast and deepening India-ASEAN connectivity.
- **Maritime Trade & Blue Economy:** Supports India's SAGAR vision by fostering regional maritime trade, cruise tourism, and port-led development.
- **Geopolitical Leverage:** Enhances India's leadership role in the Bay of Bengal amidst growing Chinese influence in the Indo-Pacific.
- **Digital and Skill Diplomacy:** Promotes digital port integration and regional skilling, aligning with India's push for innovation and capacity-building in neighbourhood diplomacy.

ABOUT BIMSTEC

- BIMSTEC stands for Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation.
- **Established:** 1997 through Bangkok Declaration.
- **Members:** Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, Thailand.
- **Objective:** To promote regional cooperation in areas like trade, technology, transport, energy, tourism, fisheries, and security.
- **Permanent Secretariat:** Dhaka, Bangladesh
- BIMSTEC constitutes a **unique link between South and South-East Asia**, with:
 - five members from South Asia (Bangladesh, Bhutan, India, Nepal and Sri Lanka)
 - two from South-East Asia (Myanmar and Thailand).

INDIA-UK COMPREHENSIVE ECONOMIC AND TRADE AGREEMENT

#BILATERAL TRADE #FTA

PRIMARY SOURCE THE HINDU

India and the UK have signed a landmark free trade pact **India-UK Comprehensive Economic and Trade Agreement (CETA)**. It is expected to **double bilateral trade** to \$112 billion by 2030, boost services exports, liberalise government procurement, and facilitate mobility.

KEY HIGHLIGHTS OF INDIA-UK COMPREHENSIVE ECONOMIC AND TRADE AGREEMENT (CETA)

What India Gains?

1. 99% Duty Free Access:

- The UK will **eliminate tariffs** on about 99% of tariff lines for Indian goods. It will benefit **key labour-intensive sectors**- marine, textiles, chemicals, base metals. The sectors will now enjoy zero duties, down from rates as high as 20%.
- India has secured **duty-free access** for sectors like rubber, plastics, auto, tea, coffee, and spices.
- In **processed foods**, tariffs on 99.7% of lines (presently as high as 70%) have been scrapped.

2. Textiles:

- India's textiles and clothing sector get **duty-free access** to over 1100 product categories (E.g., ready-made garments, home textiles, carpets, handicrafts etc.). This does away with the disadvantage on tariff front that India had with countries like Bangladesh and Cambodia.
- With duties removed, India is **expected to gain at least 5% more market share** in the UK within the next one to two years.

3. Agriculture:

- Many agricultural and processed foods, including fruits, vegetables, cereals, spices like turmeric and pepper, and items like mango pulp, pickles, and pulses will get **duty-free access** to the UK.
- Over 95% of tariff lines will be duty free, which is likely to boost agri exports by over 20% in three years. This

will support **India's goal of \$100 billion agri-exports** by 2030.

- The FTA protects India's sensitive sectors like dairy, apples, oats, and edible oils.

4. Marine Products:

- Tariffs have been removed on key items like shrimp, tuna, fishmeal, and feeds- previously taxed between 4.2% and 8.5%. No tariffs for India's marine products creates a **\$5.4 billion marine export opportunity** for India.

5. Engineering:

- India's engineering exports to the UK will have duty-free access. With tariffs (presently up to 18%) gone, exports could nearly double to over \$7.5 billion by 2029-30.

6. Pharmaceuticals:

- The FTA **does away with tariffs on generic medicine**, thus enhancing their competitiveness in the UK, which is India's largest pharmaceutical market in Europe.
- Medical devices** such as surgical instruments, diagnostic equipment, ECG machines, and X-ray systems will now enjoy **zero-duty access**, making Indian products more cost-effective and attractive in the UK market.

7. Chemicals and Plastics:

- India's chemical exports to the UK may rise by 30-40%, estimated to reach \$650-750 million in 2025-26.
- The FTA gives duty-free access to plastics, and thus opens up strong opportunities in high-demand segments like films, sheets, pipes, and kitchenware in the UK.

8. Sectoral Boost:

- Leather:** In leather and footwear, the FTA does away with the 16% tariffs. It will add 5% market share in 1-2 years, and benefit MSME hubs like Agra, Kanpur, Kolhapur, and Chennai.
- Gems and jewellery export** is projected to double in 2-3 years as the FTA opens access to the UK's \$3 billion jewellery market.
- India's sports goods exports** like soccer balls, cricket gear, rugby balls, and non-electronic toys will grow, boosting competitiveness against countries like China and Vietnam.

9. Benefits for Indian Professionals:

- **Double Contribution Convention:** Indian professionals working temporarily in the UK will be exempt from paying social security for up to three years, reducing the financial burden on both employees and employers.
- **No Economic Needs Test:** The FTA grants access to 36 service sectors without an Economic Needs Test for Indian firms and freelancers.
- Indian professionals can now work in as many as 35 UK sectors for up to 2 years, even without the need for a local office.

What India gains	What UK gains
<ul style="list-style-type: none"> ● Agri sector to benefit from tariff cuts for meat, dairy, tea, coffee, spices, fruits, vegetables 	<ul style="list-style-type: none"> ● Duty cuts on UK exports for whiskies, gin from 150% to 75% at entry into force
<ul style="list-style-type: none"> ● Improved access to \$5.4 b UK marine sector with tariffs eliminated 	<ul style="list-style-type: none"> ● UK car manufacturers to benefit from a quota reducing the tariff from up to 110% to 10%
<ul style="list-style-type: none"> ● Labour-intensive sectors like textiles, footwear, chemicals, metals, processed food to get major boost 	<ul style="list-style-type: none"> ● Locked in access for financial and professional business services, to offer certainty
<ul style="list-style-type: none"> ● Engineering exports could double in five years to \$7.95 b with tariff elimination 	<ul style="list-style-type: none"> ● Will get enhanced access to India's government procurement market
<ul style="list-style-type: none"> ● 75,000 Indian workers exempted from UK social security for 3 years 	<ul style="list-style-type: none"> ● Secures commitments on digital trade to promote digital system compatibility and paperless trade

WHAT UK GAINS?

- **India will reduce import tariffs** on 90% of UK tariff lines, with 85% becoming fully tariff-free within 10 years.
- **India has cut tariffs** on aerospace, automobiles, and electrical machinery with reductions ranging from as high as 110% and 11% to just 10% and 0%.
- The **import duties on UK-produced whisky and gin** are lowered from 150% to 75% immediately, and will be followed by a further decrease to 40% within a decade.
- The UK businesses will gain **expanded access to public procurement opportunities** in India. British companies will be able to bid on non-sensitive government tenders valued above Rs 2 billion.
- The UK will be able to **create over 2,200 jobs** as a direct result of the trade agreement.
- **British consumers will benefit** from cheaper prices and more choices on clothes, shoes, and food products.

The bilateral trade between the two countries stood at nearly **USD 56 billion** in FY25. The FTA will bring huge

benefits to both our countries, boosting wages, raising living standards and putting more money in the pockets of working people.

INDIA-EU FTA: DISAGREEMENTS OVER FOOD SAFETY RULES

#BILATERAL TRADE #TRADE AGREEMENTS



India and the European Union (EU) are negotiating a **Free Trade Agreement**. The progress is stalled due to disagreements over food safety norms under Sanitary and Phytosanitary (SPS) measures.

INDIA-EU TRADE AND INVESTMENT AGREEMENT:

- India and EU are negotiating a comprehensive Free Trade Agreement (FTA), officially known as the India-EU Trade and Investment Agreement.
- Despite 12 rounds of talks, **key differences** over Sanitary and Phytosanitary (SPS) continue to hinder progress.

SANITARY AND PHYTOSANITARY (SPS) MEASURES

- The Agreement on the Applications of Sanitary and Phytosanitary (SPS) Measures came into force in 1995 with the establishment of World Trade Organisation (WTO). It set out the basic rules for food safety and animal and plant health standards.
- The Agreement allows countries to set their own standards. However, the regulations should not arbitrarily or unjustifiably discriminate between countries where identical or similar conditions prevail.

INDIAN CONCERNS

- EU's Sanitary and Phytosanitary (SPS) exceed global norms, often being stricter than WHO Codex guidelines.
- The EU regularly rejects Indian shipments citing differences in standards, including restrictions on the use of **methyl bromide fumigation** for certain plant products.
- As per the Economic Advisory Council to the Prime Minister (EAC-PM) report in 2022, the EU enforces **stringent aflatoxin limits**. E.g.,

- For direct human consumption, the EU permits a maximum of 2 µg/kg for aflatoxin B1 and 4 µg/kg for total aflatoxins.
- **Codex Alimentarius** (International food standards body under WHO) has set a more lenient general limit of 15 µg/kg (or 15 parts per billion) for total aflatoxins in peanuts, meant for human consumption.
- This **divergence in standards** often leads to trade disruptions and additional compliance burdens for Indian exporters targeting the EU market.

INDIA - EU TRADE

- EU is India's largest and most premium export destination for agricultural items, particularly coffee, tea, spices and rice.
- However, India's exports to the EU have seen **limited growth** over the years, rising from \$3.02 billion in FY19 to \$4.54 billion in FY25, largely due to the stringent standards imposed by the EU on foreign agricultural products.

AFLATOXINS

- Aflatoxins are a group of **poisonous carcinogens** and **mutagens** produced by certain **moulds (fungi)**, particularly *Aspergillus* species, that grow on various food crops and agricultural commodities.
- The toxins are commonly found on agricultural crops such as peanuts, maize (corn), rice and tree nuts, especially in warm and humid climates.
- When consumed, they can have **severe health implications** including acute toxicity, liver cancer, immune system suppression and growth impairments.

BORDER DISPUTE BETWEEN THAILAND AND CAMBODIA

#GEOPOLITICS #SOUTHEASTASIA



Thailand launched airstrikes against Cambodian military targets along their long-disputed border, escalating tensions between the Southeast Asian neighbors.

BORDER DISPUTE BETWEEN THAILAND AND CAMBODIA

- **Thailand and Cambodia share around 800 kilometres of land border.** The contesting claims stem largely from a **1907 map drawn under French colonial rule** that was used to separate Cambodia from Thailand.

Cambodia and Thailand have a long-standing dispute over land near an ancient border temple.



- **Cambodia** has been using the map as a reference to claim territory, while **Thailand** has argued the map is inaccurate.
- The most prominent and violent conflicts broke out around the **1,000-year-old Preah Vihear temple**. In 1962, the **International Court of Justice (ICJ)** awarded sovereignty over the area to Cambodia and that became a major irritant in relations.
- Cambodia went back to ICJ in 2011. The ICJ reaffirmed the ruling in 2013, a decision that rattled Thailand. **Thailand does not accept the jurisdiction of the ICJ** and insists on solving conflicting border claims by the existing bilateral mechanism.
- Cambodia maintains that it has submitted the case to the ICJ, and would no longer discuss these areas under the two countries' bilateral mechanism.
- Additionally, Thailand and Cambodia share a 26,600 square kilometre area that overlaps their **maritime boundary claims**.

Thailand and Cambodia have **implemented a ceasefire** intended to end five days of armed combat over disputed territory along their border.

ICC ISSUES ARREST WARRANT AGAINST TALIBAN LEADERS

#INTERNATIONAL INSTITUTIONS #HUMAN RIGHTS



The **International Criminal Court (ICC)** issued an arrest warrant for two senior Taliban leaders for the crime of persecuting women, girls, and others who oppose the gender policy of the government.

ICC ISSUES ARREST WARRANT AGAINST TALIBAN LEADERS

- **Warrant issued against:** Two senior Taliban leaders- Supreme leader Hibatullah Akhunzada and the head of Afghanistan's Supreme Court- Abdul Hakim Haqqani.
- **Ground:** On charges of systematic persecution of women and girls.
- **Legal Basis- Afghanistan's ICC Membership:** ICC has jurisdiction over crimes committed on Afghan soil or by Afghan nationals after Afghanistan acceded to the Rome Statute in 2003.

SYSTEMATIC PERSECUTION OF WOMEN AND GIRLS IN AFGHANISTAN

- Taliban has severely deprived girls and women of:
 - basic human rights like education, privacy, and family life
 - freedoms of movement, expression, thought, conscience, and religion.
- **E.g.,** barring girls from secondary schools, beauty salons, excluding women from most workplaces, and restricting their movement without a male guardian.
- **144-page Morality Law** (2024) promulgated by the Taliban includes provisions requiring women to cover their entire body in public, and to not sing or even speak in public. It forbids women and men from looking at each other in public, and provides for the persecution of LGBTQIA+ people.

WHAT IS THE INTERNATIONAL CRIMINAL COURT?

International Criminal Court	
<ul style="list-style-type: none"> • The ICC is an international tribunal established under the Rome Statute, an international treaty that was adopted on July 17, 1998. • Started functioning after its founding treaty entered into force on July 1, 2002. • Headquarter : The Hague, Netherlands. • Aim : To "end impunity for the perpetrators of the most serious crimes of concern to the international community" — genocide, crimes against humanity, war crimes, and the crime of aggression. • It is the only international court with the jurisdiction to prosecute individuals. • Only tries crimes committed after July 1, 2002. 	<p>Jurisdiction</p> <p>Can act when:</p> <ul style="list-style-type: none"> • Crimes are committed in the territory of a member state, • The accused is a national of a member state, • UN Security Council refers a situation (even if not a member), • A non-member state accepts jurisdiction voluntarily. • India is not a party to the Rome Statute. • Afghanistan acceded to Rome Statute on February 10, 2003, allowing the ICC to exercise jurisdiction over relevant crimes in Afghanistan or by it's nationals.

ICC'S LAW ON CRIMES AGAINST HUMANITY

Article 7(1)(h) of the Rome Statute of the International Criminal Court defines crimes against humanity as :

- Crimes against humanity include persecution against any identifiable group or collectivity on political, racial, national, ethnic, cultural, religious, gender... or other grounds universally recognised as impermissible under international law, carried out as part of a widespread

or systematic attack directed against a civilian population.

IMPACT OF THE ICC'S WARRANT

- The warrants mark the first time the global court has taken legal action directly against the Taliban leadership for gender-based persecution.
- However ICC's warrant is unlikely to result in any arrest, as Taliban rejects ICC jurisdiction, rendering the warrant unenforceable in Afghanistan.

US DESIGNATES THE RESISTANCE FRONT AS GLOBAL TERROR OUTFIT

#TERRORISM

PRIMARY SOURCE THE HINDU

Recently, the United States has designated **The Resistance Front** (TRF) as a Foreign Terrorist Organisation (FTO) and as a Specially Designated Global Terrorist (SDGT).

THE RESISTANCE FRONT

- The Resistance Front (TRF) is a proxy of Pakistan-based UN-designated terrorist group **Lashkar-e-Taiba** (LeT).
- Founded by Muhammad Abbas Sheikh (now deceased) in 2019, in the **aftermath of the abrogation of Article 370**. It is currently headed by designated terrorist Sheikh Sajjad Gul. As per Indian security agencies, the outfit was floated to evade international sanctions against Pakistan.
- TRF has carried out **several terror attacks in Jammu & Kashmir's** Keran (2020), Handwara, Sopore, Shopian, Anantnag, and Reasi with the latest one in Baisaran meadows of Pahalgam (2025).
- TRF usually focused on security forces and political figures, but late 2024 onwards it started to target infrastructure projects and civilians (including non-locals) in J&K.
- India has designated the TRF as a terror organisation under the **Unlawful Activities Prevention Act** in 2023.

The designation will help India's case in **designating the TRF under the 1267 Committee for sanctions** at the United Nations Security Council (UNSC) and imposing sanctions and travel bans on its members.

Pakistan, a non-permanent member of the UNSC, has been protecting TRF at UNSC with support from China.

1267 SANCTIONS COMMITTEE

- The 1267 Sanctions Committee, also known as the ISIS and Al-Qaeda Sanctions Committee, was established under the UNSC Resolution in 1999.
- It is one of the most important UN subsidiary bodies **working towards combating terrorism**, particularly in relation to ISIS, Al-Qaeda, and associated individuals, groups and entities.
- The committee decides on **sanctions and travel bans** for individuals and entities associated with these terror organisations and ensures the enforcement of these measures under UNSC resolutions 1267 (1999), 1989 (2011), and 2253 (2015).

IS ISRAEL COMMITTING GENOCIDE IN GAZA?

#INTERNATIONAL AGREEMENTS #INTERNATIONAL ORGANISATIONS

PRIMARY SOURCE THE HINDU

*There is a growing global consensus that **Israel's conduct in Gaza** meets the legal threshold for genocide. While the International Court of Justice (ICJ) has issued binding provisional measures, Israel's non-compliance and continued assault raise doubts about the credibility of the rules-based international order.*

WHAT IS GENOCIDE?

- Genocide was formally recognised as a **crime** under international law by the **United Nations General Assembly (UNGA) in 1946**.
 - In the aftermath of the horrors of the Holocaust (Germany), the UNGA unanimously adopted the Convention on the Prevention and Punishment of the Crime of Genocide (**Genocide Convention**) in 1948.
 - **The Genocide Convention** defines genocide as acts committed with the intent to destroy, in whole or in substantial part, a national, ethnic, racial, or religious group.
 - Genocide is considered the gravest of international crimes, and its prohibition constitutes a **non-**
- **derogable peremptory norm** (*jus cogens*) of international law. This means:
 - Prohibition of Genocide is absolute and universal- All countries must follow it. It cannot be ignored, suspended, or violated, even during war, emergency or with mutual agreement.
 - Any treaty or law that allows genocide is automatically invalid.
 - Because of its status as a **jus cogens** norm, the duty to prevent and punish genocide gives rise to an **erga omnes** obligation (one owed to the international community as a whole). This means that all states, regardless of their direct involvement in a conflict, are **legally bound to act against genocide** wherever it occurs.

GENOCIDE CONVENTION

- The Convention on the Prevention and Punishment of the Crime of Genocide (Genocide Convention) emerged as an international treaty in the aftermath of World War II.
- The convention is the **first-ever legal instrument** to define and criminalise genocide as an international crime, and a binding treaty to prevent and punish such acts.
 - It was adopted unanimously by the United Nations General Assembly in 1948.
 - The Convention came into force in 1951, and has 153 state parties till 2024. India ratified the Genocide Convention in 1959.
- The Genocide Convention **defines genocide** through five acts:
 - Killing members of a group
 - Causing serious bodily or mental harm
 - Deliberately inflicting conditions of life to bring about physical destruction
 - Imposing measures to prevent births
 - Forcibly transferring children to another group with the intent to destroy, in whole or in part, a specific national, ethnic, racial, or religious group.
- The definition of genocide given by the Convention has been adopted by various international and hybrid tribunals, including the **International Criminal Court (ICC)**, and has been incorporated into the domestic laws of several countries.

Being an *erga omnes* obligation, South Africa, technically unrelated to the conflict in Gaza, claims standing to bring the case to the International Court of Justice (ICJ).

SOUTH AFRICA MOVES TO ICJ AGAINST ISRAEL:

- **South Africa moves to ICJ:** In January 2024, South Africa initiated proceedings against Israel at the ICJ, alleging that Israel's military campaign in Gaza amounted to genocide.
- **Interim order by ICJ:** ICJ has not yet ruled on the merits of the charge, however, it has issued a series of binding provisional measures, including repeated directives to ensure the unimpeded delivery of humanitarian aid into Gaza. These interim orders reflect ICJ's preliminary assessment that a plausible risk of genocide exists.
- **Humanitarian crisis in Gaza:**
 - Gaza Strip is experiencing a humanitarian crisis as a result of the Gaza war (since October 2023).
 - Since March 2025, Israel has begun a **complete blockade of all food and supplies going into Gaza**. The blockade has been partially eased since May 2025 with limited aid distribution. This has resulted in significant shortages of fuel, food, medication, water, and essential medical supplies, with almost half a million people facing starvation.
- **Global consensus:** As the humanitarian crisis worsens, a global consensus is emerging. Heads of state, senior United Nations officials, and leading international jurists are increasingly characterising **Israel's conduct in Gaza as genocidal**.

ESTABLISHING GENOCIDAL INTENT IS DIFFICULT

Proving that genocide has occurred requires establishing two essential elements: the act itself and the intent behind it.

- **Establishing the Act:** The first step is to establish the commitment of one or more of the **five** specific acts (specified in the Genocide Convention) against a protected group.
- **Establishing the Intent behind the Act:**
 - Even more difficult is to establish the specific intent to destroy the group, in whole or in part. This rare intent is what sets genocide apart from other mass atrocities.
 - It is just not enough to show that the crimes were committed; rather the prosecutors must prove that

the individuals as members of a group were targeted to annihilate the group's capacity to survive or reconstitute itself as a political, social, or cultural entity.

SCALE OF DESTRUCTION IN GAZA: EVIDENCE OF PLAUSIBLE GENOCIDE

- **In June 2025, a UN Commission of Inquiry** found that Israeli air strikes, shelling, burning and controlled demolitions had destroyed more than 90% of schools and university buildings across the Gaza Strip.
- **Investigative Reports in Gaza points out systematic destruction** not only of residential areas but also of critical infrastructure, including hospitals, universities, mosques, water systems, agricultural zones, and cultural heritage sites, as evidence of a policy aimed at making Palestinian life in Gaza unsustainable.
- **As per the local health authorities:**
 - Over 58,000 people have been killed, including more than 17,000 children.
 - Gaza now reportedly has the highest per capita number of amputee children in the world.
 - As the starvation crisis deepens, civilians have reportedly been shot while waiting in queues for food and essential supplies.

The scale of destruction in Gaza lend further credence to these claims that Israel had crossed the threshold for committing genocide. Israel has maintained that its **military campaign targets Hamas** and not civilians, who it claims are affected only as collateral damage.

LIMITATIONS OF INTERNATIONAL COURT OF JUSTICE

ICJ has held that intent may be inferred from circumstantial evidence, such as the scale and nature of atrocities, patterns of conduct, and dehumanising rhetoric by state officials.

1. Rigid standards to establish Genocide:

However, the ICJ's evidentiary standard for proving genocidal intent **remains stringent** and has come under increasing criticism.

- **In Croatia v. Serbia (2015)**, the ICJ held that genocidal intent could only be inferred from a pattern of conduct if "this is the only inference that could be reasonably drawn" from the acts in question.
 - This means that genocidal intent can only be accepted if it is the only possible explanation for the acts committed.

- This **rigid standard is widely criticised** as it dismisses the possibility of genocide if there appears to be any other plausible motive. Such a restrictive approach risks making genocide near-impossible to prove.
- **ICJ needs a balanced approach** that weighs all available evidence and discards inferences that are clearly unreasonable.
- In other words, the **presence of other conceivable** motives should not automatically negate a finding of genocidal intent.
- This view is **consistent with international criminal jurisprudence**. Both the International Criminal Tribunal for the Former Yugoslavia (ICTY) and the International Criminal Tribunal for Rwanda (ICTR) have recognised that **genocidal intent can co-exist with other motives**.

2. Diminishing credibility of ICJ and rules-based international order:

- **Israel's continued non-compliance with the ICJ's binding provisional measures** are increasingly being seen as a litmus test for the credibility of rules-based international order and undermines the credibility of ICJ.
- **Absence of decisive Multilateral Action:** Within the UN framework, a strong case has emerged for suspending Israel from the UNGA, citing its persistent violations of the UN Charter and binding Security Council (UNSC) resolutions.
 - Article 6 of the UN Charter permits the expulsion of a member state by the Assembly on the UNSC's recommendation if it consistently breaches the Charter's core principles.
 - In 2024, the UNGA adopted a **resolution calling for economic sanctions** on Israel, including an arms embargo. The US, in particular, has continued to shield Israel from accountability by repeatedly vetoing most UNSC resolutions.

A final verdict by the ICJ on South Africa's genocide allegations against Israel is likely to take years, as it must follow extensive hearings on jurisdiction and the merits of the case.

US TO WITHDRAW FROM UNESCO

#INTERNATIONAL ORGANISATIONS

PRIMARY SOURCE THE HINDU

*The United States, under the Trump administration, has announced to pull out of the **UNESCO** (United Nations Educational, Scientific and Cultural Organisation), by the end of 2026.*

US TO WITHDRAW FROM UNESCO

- The US would withdraw from UNESCO by the end of 2026.
- **Reasons for withdrawal:**
 - **Bias against Israel:** The US has accused UNESCO of being biased against Israel.
 - **Against the US's National Interest:** The US has accused UNESCO of promoting divisive social and cultural causes and maintaining an outsized focus on the UN's Sustainable Development Goals for international development at odds with America First foreign policy.

US'S FALL OUT FROM UNESCO

- **1984:** The US first pulled out of UNESCO, as it viewed the agency as mismanaged, corrupt and used to advance the interests of the Soviet Union. It later rejoined in 2003 during George W. Bush's Presidency.
- **2011:** The US cut down the funding for UNESCO under the Obama administration after the agency included Palestine as a full member.
- **2017:** The US pulled out from UNESCO during President Trump's first term.
- **2023:** The Biden administration rejoined UNESCO. The decision was motivated by the concern that China is filling the gap left by the US in UNESCO policy making.
- **2025:** The US has announced to pull out from UNESCO.

IMPACT OF THE US WITHDRAWAL

- **Funding constraints:** The decision to pull US funding and participation from UNESCO will deal a blow to its work **preserving cultural heritage** around the world. The US provides a notable share of the agency's budget (8% of the agency's total budget). Though UNESCO has diversified its funding sources in recent years and the US contribution has decreased.

ABOUT UNESCO

- UNESCO is a specialised agency of the United Nations.
- **Aim:** To promote world peace and security through international cooperation in education, arts, sciences and culture.
- **Members:** 194 member states (including US).
- Membership of the UN carries with it the right to membership of UNESCO. States that are not members of the UN may be admitted to UNESCO, upon recommendation of the Executive Board, by a two-thirds majority vote of the General Conference.
- UNESCO gets its funding from contributions by member states, voluntary contributions, fundraising, and other, smaller sources of funding.
- **Headquarters:** Paris, France.

KEY FUNCTIONS OF UNESCO

- The agency focuses on promoting **international collaboration** in education, science and culture.
- It works to **improve literacy** with a special focus on girls in countries hit by war or disasters, promotes sex education, and equality for women.
- It is best known for its **list of World Heritage Sites** (presently has over 1200 World Heritage Sites) which acknowledge places with cultural or natural significance, and preserve heritage around the world. The **Rapid Response Facility** provides emergency support for natural World Heritage sites during times of crisis.
- It also keeps an **intangible cultural heritage list of humanity's most worthy creations.**
- It also helps to **set standards** on a range of issues including-
 - Ocean protection and coordinating climate knowledge.
 - Ethics of Artificial Intelligence (AI). UNESCO adopted in 2021- the first global standard-setting instrument on the ethics of AI.

IMPORTANT REPORTS BY UNESCO

- Global Education Monitoring Report
- Global Ocean Science Report
- UNESCO Science Report
- World Trend in Freedom of Expression and Media Development
- United Nations World Water Development Report

UNESCO is the **third UN agency** that President Trump has pulled out of in 2025, following the World Health Organisation (**WHO**) and the United Nations Human Rights Council (**UNHRC**).

The latest move is **another blow on multilateralism** and reflects increasing distrust of international institutions, especially those connected to the United Nations.

AFRICAN KINGDOM OF ESWATINI

#LOCATIONS IN NEWS



The United States has **deported few foreign nationals convicted of serious crimes to Eswatini**, a small southern African kingdom ruled by Africa's last absolute monarch.

AFRICAN KINGDOM OF ESWATINI

- Eswatini, formally Swaziland, is a **landlocked country** in **Southern Africa**. It is situated between South Africa and Mozambique.
- It is one of the **world's last remaining absolute monarchies** and the last in Africa. King Mswati III, who has ruled since 1986, holds full control of government functions and rules by decree.
- Political parties are banned from participating in the electoral process. Protests calling for democratic reforms have grown. The government has been widely accused of using security forces to suppress dissent.
- **Social Issues:** Over half of its 1.2 million population lives on less than \$4 a day. The country has the world's highest HIV prevalence rate, with roughly 26% of adults living with the virus.



US DEPORTATION OF FOREIGN NATIONALS

- The deportation to Eswatini is part of a **wider US strategy to expand third-country deportations**. Earlier, the US had sent deportees to South Sudan. Other nations reportedly approached for similar deals include- Rwanda, Benin, Angola, Equatorial Guinea, and Moldova.
- The deportees are flown to the the-world countries, as their home countries refuse to take them back. The convicts are held in isolation at correctional facilities, while arrangements are made for their eventual return to their countries of origin.
- **Rationale:** The deportations are part of a wider effort by the US administration to ensure that people who terrorised American communities are removed.

INDIA-FRANCE ARMY EXERCISE: SHAKTI 2025

#BILATERAL EXERCISES



The eighth edition of the **India-France Army exercise, 'Shakti 2025'**, that started in June has concluded in **France**.

INDIA-FRANCE ARMY EXERCISE: SHAKTI 2025

- Exercise SHAKTI is a **biennial Joint Military Exercise** between the Indian and French Armies to enhance interoperability, operational coordination, and mutual understanding.
- The **2025 edition** focuses on joint operations in sub-conventional environments under Chapter VII of the United Nations Charter, with training conducted in semi-urban terrain.
- Specialist detachments from both sides engaged in Electronic Warfare (EW) and Counter-Unmanned Aerial System (C-UAS) training, incorporating signal interception, jamming, spectrum control, and drone-neutralisation exercises.

INDIA-FRANCE MILITARY EXERCISES

- **Exercise Varuna:** Annual bilateral Naval exercise between India and France. The joint-exercise is held either in the Indian Ocean or Mediterranean Sea.
- **Exercise FRINJEX:** The maiden Joint Military Exercise between Indian Army and French Army was held in 2023. To enhance inter-operability, coordination and cooperation for undertaking joint humanitarian assistance and disaster relief.

PRACTICE QUESTIONS

MCQS

Q1. Which of the following statements is/are correct about the BIMSTEC Agreement on Maritime Transport Cooperation (AMTC)?

1. It was signed to promote military cooperation in the Indian Ocean.
2. It focuses on port-led development and cruise tourism among member states.
3. All BIMSTEC countries are part of ASEAN.

Select the correct answer using the code below:

- (a) 1 and 2 only (b) 2 only
(c) 1 and 3 only (d) 2 and 3 only

Q2. Consider the following statements with reference to the 'Genocide Convention':

1. The Genocide Convention was adopted by United Nations Human Rights Council.
2. The definition of Genocide given by the Convention is adopted by International Criminal Court.
3. India has not ratified the Genocide Convention.

How many of the statements given above is/are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Q3. Consider the following statements regarding the Sanitary and Phytosanitary (SPS) Agreement under WTO:

1. It allows countries to set their own food safety and animal health standards.

2. It requires that standards be based on scientific evidence.

- (a) 1 and 3 only
(c) 2 and 4 only

- (b) 1, 2 and 3 only
(d) All of the above

Which of the above statements is/are correct?

- (a) 1 only
(c) Both 1 and 2
- (b) 2 only
(d) Neither 1 nor 2

Q4. Consider the following statements about the International Criminal Court (ICC):

1. It was established by the Rome Statute in 2002.
2. It is headquartered in Geneva, Switzerland.
3. It prosecutes individuals for crimes such as genocide and war crimes.
4. India has ratified the Rome Statute.

Which of the above statements are correct?

Q5. Consider the following statements with reference to BRICS:

1. Contingent Reserve Arrangement, under BRICS, aims to provide financial support to member countries during balance of payments crises.
2. BRICS countries together account for more than 40% of the world's population.

Which of the statements given above is/are correct?

- (a) 1 only
(c) Both 1 and 2

- (b) 2 only
(d) Neither 1 nor 2

DESCRIPTIVE QUESTIONS

- Q1.** In the evolving global order, BRICS has emerged as a significant platform for fostering South-South cooperation. Discuss the key challenges faced by BRICS in achieving its objectives.
- Q2.** Examine the significance of the recent strategic reset in India-Canada relations. Discuss the major challenges in the bilateral relationship and suggest a way forward.

Answers: 1-b, 2-a, 3-c, 4-a, 5-c

SOCIETY AND SOCIAL JUSTICE

GS PAPER I & GS PAPER II (MAIN)

FIVE YEARS OF NATIONAL EDUCATION POLICY 2020

#EDUCATION

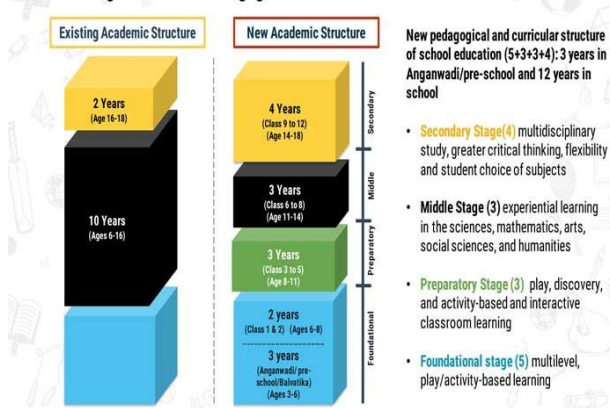
PRIMARY SOURCE The Indian EXPRESS

The **National Education Policy**, India's third such policy since Independence was cleared by the Union Cabinet in July 2020. The NEP promised a sweeping reset of both school and higher education.

NATIONAL EDUCATION POLICY (NEP) 2020

- The NEP 2020 outlines the vision of the new education system of India. It replaces the previous National Policy on Education of 1986.
- The NEP 2020 is based on **five key pillars**: Access, Equity, Quality, Affordability, and Accountability.

Transforming Curricular & Pedagogical Structure



FIVE YEARS OF NATIONAL EDUCATION POLICY

1. Key reforms which have been undertaken:

- Changing School Curriculum:** The 10+2 system has been replaced with a new structure- foundational (pre-primary to class 2), preparatory (classes 3-5), middle (6-8), and secondary (9-12). In 2023, the National Curriculum Framework for School Education (NCFSE) laid out the learning outcomes and competencies for each stage.

- New Textbooks:** NCERT has produced new textbooks for classes 1-8 based on the new framework. **E.g.**, Social Science is now taught as a single book covering history, geography, political science, and economics, replacing separate textbooks for each subject. New books for classes 9-12 are expected next.
- Early Childhood Care and Education:** NEP aims to make pre-primary learning universal by 2030. The Women and Child Development Ministry has issued a National Early Childhood Care and Education (ECCE) curriculum; NCERT's Jaadui Pitara learning kits are already in use.
- Minimum Age for Admission:** Delhi, Karnataka, and Kerala will soon enforce the minimum age of six for class 1 entry.
- National focus for Foundational Skills:** NIPUN Bharat, launched in 2021, seeks to ensure every child can read and do basic math by the end of class 3. A recent government survey found average scores were 64% for language and 60% for math.
- Credit-based flexibility:** NEP suggested the Academic Bank of Credits (ABC). The National Credit Framework (NCF) has been jointly developed by different institutions including CBSE, NCERT, the Ministry of Education, DGT, and the Ministry of Skill Development.
 - NCF brings flexibility to school students, where learning hours (including skill-based ones) translate into credits. CBSE invited schools to be part of an NCF pilot last year.
 - UGC rules published in 2021 allowed students to earn and store credits digitally, even across institutions, making it possible to move between courses or exit and re-enter. The system allows students to earn a certificate after one year, a diploma after two, or complete a four-year multidisciplinary degree.
- Common test for college entry:** NEP 2020 had suggested that multiple college entrance exams

should be replaced with a single national test. Common University Entrance Test (CUET) introduced in 2022 is a key route to undergraduate admissions.

• **Indian campuses abroad and vice versa:**

- IIT Madras, IIT Delhi, and IIM Ahmedabad have set up international campuses in Zanzibar, Abu Dhabi, and Dubai respectively.
- University of Southampton recently opened in India, after two other foreign universities at GIFT City, Gujarat.
- Another 12 foreign universities are in the process of being approved under UGC regulations, plus two more at GIFT City.

2. Key reforms under implementation:

• **Changes in Board exams:**

- NEP envisages less high-stakes board exams. Starting 2026, CBSE plans to allow class 10 students to sit for board exams twice a year. E.g., Karnataka has experimented with the new pattern.
- The NEP idea of **offering all subjects at two levels** (standard and higher) is limited to class 10 math, which CBSE introduced in 2019-20.

• **Holistic report cards:** PARAKH, a unit under NCERT, has developed progress cards that go beyond marks, and include peer and self-assessment. But some school boards are yet to make the shift.

• **Slow progress for four-year UG degrees:** Central universities are rolling out NEP's idea of four-year undergraduate degrees with multiple exit options, and Kerala has followed.

• **Mother tongue in classrooms:** NEP encourages the use of mother tongue as the medium of instruction till at least class 5. CBSE has asked schools to begin this from pre-primary to class 2, with classes 3-5 retaining the option of staying or switching. NCERT is working on textbooks in more Indian languages.

3. Lack of Progress:

• **Issues in Teacher Education overhaul:**

- The National Curriculum Framework for Teacher Education which was due in 2021, is yet to be released.
- The four-year integrated B.Ed course has been announced under the Integrated Teacher Education Programme (ITEP), but colleges offering

existing programmes like Bachelor of Elementary Education (B.El.Ed) are pushing back.

• **UGC's proposed successor delayed:** A 2018 draft bill proposed scrapping the UGC Act and replacing it with an umbrella Higher Education Commission of India (HECI). NEP formalised the idea that HECI would handle regulation, funding, accreditation, and academic standards across higher education, excluding medical and legal. But the Education Ministry is still in the process of drafting the Bill.

• **No breakfast in schools:** NEP recommends breakfast along with midday meals. But in 2021, the Finance Ministry rejected the Education Ministry's proposal to add breakfast for pre-primary and elementary classes.

• **Policy divide between Centre and states:** Some states have pushed back against key NEP provisions.

- Kerala, Tamil Nadu, and West Bengal have refused to sign MoUs with the Centre to set up **PM-SHRI schools**, citing clauses that require full adoption of NEP.
- **Three-language formula:** NEP proposes three languages in school, at least two of them must be Indian. Certain states like Tamil Nadu (which follows a Tamil-English model) sees this as an attempt to impose Hindi.
- Kerala and Tamil Nadu argue that since education is on the **Concurrent List**, the Centre cannot mandate these changes unilaterally. The Centre has withheld Samagra Shiksha funds from these states, saying the money is tied to NEP-linked reforms.

Other challenges include providing better training for Anganwadi workers, and improving infrastructure and teaching quality in early education centres.

PARAKH RASHTRIYA SARVEKSHAN 2024

#EDUCATION



PARAKH Rashtriya Sarvekshan 2024 reveals **significant deficits in student learning** in higher grades, particularly in Mathematics and Science.

ABOUT PARAKH RASHTRIYA SARVEKSHAN

- **PARAKH** (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development) **Rashtriya Sarvekshan** is an assessment conducted by the Ministry of Education.
- Formerly known as the National Achievement Survey.
- Nodal Body: NCERT
- **Purpose:** To provide system-level insights into student learning outcomes, support evidence-based policy-making, and assess alignment with National Education Policy (NEP) 2020 goals.
- This large-scale national survey comprehensively **evaluates the progress of learners** across the Foundational, Preparatory, and Middle Stages.

PARAKH RASHTRIYA SARVEKSHAN 2024

- PARAKH Rashtriya Sarvekshan was conducted in December 2024. It assessed the performance of 21,15,022 children in Grades 3, 6 and 9 from over 74,000 schools (both private and government) in 781 districts of the country.
- The assessment included the following subjects: language and mathematics (for Grades 3, 6, and 9), world around us (for Grades 3 and 6), and science and social science (for Grade 9).

KEY FINDINGS

Best performing States and UTs in school education: Punjab, Himachal Pradesh, Kerala, Dadra Nagar Haveli and Daman & Diu and Chandigarh.

LEARNING OUTCOMES BY GRADE

- **Grade 3:**
 - 67% of students can use and understand enough words for daily conversations.
 - Only 55% of students can correctly arrange numbers up to 99 in ascending/descending order.
- **In Grade 6:**
 - Only 38% of students can solve basic math problems in daily life.
 - Only 38% of students ask questions or make predictions based on nature (seasons, moon phases, trees, etc.)
- **In Grade 9:**
 - Only 31% of students understand complex number systems like integers, fractions, real numbers, and their properties.

INSTITUTION-WISE PERFORMANCE

- Kendriya Vidyalayas, run by the Union government, recorded the lowest performance in Mathematics in Grade 3.
- In Grade 6, government-aided and State government schools showed weak performance in Mathematics.
- For Grade 9, students from Kendriya Vidyalayas performed the best across all subjects, particularly in language.

These **learning gaps** highlight the need for focused interventions to strengthen students' skills, refine instructional strategies, and provide additional learning support. Addressing these areas effectively will help improve overall student learning outcomes in the nation.

USING TECHNOLOGY TO EMPOWER WOMEN AND CHILDREN

#VULNERABLE SECTIONS #WELFARE SCHEMES



Over the past decade, the **Ministry of Women and Child development has integrated technology into its programmes** to ensure that the benefits reach the last mile swiftly, transparently, and efficiently.

LEVERAGING TECHNOLOGY FOR WOMEN'S RIGHTS AND WELL-BEING

1. Saksham Anganwadi Initiative:

- Designed to modernise and empower over 2 lakh Anganwadi centres across India. These centres are being upgraded with smart infrastructure, digital devices, and innovative learning tools, enabling more effective delivery of nutrition, healthcare, and pre-school education services.
- The integration of services provided by 14 lakh Anganwadi centres across the nation with the **Poshan Tracker has enabled real-time data entry, performance monitoring, and evidence-based policy interventions.**

2. Poshan Tracker:

- Over 10.14 crore beneficiaries, including pregnant women, lactating mothers, children under six, and

adolescent girls, are now registered on Poshan Tracker.

- By equipping Anganwadi workers with **smartphones and comprehensive training**, the initiative ensures quality service delivery at the last mile.
- It reimagines **Anganwadi centres as digitally empowered community hubs** that bridge the urban-rural divide.
- Recognised with the Prime Minister's Award for Excellence in Public Administration (2025), it also supports **Poshan Bhi, Padhai Bhi**, providing digital training modules to Anganwadi workers for early childhood education.

3. Facial Recognition and Leak-Proof Nutrition Delivery:

- To plug leakages in the Supplementary Nutrition Programme (SNP), a facial recognition system has been introduced. This ensures that only eligible beneficiaries receive nutrition support.

4. DBT under Pradhan Mantri Matru Vandana Yojana:

- Under the PMMVY Rules, 2022, pregnant women receive ₹5,000 for the first child, and an enhanced ₹6,000 for the second child if it is a girl, promoting positive reinforcement for daughters.
- Delivered through a paperless **Direct Benefit Transfer system**, about ₹19,000 crore has reached over 4 crore women beneficiaries since its inception.
- It is a **fully digital programme** leveraging Aadhaar-based authentication, mobile-based registration, doorstep assistance from Anganwadi/ASHA workers, and real-time dashboards.
- A **dedicated grievance redressal module and citizen-facing portal** ensure transparency, trust, and accountability, strengthening the government's commitment to Beti Bachao, Beti Padhao.

5. Tech-Led Women's Safety Platforms

Beyond nutrition, the Ministry is ensuring safety and support for women through technology-led platforms.

- **SHE-Box Portal:** A single-window platform to lodge complaints under the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013. It enables both online submission and tracking of complaints.

- **Mission Shakti Dashboard and Mobile App:** It provides integrated assistance to women in distress, connecting them to the nearest one-stop centre, now operational in nearly every district. These interventions exemplify how technology is being used not just for efficiency, but for justice, dignity, and empowerment.

TANGIBLE OUTCOMES OF WELFARE SCHEMES

These targeted efforts are delivering tangible outcomes. The latest reports from the Health Management Information System of the Ministry of Health and Family Welfare (MoHFW) reveal that:

- **Sex Ratio at Birth** has increased from 918 (2014-15) to 930 (2023-24).
- **Maternal Mortality Rate** has declined to 97 per 1,000 births (2018-20) from 130 per 1,000 births (2014-16).

LEVERAGING TECHNOLOGY FOR CHILD PROTECTION AND WELFARE

Digital transformation has played a key role in child protection and welfare.

Under the **Juvenile Justice Act, 2015**, digital tools are being used to protect and support children:

- **CARINGS Portal (Child Adoption Resource Information and Guidance System)** streamlines and digitises the adoption process, making it more transparent and accessible.
- **Digitisation** has also improved **monitoring of child care institutions**, foster care placements, and statutory support structures under the Act.
- **Platforms developed by the National Commission for Protection of Child Rights** are tracking violations of child rights.
- **Mission Vatsalya dashboard** strengthens convergence and coordination among various child welfare stakeholders.

Leveraging Technology for Women's Rights and Well-being
Saksham Anganwadi Initiative
SHE-Box Portal
Mission Shakti Dashboard and Mobile app
Pradhan Mantri Matru Vandana Yojana
Facial Recognition and Leak proof Nutrition Delivery
Leveraging Technology for Children Rights and Well-being
CARINGS Portal
Mission Vatsalya Dashboard

LEGAL STATUS OF POLYANDRY IN INDIA

#MARRIAGE #TRIBES

PRIMARY SOURCE *The Indian EXPRESS*

A tribal woman from the **Hatti community** in Himachal Pradesh married two brothers under a traditional system of **Polyandry**.

WHAT IS POLYANDRY?

- Polyandry refers to a marriage system where one woman has more than one husband.
- It has been practiced historically in Tibet, Nepal, and some tribal communities of India like the Toda in Tamil Nadu, Kinnaura in Himachal, and Jaunsaris in Uttarakhand.
- In the Hatti tribe, polyandry is practiced primarily for preserving undivided family property, especially agricultural land, and reinforcing brotherly ties.

Hatti Tribe

- A tribe found in Himachal Pradesh.
- Granted the status of Scheduled Tribes (STs) by the centre in 2022.
- Known for their polyandrous tradition "Jodidaram".
- The purpose of Jodidaram is to preserve undivided family land, particularly agricultural land.

THE HINDU MARRIAGE ACT, 1955

- The Act governs marriage applicable to Hindus, Buddhists, Jains and Sikhs.
- Section 2(2) of the Act states that its provisions do not apply to STs, unless directed by the Central Government via a notification in the Official Gazette.
- In the absence of such a notification, the Hattis continue to be governed by laws laid down under their customs, which are undocumented and uncodified.
- The Act defines "custom" under Section 3 as a rule that has been observed for a long time, and has obtained the force of law.

LEGAL STATUS OF POLYANDRY IN INDIA

- Polyandry and Polygamy are **outlawed** by the Special Marriages Act 1954, the Hindu Marriage Act 1955, and **criminalised** under the Bharatiya Nyaya Sanhita.
- While marriage is governed by personal laws, customary practices of Scheduled Tribes (STs) are recognised by the Constitution under **Article 342**. STs enjoy distinct legal status and cultural autonomy under constitutional provisions like Part XXI and the Fifth Schedule.
- But for a customary law to be valid, it must be certain, reasonable, and consistent with public policy.
- When a customary law is challenged, it does not automatically gain legal recognition; courts have to be provided with proper evidence that such customary laws prevail.

Note:

- The Uttarakhand UCC mandates the registration of marriage, establishes equal rights of spouses across religions and communities and prohibits polygamy. However, in line with the constitutional provisions of respecting tribal autonomy, it **does not apply to Scheduled Tribes**.
- As per Section 2 of the Uttarakhand UCC Rules, 2025, the **Code exempts members of Scheduled Tribes** (as defined under Article 366(25) read with Article 342), and those whose customary rights are protected under Part XXI of the Constitution.

KEY SUPREME COURT JUDGMENTS

Courts have held that **customs must align with fundamental rights** such as equality, dignity, and liberty; any custom violating these is deemed unconstitutional.

- **Triple Talaq Case (Shayara Bano v. Union of India, 2017):** The Supreme Court declared the practice of triple talaq as unconstitutional as it was deemed arbitrary, unreasonable and violative of Article 14 and 21 of the Constitution.
- **Sabarimala Case 2018:** The ban on entry of women of menstruating age into the Sabarimala temple was held discriminatory and unconstitutional, violating Articles 14, 15, and 21. The Court ruled that religious customs cannot override gender equality.
- **Ram Charan Vs Sukhram case 2025:** In a case related to succession rights for tribal women, the court affirmed that excluding female heirs solely

based on customary male preferences violates Article 14 of the Constitution.

In various judgments, the SC has observed that customs too, like the law, cannot remain stuck in time and others cannot be allowed to take refuge in customs or hide behind them to deprive others of their rights.

GIG WORKERS MISSING FROM PLFS

#LABOUR WELFARE #EMPLOYMENT

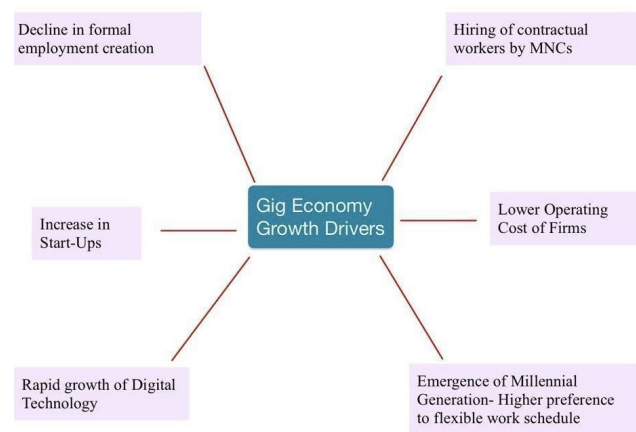
PRIMARY SOURCE THE HINDU

The Periodic Labour Force Survey (PLFS), India's primary source for labor statistics, lacks a clear classification of Gig Workers. Gig workers are subsumed under broad categories such as 'self-employed', 'own-account workers', or 'casual labour' in the PLFS. This leads to their under-representation in official data.

GIG WORKERS

Gig workers were first incorporated into the legal framework through the **Code on Social Security 2020**.

- **The Code on Social Security 2020 defines a Gig Worker** as a person who participates in a work arrangement and earns from such activities outside of a traditional employer-employee relationship. The above definition separates gig workers from both formal and informal categories.
- **The Code defines Platform Work** as a work arrangement outside of a traditional employer - employee relationship in which organisations or individuals use an online platform to access other organisations or individuals to solve specific problems or to provide specific services or any such other activities which may be notified by the Central Government, in exchange for payment.
- **According to NITI Aayog's 2022 report** 'India's Booming Gig and Platform Economy,' the gig workforce is expected to reach 23.5 million by 2029-30. Presently around 77 lakh workers (1.5% of workforce) are employed in the Gig Economy and it is expected to increase to 2.35 crore workers by 2029-30.



LACK OF CLEAR CLASSIFICATION OF GIG WORKERS IN PLFS

All market activities performed for pay or profit, including gig work, fall under the scope of economic activity in the PLFS.

- One of the major challenges is lack of clear classification of Gig Workers in India's primary labour statistics source, the Periodic Labour Force Survey (PLFS).
- Gig workers are subsumed under broad categories such as 'self-employed', 'own-account workers', or 'casual labour' in the PLFS.

IT HAS FOLLOWING IMPLICATIONS

- **Lack of a distinct category leads to statistical invisibility**, making gig workers' vulnerabilities and working conditions under-represented in official data.
- **Uneven access to welfare schemes and exclusion errors:** Social protection schemes under the Code on Social Security, 2020 such as the Social Security Fund and the National Social Security Board depend on PLFS data for evidence-based policy making. However, absence of a distinct classification for gig and platform workers in the PLFS undermines the goal of evidence-based policymaking. Inaccurate classification results in uneven access to welfare schemes and exclusion errors.

The 2025 PLFS revision introduced some important updates: a larger sample size, monthly estimates, and better rural representation. However, it still does not address the issues of how gig work is defined and understood.

CHALLENGES FACED BY GIG WORKERS

- **Social security:** Platform workers in India are predominantly paid a piece rate (i.e., Per task) and are

classified by the platforms as “Independent contractors”. As a result, workers do not benefit from labour regulations pertaining to wages, hours, working conditions, and the right to collective bargaining.

- **Safety and health risk:** Due to the demanding work hours, drivers are physically exhausted, and exposed to an increased risk of road traffic accidents, especially due to the ‘10-minute delivery at the doorstep’ policy of certain e-commerce platforms.
- **Algorithmic control:** Platforms are criticised for having opaque algorithms, imposing excessive control over their workers through “ratings-based reputation systems”, assigning “disproportionate power” to customers over workers, and causing significant risk to workers who are unfairly penalised based on customer feedback.
- **Modest pay:** Many app-based cab drivers and delivery workers are having a hard time covering their costs because they're paid too little. For example, Blinkit pays a minimum of only Rs 15 for each delivery.
- **Issues with labour codes:** Among the four proposed new labour codes, only the Code on Social Security mentions gig work. Despite receiving the assent of the President, the Labour Codes are still awaiting implementation 4 years on.

WAY FORWARD

According to NITI Aayog:

- **Platformisation:** Platform India initiative can be launched similar to Start-up India, to make platforms simpler and provide support through funding, incentives, skill development, and financial inclusion.
- **Need regulations** to ensure that companies establish fair and transparent payment structures to protect gig workers from being underpaid or exploited by companies.
- **Platform-led models for skilling and job creation:** Platforms can collaborate with the Ministry of Skill Development and Entrepreneurship and the National Skill Development Corporation (NSDC) to nurture skilled workers and micro-entrepreneurship.
- **Gender Sensitisation & Accessibility Awareness Programmes for workers and their families:** Platform businesses can undertake partnerships with Civil Society Organizations (CSOs) to enable different sections of workers such as women workers and

PwDs to take up employment opportunities in the platform sector through skill development, access to finance and assets.

- **Occupational Disease and Work Accident Insurance:** On the lines of Indonesia’s initiatives in offering accident and other insurance to platform workers, may adopt such a model for providing accident insurance to all delivery and driver partners, and other platform workers across India.
- **RAISE Framework for Operationalising the Code on Social Security (CoSS), 2020:** As Central and State governments draw up rules and regulations under CoSS 2020, they could adopt the five-pronged RAISE approach to ensure realisation of full access to social security for all gig and platform workers:
 - **Recognise** the varied nature of platform work to design equitable schemes.
 - **Allow augmentation** of social security through innovative financing mechanisms.
 - **Incorporate**, while designing schemes, the specific interests of platforms, factoring the impact on job creation, platform businesses and workers.
 - **Support workers** to subscribe to government schemes and welfare programmes through widespread awareness campaigns.
 - **Ensure benefits** are readily accessible to workers.
- **Official labour survey reports** such as PLFS should collect data related to Gig Workers.

GLOBAL PRACTICES

- **In 2021, the United Kingdom** recognised Uber drivers as ‘workers’ under the UK Employment Rights Act 1996.
- **Germany’s** Temporary Employment Act ensures gig workers receive **equal pay and treatment**.

WHO’S ‘3 BY 35’ INITIATIVE

#HEALTH #INTERNATIONAL ORGANISATIONS

PRIMARY SOURCE THE HINDU

World Health Organisation (WHO) has launched the “3 by 35” Initiative calling on countries to raise ‘Health tax’ or ‘Sin tax’ on tobacco, alcohol, sugary drinks by **at least 50%** by the year 2035.

WHO’S 3 BY 35 INITIATIVE

- It is a global effort to increase the real prices of any or all of three unhealthy products – tobacco, alcohol, and sugary drinks by at least 50% by 2035 through tax increases, while taking into account each country's unique context.

KEY ACTION AREAS OF THE INITIATIVE

- **Cutting harmful consumption by reducing affordability:** Increase or introduce excise taxes on tobacco, alcohol, and sugary drinks to raise prices and reduce consumption, cutting future health costs and preventable deaths.
- **Raising revenue to fund health and development:** Mobilise domestic public resources to fund essential health and development programmes, including universal health coverage. The initiative aims to raise \$1 trillion over the next 10 years.
- **Building broad political support across ministries, civil society, and academia:** Strengthen multi sectoral alliances by engaging ministries of finance and health, parliamentarians, civil society, and researchers to design and implement effective policies.

SIGNIFICANCE OF HEALTH TAX/ SIN TAX

- **Prevent global NCD burden:** Consumption of tobacco, alcohol and sugary drinks is fuelling the Non-Communicable Diseases (NCD) epidemic which accounts for over 75% of all deaths worldwide. A recent report shows that a one-time 50% price increase on these products could prevent 50 million premature deaths over the next 50 years.
- **Augment shrinking development aid and growing public debt:** These taxes cut the consumption of harmful products and create revenue governments can reinvest in healthcare, education and social protection.

INDIA'S EFFORTS

- India has **implemented tobacco taxation** under the GST framework, with 28% GST and an additional compensation cess on cigarettes and select products.
- However, bidis (smoked by low-income groups) and smokeless tobacco (SLT) (used by over two-thirds of tobacco users) **remain under-taxed**.

India's current approach to taxing tobacco, alcohol and sugar-sweetened beverages **represent a fragmented, revenue-centric model** that lacks a coherent public health framework.

IS PALM OIL BAD FOR HEALTH?

#HEALTH

PRIMARY SOURCE The Indian EXPRESS

*Indian Food and Beverage Association (IFBA) issued a statement that Palm Oil has been consumed by Indians since the 19th century, and that the **oil has a well-rounded fatty acid profile**. As per IFBA, the use of labels such as palm oil free or no palm oil are misleading.*

ABOUT PALM OIL

- Palm oil is among the most affordable and versatile edible oils valued for its long shelf-life and neutral taste.
- **Utility:**
 - Packaged foods including- potato chips, biscuits, ice cream, and chocolates.
 - Non-food industry- soaps, shampoos, detergents, lipsticks, perfumes.
 - Biodiesel production.

CONTENTS OF OIL AND HEALTH CONCERNS

- All oils mainly contain **three types of fatty acids:**
 - Bad- saturated fatty acid (SFA)
 - Good- mono-unsaturated fatty acid (MUFA)
 - Good- Poly-unsaturated fatty acid (PUFA).
- Fats that remain solid or semi-solid at room temperatures- including palm oil, coconut oil, ghee, butter, and lard - are high in saturated fatty acids (SFA).
 - **Coconut** oil (90 grams/ 100 grams of oil) and **ghee** (70 grams/ 100 grams of oil) have the highest SFA content.
 - **Palmolein** (the liquid part of palm oil) contains around **40 grams of SFA** and 40 grams of MUFA, with the rest PUFA.
 - **Mustard, Safflower, and Sunflower** have the lowest **SFA content** less than 10 grams per 100 gram of oil.
- Apart from fatty acids, **Trans Fatty Acids (TFA)** are produced during the hydrogenation of liquid vegetable oils. (Hydrogenation- Addition of Hydrogen atoms into such oils converts liquid oil to semi-solid, and increases their shelf-life)

- **Consumption of oils with high SFA** increases the levels of bad cholesterol (low density lipoproteins). This in turn increases inflammation in the body, decreases insulin sensitivity, and enhances the tendency of clot formation. Consuming such oils can increase the risk of heart attacks and strokes, as well as the onset of type-2 diabetes.
- **Consumption of TFAs** can increase the risk of diabetes, breast cancer, colon cancer, pre-eclampsia (high blood pressure during pregnancy), and disorders of the nervous system.

IS PALM OIL BAD FOR HEALTH?

- **Palmolein** (the liquid part of palm oil) contains around **40 grams of SFA** and 40 grams of MUFA, with the rest PUFA.
- Palm oil is semi-solid at room temperature so it **does not need to be hydrogenated**.
- Palm oil contains **tocotrienols** (a type of antioxidant) which helps lower blood cholesterol levels.

Hence, the oil consumption should be done in moderation.

INDIAN DIETARY GUIDELINES BY ICMR

As per the Indian Dietary Guidelines by ICMR (Indian Council of Medical Research):

- Consumption of oil should be limited to between 20 and 50 grams (four to 10 teaspoons) per person per day.
- Oils should not be reheated. Because once heated, PUFAs in the oil start to oxygenate, and form harmful compounds that increase the risk of cardiovascular disease and cancers.

KEY FACTS ABOUT PALM OIL

- India is the **world's largest importer** and **second-largest consumer of palm oil**.
- Palm oil import dominates India's edible oils import. The top import countries are: Indonesia and Malaysia.
- Indonesia is the world's largest producer of palm oil. Indonesia and Malaysia together account for almost 90% of the global palm oil production.
- Major oil palm-growing states in India: Andhra Pradesh, Telangana, and Kerala.
- The central government has launched the **National Mission on Edible Oils-Oil Palm (NMEO-OP)** in 2021 to increase oil palm cultivation and crude palm oil production.

PRACTICE QUESTIONS

MCQS

Q1. Which of the following are the features of the National Education Policy (NEP) 2020?

1. 12 years of schooling with three years of pre-schooling
2. Implementation of two language formula in schools
3. Attaining Foundational Literacy and Numeracy
4. Increasing Gross Enrolment Ratio in higher education

Select the correct answer using the code given below:

- (a) 1 and 2 only (b) 2, 3 and 4 only
 (c) 1, 3 and 4 only (d) 1, 2, 3 and 4

Q2. Consider the following statements regarding PARAKH-RS 2024:

1. It is conducted by the Ministry of Education.
2. It replaced the National Achievement Survey (NAS).
3. It focuses on assessing only private schools.

Which of the above statements is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only
 (c) 1 and 3 only (d) 1, 2 and 3

Q3. Consider the following statements with reference to Pradhan Mantri Matru Vandana Yojana:

GEOGRAPHY, ENVIRONMENT, BIODIVERSITY & DISASTER MANAGEMENT

GS PAPER (PRELIMS) AND GS PAPER I & III (MAIN)

ROLE OF M.S. SWAMINATHAN IN MANGROVES CONSERVATION

#CONSERVATION # MANGROVES

PRIMARY SOURCE THE HINDU

July 26 is observed as the **International Day for the Conservation of the Mangrove Ecosystem**. At the national level, **M.S. Swaminathan** was instrumental in revolutionising India's management of Mangroves.

WHAT ARE MANGROVES?

Mangroves are salt-tolerant trees and shrubs that grow in intertidal coastal zones, where the land meets the sea, especially in tropical and subtropical regions.

KEY FEATURES OF MANGROVES

- **Halophytes:** They thrive in salty brackish water.
- **Aerial Roots (Pneumatophores):** Help in breathing in oxygen-poor (anaerobic) soil.
- **Vivipary:** Seeds germinate while still on the parent tree—a unique adaptation.
- **Buttress and Prop Roots:** Provide stability in loose, waterlogged soils.
- **Habitat:** Found in estuaries, lagoons, backwaters, and river deltas.

ECOLOGICAL IMPORTANCE

- **Coastal Protection:** Act as natural barriers against tsunamis, cyclones, storm surges, and erosion.
- **Carbon Sink:** Store large amounts of carbon—called "blue carbon".
- **Biodiversity Hotspots:** Provide breeding grounds for fish, crabs, mollusks, and migratory birds.
- **Water Purification :** Filter sediments and pollutants from water flowing to the sea.



MANGROVES IN INDIA

- According to the **India State of Forest Report (ISFR) 2023**, the total mangrove cover in India is 4,991.68 sq. km, which constitutes **0.15% of the country's total geographical area**.
- Compared to ISFR 2019, there has been a **net increase** of 16.68 sq. km in mangrove cover across India.
- Mangroves are known by different local names across various regions of India: Sundari Forest in West Bengal, Tivar Forest in Gujarat, Kandal Forests in Kerala etc.

CONTRIBUTION OF M.S SWAMINATHAN IN MANGROVES CONSERVATION:

M.S Swaminathan played a pivotal role in mangrove restoration, conservation and management.

- **Highlighted mangroves as a key solution** to rising sea levels and cyclones at a Tokyo conference on climate change, at the climate change and Human Responses Conference in Tokyo in 1989.
- **Proposed sustainable mangrove management** as a climate adaptation measure, rooted in:
 - Ecology- preserving coastal ecosystems
 - Economics- protecting livelihoods
 - Equity- involving local communities
- **Proposed using mangrove genes** to develop salt-tolerant crops like rice.
- **Co-founded the International Society for Mangrove Ecosystems (ISME)** and served as its first president (1990-93). ISME conducts assessment of economic and environmental values of mangrove forests, organises workshops on mangrove conservation and sustainable utilization, public World Mangrove Atlas.
- **Co-created the Charter for Mangroves** and included it in the World Charter for Nature, prepared by the United Nations conference on Environment and Degradation.
- Supported creation of the **Global Mangrove Database and Information System (GLOMIS)** to document mangrove experts, research, and species.
- Guided the evaluation of 23 mangrove sites across nine countries, leading to a global network of Mangrove Genetic Resource Centres.

REVOLUTIONISED INDIA'S MANAGEMENT OF MANGROVES

- Moved attention from blaming local communities to identifying ecological causes of mangrove degradation, instead highlighted clear-felling and altered bio-physical conditions as the real cause of mangrove degradation.
- Introduced the **fishbone canal method**, a hydro-ecological technique successfully tested in Tamil Nadu, Andhra Pradesh, Odisha, and West Bengal. This technique is used to artificially inundate areas that do not get regular tidal inundation.
- Advocated for **Joint Mangrove Management (JMM)** involving local communities and State Forest Departments,

- His efforts led to increased government investments in mangrove conservation, especially after the 1999 Odisha cyclone and 2004 tsunami.

INDIA MUST RECOGNISE ITS OPEN ECOSYSTEMS

#CONSERVATION #LAND DEGRADATION

PRIMARY SOURCE | THE HINDU

*Deserts and other open ecosystems are often viewed as barren or degraded lands. Land degradation is now synonymously used with desertification. However, a **functioning desert** with its intricate food webs, seasonal rhythms and cultural continuities also **holds significance and is far more alive than a monoculture plantation.***

DESERT AND OTHER OPEN ECOSYSTEMS

- **Deserts and other open ecosystems** such as grasslands, savannas, scrublands, and open woodlands are often viewed as degraded lands or broken ecosystems which need to be fixed.
- On official maps, millions of hectares of these ecosystems are classified as **wastelands**- a term inherited from colonial land-use categories.
- In policy terms, a **wasteland** is seen as land waiting to be corrected usually by (i) planting trees, (ii) converting it into agriculture, (iii) paving it over for industrial use. This perception has led to large-scale efforts to "green" deserts through afforestation, irrigation schemes, and even climate engineering.
- However, this **narrow view ignores the deep ecological, historical and cultural significance of deserts** and other open landscapes.

SIGNIFICANCE OF DESERT ECOSYSTEMS

Deserts occupy nearly **one-third of the Earth's terrestrial surface**, and are home to uniquely adapted plants, animals, and human cultures.

- India's deserts, grasslands and savannas are **home to rare and endemic species** like the Great Indian Bustard, caracal, and Indian wolf which are not found elsewhere.
- These ecosystems **store carbon deep in the soil.**
- Millions of **pastoral groups** such as the **Dhangar, Rabari, Kuruba etc** depend on these ecosystems for grazing.

- These landscapes **support rich indigenous knowledge systems** related to animal husbandry, grazing cycles, and weather patterns.
- **Early civilisations** such as Mesopotamia, Egypt, and the Indus Valley emerged in desert climates. The harsh desert conditions prompted humans to develop complex societies and technologies that could invent ingenious ways of irrigation to survive in otherwise inhospitable conditions.

WAY FORWARD

We need policies that recognise ecosystem diversity, reward soil carbon storage, and support pastoralist land use.

- Deserts, grasslands, and savannas should be **recognised as distinct valuable ecosystems**- not wastelands.
- Shift from the term “desertification” to “land degradation” to avoid unjust vilification of deserts.
- **Reversing degradation** in drylands requires **careful restoration** that respects native vegetation, focuses on soil and moisture conservation, and draws from indigenous knowledge of land management.
- Recognise pastoral communities as biodiversity stewards and integrate their traditional knowledge into restoration policies.
- **Low-tech solutions** like water harvesting, rotational grazing, and protecting natural regrowth in place of greenwashing projects that aim to plant millions of trees to “green” the desert.

CHALLENGES IN FOREST GOVERNANCE IN INDIA

#CONSERVATION #GOVERNANCE



Recently, the Chhattisgarh Forest Department has designated itself as the nodal agency for implementing **Community Forest Resource Rights** under the **Forest Rights Act, 2006**. This has sparked backlash from Gram Sabhas and Tribal Rights Groups.

THE FOREST RIGHTS ACT 2006

- The **Forest Rights Act 2006** was enacted in 2006 and came into force in 2008. Also known as Schedule Tribes and Other Traditional Forest Dwellers Act.

- The Act recognises and grants legal rights over land and forest resources to Forest Dwelling Scheduled Tribes (FDST) and Other Traditional Forest Dwellers (OTFD) who have been residing in such forests for generations.
- A key component is the **Community Forest Resource Rights (CFRR)**, which:
 - Empowers Gram Sabhas to manage, protect, and conserve their customary forest areas. **Gram Sabha is the nodal authority** for initiating claims and managing community forests.
 - Recognises traditional knowledge, practices, and sustainable forest use.
 - **Transfers authority** from state-led forest departments to community-led governance.

Rights Under Forests Rights Act (FRA)

Individual Forest Rights

- Right to live on and cultivate forest land up to 4 hectares.
- Applicable to STs and OTFDs living in forest areas before 13 Dec 2005.
- Land is heritable, but not transferable or saleable.

Community Forest Rights

- Rights to access, use, and dispose of minor forest produce (MFP) like tendu, honey, bamboo, etc.
- Also includes grazing, fishing, and access to water resources.

Community Forest Resource Rights

- Right to protect, regenerate, conserve, and manage forest used traditionally.
- Managed by the Gram Sabha (village assembly), not forest department.

Habitat Rights for PVTGs

- Recognises rights of Particularly Vulnerable Tribal Groups to their customary habitats and livelihood practices.
- Includes right to access forests, water, grazing, and sacred groves.

Cultural & Intellectual Property Rights

- Recognition of community intellectual property, including traditional knowledge, spiritual sites, cultural diversity.

RECENT CONTROVERSY IN CHHATTISGARH

Recently, the Chhattisgarh Forest Department attempted to designate itself as the nodal agency for CFRR implementation under the Forest Rights Act 2006. This action:

- Contravenes the FRA which vests authority in Gram Sabhas.
- Violates gram sabhas' statutory authority to implement locally developed management plans in their community forest resource (CFR) areas by insisting on a model plan from the Ministry of Tribal Affairs (MoTA), though not mandated by law.
- Prohibits NGOs and other departments from assisting Gram Sabhas in Community Disaster Risk Reduction (CDRR) management planning.

Following grassroots resistance, the letter was withdrawn. However, it **reflects a broader institutional reluctance to cede control to local communities.**

KEY ISSUES IN FOREST MANAGEMENT IN INDIA

- **Colonial Legacy of Scientific Forestry:** Forest management in India is still rooted in the colonial model of forestry focused on timber extraction, not ecosystem health or community welfare. Early working plans even recommended clear-felling natural forests and replacing them with monoculture plantations.
- **Top down Working Plans:** Forest departments continue to rely on working plans guided by the National Working Plan Code (NWPC). These plans are bureaucratic, top-down, and often disregard local ecological and livelihood needs.
- **Resistance to Decentralisation:** Despite FRA's mandate, forest departments resist transferring control to Gram Sabhas. Over 10,000 Gram Sabhas have received CFRR titles, but fewer than 1,000 have prepared management plans. Forest departments often delay claims, revoke titles, deny funds, and refuse to recognise community plans- undermining decentralised forest governance.
- **Inadequate Adaptation to Ecological Realities:** Forest working plans are rigid and linear, poorly suited to climate change and ecosystem complexity.

WAY FORWARD

- **Uphold FRA Provisions:** The Ministry of Tribal Affairs (MoTA) must reaffirm that Gram Sabhas are the sole authority in CFR management.

- **Phase out NWPC** (National Working Plan Code) for Community Forest Resource areas with contextual, adaptive, and locally prepared plans.
- **Capacity Building & Support:** Forest departments should facilitate rather than obstruct; funding and training must be ensured.
- **Use Flexible Frameworks:** Initiatives like the Dharti Aaba Janjatiya Gram Utkarsh Abhiyan should be scaled and improved.
- **Promote People-Centric forest management:** Shift from timber extraction to community-led conservation and resilience.

India's forest management needs to shift from timber-oriented bureaucracy to community-driven, ecologically sensitive governance. Recognising the Gram Sabha as the central planning authority, as per the FRA, is essential for sustainable and inclusive forest conservation.

POWER CORRIDORS THROUGH GREAT INDIAN BUSTARD HABITAT

#SPECIES IN NEWS #BIODIVERSITY

PRIMARY SOURCE THE HINDU

*The Supreme Court panel has proposed **power corridors** to reroute overhead power lines in Bustard habitats in Gujarat and Rajasthan. The idea behind creating power corridors is to ensure that birds, especially in high-risk habitats are not forced to repeatedly navigate through a maze of criss-crossing power lines.*

GREAT INDIAN BUSTARD

- A large bird of the bustard family, it is one of the **heaviest flying birds** in the world.
- **Physical characteristics and behaviour:**
 - Black crown on the forehead contrasting with the pale neck and head.
 - The body is brownish and the wings are marked with black, brown and grey.
 - Males and females generally grow to the same height and weight but males have larger black crowns and a black band across the breast.
 - They breed mostly during the monsoon season when females lay a single egg on open ground.

- Males play no role in the incubation and care of the young, which remain with the mother till the next breeding season.
- They feed on grass seeds, insects like grasshoppers and beetles, and sometimes even small rodents and reptiles.

● **Habitat:**

- Bustards generally favour flat open landscapes with minimal visual obstruction and disturbance, therefore adapt well in grasslands.
- They avoid grasses taller than themselves and dense scrub like thickets.

- **Distribution:** Its population is confined mostly to Rajasthan and Gujarat. Small populations occur in Maharashtra, Karnataka and Andhra Pradesh.



THREATS

The estimated population of the large bird- once considered a candidate for national bird- is below 150.

- Owing to its poor vision, the GIB is at high risk of injury and death due to collisions with high tension electric wires.
- Hunting and Occasional poaching for eggs outside Protected Areas
- Fast moving vehicles
- Free-ranging dogs in villages.
- Habitat loss and alteration as a result of widespread agricultural expansion and mechanised farming.
- Infrastructural development such as irrigation, roads, electric poles, as well as mining and industrialisation.

CONSERVATION STATUS

- **IUCN Status:** Critically Endangered
- **Indian Wildlife (Protection) Act 1972:** Schedule I
- **CITES:** Appendix-I
- Declared as the state bird of Rajasthan.

CONSERVATION EFFORTS BY GOVERNMENT OF INDIA

- Listed in Schedule-I of the Wild Life (Protection) Act, 1972, thereby accorded the highest degree of legal protection from hunting.

- Important habitats of Great Indian Bustards are designated as National Parks/ sanctuaries for their better protection.
- Identified for conservation efforts under the component '**Species Recovery Programme**' of the Centrally Sponsored Scheme- Development of Wildlife Habitats.
- **Conservation breeding** has been undertaken in collaboration with Rajasthan, Gujarat and Maharashtra Forest Departments with technical support of Wildlife Institute of India, Dehradun.
- **A satellite conservation breeding facility** has been established at Sam, Jaisalmer, Rajasthan.

GREAT HORNBILL

#SPECIES IN NEWS #BIODIVERSITY

PRIMARY SOURCE THE HINDU

*In a rare sighting, **Great Hornbill was spotted** in the coastal belt of Kannur, Kerala, far from its usual forested habitats. It is rarely seen in coastal areas; its unexpected presence is hailed as an ecological indicator and points to the broader ecological value of the region.*

ABOUT GREAT HORNBILL

- The great Indian Hornbill is one of the larger members of the Hornbill family.
- **Habitat:** It occurs in the Indian subcontinent and Southeast Asia, typically found in the evergreen and moist deciduous forests.
- India is home to **nine species of hornbills** of which:
 - Great Hornbill, Malabar Pied Hornbill, Malabar Grey Hornbill and Indian Grey Hornbill are found in the **Western Ghats**.
 - Great Hornbill, Rufous-necked Hornbill, Wreathed Hornbill, Oriental Pied Hornbill, and White-throated Brown Hornbill are found in **North East India**.
 - Narcondam Hornbill (rare and endemic: IUCN-Endangered) is found only on Narcondam Island in **Andaman Sea**.
 - Hornbills have also been sighted in Northern Himalayas (**Uttarakhand**).



PHYSICAL CHARACTERISTICS AND BEHAVIOUR

- It is predominantly **frugivorous** (feeds on fruit) but also preys on small mammals, reptiles and birds.
- The most prominent feature of the hornbill is the **bright yellow and black casque** (helmet) on top of its massive bill.
- Large bird- 95-130 cm long and weighs nearly 2-4 kg.
- Females are smaller than males and have bluish-white instead of red eyes.
- Hornbills are secondary-cavity nesters, i.e., they nest in tree cavities made by other birds. They tend to use the same nest year after year.

THREATS

- Habitat loss due to deforestation.
- Hunted for its meat, fat and body parts like- casque and tail feathers (used as adornments). Beaks and heads are used in charms, and the flesh is believed to be medicinal.

CONSERVATION STATUS

- **IUCN Status:** Vulnerable
- **Indian Wildlife (Protection) Act 1972:** Schedule I
- **CITES:** Appendix-I

INDIA ACHIEVES 50% NON-FOSSIL FUEL POWER CAPACITY

#CLIMATE CHANGE #GOVERNMENT POLICIES



As per the latest data from the Ministry of New and Renewable Energy, India has achieved **50% of its installed electricity capacity (242.8 GW) from non-fossil fuel sources** out of the total 484.8 GW installed capacity five years ahead of its 2030 target.

INDIA'S CLIMATE COMMITMENT GOALS

- India submitted its **updated Nationally Determined Contributions (NDCs)** under the Paris Agreement to the United Nations Framework Convention on Climate Change (UNFCCC) in 2022. India aims to:

- **Achieve 50% of its installed electric power capacity** from non-fossil fuel sources by 2030.
- Reduce its **GDP emission intensity by 45% by 2030** compared to 2005 levels.
- Create an **additional carbon sink** of 2.5 to 3 billion tonnes of carbon dioxide equivalent from forest and tree cover by 2030.
 - At COP26 (Glasgow, 2021), India announced its long-term goal to achieve the target of **net zero greenhouse gas emissions by 2070**.

Sector	Capacity (in GW)	Percentage
Thermal	242.04 GW	(49.92%)
Non-Fossil Fuel (RE+ LH+Nuclear)	242.78 GW	(50.08%)
Total	484.82 GW	(100%)

RE= Renewable Energy LH = Large Hydro

INDIA ACHIEVES 50% NON-FOSSIL FUEL POWER GENERATION CAPACITY

As per the latest data from the Ministry of New and Renewable Energy-

- India has achieved **50% of its installed electricity capacity** (242.8 GW) from non-fossil fuel sources out of the total 484.8 GW installed capacity in June 2025, five years ahead of its 2030 target.
- The 50% share of non-fossil sources in installed electricity capacity was contributed by sources such as large hydropower, nuclear, and **renewable energies** like wind and solar. **E.g.,** In 2024 almost 30 GW of renewable energy was installed, of which solar energy stood at nearly 24 GW.

FUTURE TARGETS

- India's stated climate objective is to achieve at least **500 GW** of non-fossil fuel-based electricity capacity by 2030. For the target to materialise, significant contributions need to come from nuclear power.
- India's current nuclear energy capacity is **8.78 GW**. India is currently building 10 nuclear reactors that are expected to become operational during this timeframe to scale this capacity to about 17 GW by 2030.

ENERGY CAPACITY VS GENERATION

- The 50% share of non-fossil fuels in installed capacity does not mean half of India's electricity is clean. Electricity generation from renewable sources is intermittent and dependent on timing, seasonality, and climate. As such, the **share of non-fossil fuels in electricity generation is lower than its share in installed capacity.**
- Data from the Central Electricity Authority show that in May 2025, **non-fossil fuel sources**, including large hydro and nuclear, accounted for **28% of electricity generation** in India.
- Electricity itself forms a **small part of the energy basket.** Less than 22% of India's total energy consumption is done in the form of electricity. The rest happens through **direct burning of fossil fuels** such as oil, coal and gas.

Therefore, electricity forms about 22% of India's total energy consumption, and non-fossil fuel sources account for about 28% of electricity generation. This means **clean energy from non-fossil fuel sources accounts for just about 6%** of India's total energy consumption.

PROGRESS ON FORESTRY TARGET

- According to official data submitted to UNFCCC, about **2.29 billion tonnes of additional carbon sink** has already been created by 2021.
- It is estimated that India has likely added 2.5 to 3 billion tonnes of additional carbon sink. (Official data is to be released soon by the next edition of India State of the Forest Report).

EMISSIONS INTENSITY TARGET

- There is less information on the progress being made on the emissions intensity target. India aimed to reduce its emissions per unit of GDP at least 45% from 2005 levels by 2030.
- The latest data (2020) on emissions intensity show that India had already reduced it by 36% from 2005 levels.

POLICY-DRIVEN PROGRESS FUELLING CLEAN ENERGY GROWTH

The achievements reflect the success of policy design and implementation of key Flagship programmes such as:

- **PM-KUSUM** (Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan) empowered lakhs of farmers by providing solar-powered pumps enabling sustainable agriculture, and opened avenues for Agrovoltatics and feeder-level solarisation.

- **PM Surya Ghar Yojana**- brought about the rooftop revolution fostering decentralised energy generation.
- Solar Park Development
- National Wind-Solar Hybrid Policy

WAY FORWARD

India can further expand renewable power generation by-

- Getting access to international finance and technology that it is entitled to under the provisions of the Paris Agreement
- Expanding the deployment of Battery Energy Storage Systems (BESS)
- Deployment Pumped Hydro Storage
- Accelerated investments in Green Hydrogen
- Accelerating the deployment of Bharat Small Modular Reactors.

As the country moves toward the goal of 500 GW of non-fossil capacity by 2030 and net-zero emissions by 2070, the path forward must be inclusive and driven by technology.

ASSESSING INDIA'S CARBON CREDIT TRADING SCHEME TARGETS

#CONSERVATION #CLIMATE CHANGE

PRIMARY SOURCE THE HINDU

*The Indian government recently notified greenhouse gas (GHG) emissions intensity targets for entities across key industrial sectors under the **Carbon Credit Trading Scheme (CCTS).***

CARBON CREDIT TRADING SCHEME (CCTS)

- Launched in 2023 under the Energy Conservation (Amendment) Act 2022.
- It is a market based mechanism designed to reduce greenhouse gas emissions by pricing carbon and facilitating trading of carbon credits.
- CCTS introduces carbon pricing through two key mechanisms to ensure comprehensive carbon reduction efforts.
 - **Compliance Mechanism:** Mandates energy-intensive industries to meet sector-specific GHG reduction targets. Entities that emit below their set intensity targets earn Carbon Credit Certificates

(CCC); while those exceeding targets must purchase credits or face penalties.

- **Offset Mechanism:** Allows voluntary participation from entities outside the compliance framework to earn carbon credits by reducing emissions.
- As of now, 8 heavy industrial sectors are included under the compliance mechanism of CCTS: Aluminium, Cement, Paper and Pulp, Chlor-Alkali, Iron and Steel, Textiles, Petrochemicals, Petroleum Refineries.
- **Administered by:** multiple bodies like the Bureau of Energy Efficiency (BEE) and the National Steering committee for the Indian carbon market.
- Trading of Carbon Credit is expected to begin by October 2026.
- The CCTS aims to help India achieve its Nationally Determined Contribution (NDC) target of reducing the emissions intensity of its GDP by 45% by 2030 from 2005 levels.



ASSESSMENT OF INDIA'S CARBON CREDIT TRADING SCHEME

Lack of Ambitious Targets:

- India's overall energy emissions intensity is projected to decline by 3.44% per year from 2025 to 2030. The manufacturing sector should ideally reduce its emissions intensity by 2.53% per year.
- But current CCTS targets for industries show only a 1.68% per year drop. This suggests the CCTS targets are not ambitious enough to achieve India's NDC targets and decarbonisation goals.

Limited Sectoral Coverage:

- CCTS currently covers only 8 of the 9 heavy industrial sectors.

- Several major emitters are excluded like- thermal power plants, transport, agriculture, and MSMEs, limiting the scope and impact of the scheme.

Sectoral vs. Economy-Wide Focus

- The scheme largely focuses on sectoral/entity-specific targets rather than an integrated, economy-wide reduction strategy. This narrow focus on select industrial players may risk intra-sector credit trading without meaningful reduction in national-level emissions.

A robust carbon market should drive aggregate decarbonisation with participation of major sectors, and not just trading between a few large players.

EU'S NEW CLIMATE GOAL AND CARBON CREDITS

#CARBON CREDITS #CLIMATE CHANGE

PRIMARY SOURCE | The Indian EXPRESS

The European Union (EU) includes **International CO2 credits in the climate goal** for the first time.

EU'S NEW CLIMATE GOAL AND CARBON CREDITS

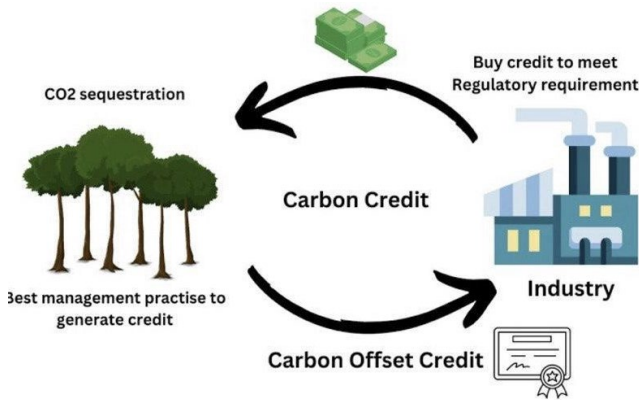
- The European Union has proposed a legally-binding climate target to cut net greenhouse gas emissions by **90% by 2040 from 1990 levels**.
- This proposal introduces a notable flexibility to member states which will **allow them to use carbon credits purchased from developing nations** to meet a limited portion of their emissions offsetting target.
- The EU is allowing **up to 3% of its target to be met using carbon credits** purchased from developing countries, via a UN-backed market from 2036 onwards.

The EU's existing climate targets require countries to meet the goals entirely by cutting emissions at home.

What are Carbon Credits ?

- Carbon credits are tradable permits or certificates that allow the holder to emit one ton of carbon dioxide or its equivalent in other greenhouse gases.

- It involves funding project that reduce CO2 emissions abroad in place of cuts to your own greenhouse gas emissions.
- Examples include forest restoration in Brazil, or converting a city's petrol busses to electric.
- The buyer counts credits for those emission reductions towards it's climate goal, and the seller gets finance for their green project.



This also raises questions over the effectiveness of carbon-credits: if they are a verifiable tool to drive global emission reductions, or do they **risk becoming another form of greenwashing**, allowing wealthier nations to offset rather than truly transform their domestic economies.

CLIMATE CHANGE IS FUELLING WILDFIRES IN EUROPE

#CLIMATE CHANGE #WILDFIRES

PRIMARY SOURCE THE HINDU

Wildfires are raging in several Mediterranean countries, including Spain and France, after the increased heat waves incidents in Europe.

WILDFIRES IN EUROPE: KEY TRENDS

- Wildfires have burnt over 2.2 lakh hectares of land since January 2025 in Europe. This is more than double the average for this time of year over the past two decades.
- The number of wildfire incidents have also surged. This has forced thousands of people to evacuate their homes.

FACTORS FAVORABLE FOR WILDFIRES

- **Hot summer and strong winds:** The Mediterranean region's hotter, drier summers put it at high risk of wildfires. Once fires start, plentiful dry vegetation and strong winds in the region can cause them to spread rapidly and burn out of control.
- **Climate change:** As per the World Meteorological Organisation (WMO), Europe has warmed at twice the global average since the 1980s. That warmer baseline means higher temperatures can be reached during heatwaves, which exacerbates the risk of wildfires.

EUROPE'S NEW CLIMATE REALITY

Greenhouse gas emissions, mainly from burning coal, oil and gas, have heated the planet by about 1.3 degrees Celsius since pre-industrial times.

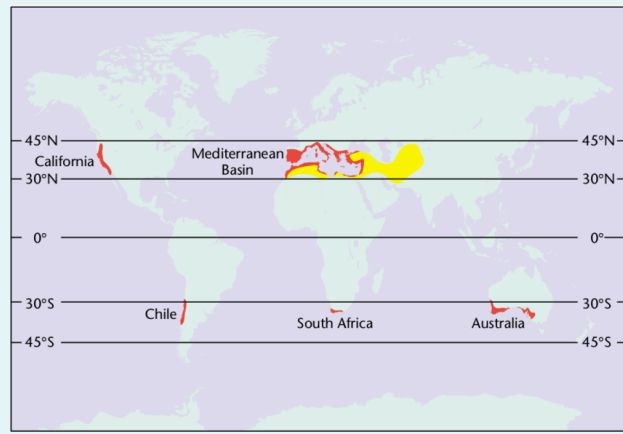
- **Europe is the fastest-warming continent** as it is witnessing an average temperature rise of around 0.5 degrees Celsius per decade compared to 0.2 degrees Celsius globally. The continent is experiencing an increase in the frequency of heatwaves in recent years.

REASONS INCLUDE

- **Europe's proximity to the Arctic region-** which is by far the fastest-warming part of Earth. As a result, the Arctic region contributes to the soaring temperatures in Europe, making it more vulnerable to heatwaves.
- **Feedback systems:** In continental regions like Europe, rising temperatures increase evapotranspiration, causing rapid dried-out soil moisture. This leads to positive feedback- Dried-out soils send more sensible heat back into the atmosphere, which warms up and further aggravates aridity.
- **Changes in the behaviour of jet streams** (rapid currents encircling the Earth from west to east at high altitudes). Recent studies show that Europe is increasingly becoming vulnerable to a phenomenon called **double jet stream**. This occurs when the main jet stream temporarily splits in two branches. This results in an area of weak winds and high-pressure air between the two branches that causes extreme heat. Double jet streams become more common when land mass heats up in early summer.

MEDITERRANEAN TYPE OF CLIMATE

- A Mediterranean climate, or **dry summer climate** is a major climate type described by **Köppen classification**.
- The temperate climate occurs in the lower mid-latitudes (normally 30° and 45° latitude North and South of the Equator)
- Such climates typically have **hot, dry summers and cool, wet winters**, with summer conditions being hot and winter conditions typically being mild (winter rain climate).
- **Mediterranean vegetation:** Trees with hard, waxy leaves to reduce water loss; Evergreen shrubs, bushes etc.



ICJ'S CLIMATE RULING AND ITS SIGNIFICANCE

#INTERNATIONAL INSTITUTIONS #CONSERVATION

PRIMARY SOURCE THE HINDU

Recently the **International Court of Justice (ICJ)** delivered a landmark advisory opinion in response to a 2022 UN General Assembly resolution led by Vanuatu.

THE INTERNATIONAL COURT OF JUSTICE HELD THAT:

- Climate action was not a matter of choice or preference, but a **legal obligation**. The countries are under a legal obligation to take steps to reduce greenhouse gas emissions, and could be held liable to **pay compensation**, if they failed to do so.
- **Rich and industrialised countries** in Annexure I of the UNFCCC have an **obligation** to take the lead on

emissions reduction, and facilitate technology and financial transfers to developing countries.

- **Failure to fulfil climate obligations** may be deemed an **internationally wrongful act**, which could have legal consequences, including the liability to provide full reparation to countries that suffer on account of climate disasters, or other impacts of climate change.
- **Countries could be held liable even for the irresponsible actions of private businesses** or corporations, if they had failed to exercise due diligence and not taken adequate regulatory or legislative measures to prevent the irresponsible behaviour of private actors.

The **ruling is an advisory opinion, not a binding judgment**. It does not impose immediate legal consequences on any country. Nonetheless, it can have **significant implications** for the global fight against climate change.

SIGNIFICANCE OF THE RULING

- Though non-binding, the ruling is the **most authoritative interpretation of international climate law**, and will likely guide national and international courts.
- It declares that climate commitments under treaties like the UNFCCC and Paris Agreement are **legal obligations**, not just policy choices. The ruling puts the spotlight back on climate change, amid stalled global progress and missed 2030 emission reduction targets.
- The ICJ **recognises the right of climate-affected countries** to seek full reparation, not just compensation.
- Endorsed the concept of loss and damage in climate laws, calling upon **developed countries to take the lead** in raising financial and other support to help countries recover from impacts of climate change.
- **By asserting that climate action must be sufficient in scale**, the ruling contrasts with the Paris Agreement's "self-determined" approach to climate targets.
- Enhances the **negotiating strength of developing nations** by legally framing the responsibility of richer countries. The ruling may trigger lawsuits by developing nations, and against corporate polluters for climate damages.

SWACHH SURVEKSHAN AWARDS 2024-25

#GOVERNANCE #POLLUTION

PRIMARY SOURCE *The Indian EXPRESS*

The President of India **conferred Swachh Survekshan 2024-25 Awards** at Vigyan Bhagwan, New Delhi hosted by the **Ministry of Housing and Urban Affairs (MoHUA)**.

ABOUT SWACHH SURVEKSHAN

- Launched: 2016
- Nodal Ministry: Ministry of Housing and Urban Affairs (MoHUA)
- Instituted under Swachh Bharat Mission-Urban (SBM-U)
- 73 cities covered initially (2016), now covering 4589 Cities.
- **Assessment Criteria:**
 - Waste collection, segregation and processing
 - Sanitation and public toilet coverage
 - Citizen feedback and awareness campaigns
 - Innovation in urban cleanliness

KEY HIGHLIGHTS OF SWACHH SURVEKSHAN 2024-25

- **Top Cleanest Cities (Population >10 Lakh)** 1st: Ahmedabad
- **Top Cities (Population 3-10 Lakh):** 1st: Mira Bhayandar
- **Special Recognition: Super Swachh League:** New elite category introduced to honour consistently top-performing cities over the past three years.
 - Top 4 cities (Population > 10 lakh): Indore, Surat, Navi Mumbai, Vijayawada.
 - Top Cities (Population 3-10 Lakh Noida): Chandigarh, Mysuru, Ujjain, Gandhinagar.

OTHER AWARDS

- **Best Ganga Town:** Prayagraj
- **Lucknow was honoured with the prestigious Presidential Award** for becoming the first city in Uttar Pradesh to receive a 7-star Garbage Free City (GFC) rating.

UNION MINISTER OF HOUSING AND URBAN AFFAIRS LAUNCHED

- **Swachh City Partnership Initiative:** All 78 top performing cities across all population categories will adopt & mentor 1 poor performing city each from the respective States.
- **Accelerated Dumpsite Remediation Program:**
 - 1-year special program starting from Aug 15, 2025.
 - Aims to fast-track remediation of legacy waste dumpsites across urban areas and to push the scientific waste processing capacity.

AMBROSIA BEETLE AND FUNGUS THREAT TO KERALA'S RUBBER PLANTATION

#BIODIVERSITY #INVASIVE SPECIES

PRIMARY SOURCE *THE HINDU*

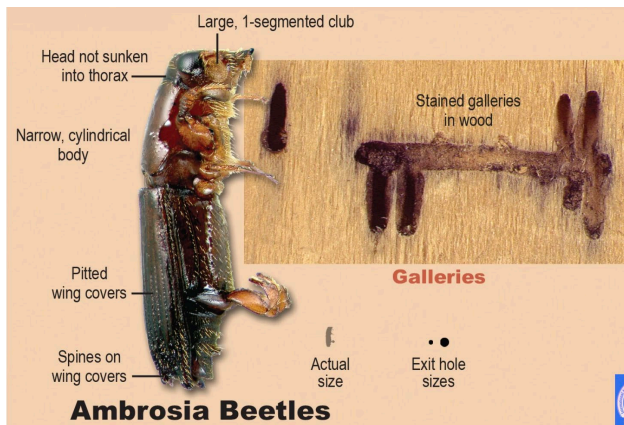
Kerala Forest Research Institute has identified a **serious threat to rubber plantations** in Kerala from an **invasive species**- the Ambrosia Beetle, in mutual association with two fungi: *Fusarium ambrosia* and *Fusarium solani*.

As per the official data of 2024, **India is the world's fourth-largest producer of rubber** in the world. Kerala alone accounts for 90% of India's total production and 72% of its rubber cultivation area. Threat to rubber plantations in Kerala from an invasive species- Ambrosia Beetle, is a serious concern.

AMBROSIA BEETLES

- Ambrosia Beetles is an Invasive Alien species.
- Native to Central and South America.
- First reported in India in the cashew trees in Goa in 2012.
- The name Ambrosia is not taxonomic but ecological. They get their name from the **ambrosia fungi that call the beetle their home**.
- Have a mutual association with 2 fungal species - *Fusarium ambrosia* and *Fusarium solani*.

MUTUAL ASSOCIATION OF FUNGI WITH AMBROSIA BEETLE



- Ambrosia beetles dig tunnels (called galleries) in tree bark and carry fungal spores with them.
- These fungi grow inside the tunnels. The beetles and their larvae do not eat wood; instead, they feed on the nutrient-rich fungal mycelia growing inside the tunnels.
- The fungi weaken the wood by secreting enzymes, allowing the beetles to go deeper.

HOW IS IT A THREAT TO RUBBER PLANTS?

- The fungi travel deep inside the plant, especially through the **xylem** (the water-carrying tubes of plants), this blocks water flow making the tree dry out and die.
- The infection also **affects total latex production** from rubber trees causing economic and agricultural losses.
- Controlling the fungal infection is difficult as the Fungi reside in deeper parts of the infected plant, where insecticides or fungicides often do not reach. Once infected, the tree takes a long time to recover or may not survive at all.

A few species of ambrosia beetles, including **Euplatypus parallelus**, are invasive and threaten horticulture and silviculture worldwide. The infection also makes other economically significant plants such as coffee, cashew, mango, and coconut vulnerable to infections.

Being flying insects, the beetles can access a variety of trees. It can infest more than 80 species of broadleaf trees including cashew, teak, coconut, and coffee. Additionally, it may associate with other pathogenic fungi posing a bigger threat to plantations.

WAY FORWARD

To combat the infection the experts suggest to:

- Sustainable treatments such as using antagonistic fungi to outcompete pathogenic Fusarium species.

- Apply microbial consortia with a diversity of bacterial species that can live inside plants, colonise plant tissues and enhance resistance to fungal infections.
- Remove infected parts of the trees- burn or chip away any part that displays holes.
- Rubber farmers have called for the use of genetically modified (GM) rubber plants.

KAZIRANGA TIGER RESERVE RECORDS THIRD-HIGHEST TIGER DENSITY

#CONSERVATION #TIGER RESERVE



As per the latest large-scale assessment of Tiger population, Assam's Kaziranga Tiger Reserve has the **third-highest density of tigers** in India.

KAZIRANGA TIGER RESERVE RECORDS THIRD-HIGHEST TIGER DENSITY IN INDIA

- Assam's Kaziranga Tiger Reserve has secured its position as India's third-highest tiger density hotspot.
- The tiger population in the reserve has increased to 148, and the density of tigers stands at **18.65 tigers** per 100 square kilometers, trailing only after:
 - Bandipur Tiger Reserve (19.83) in Karnataka
 - Corbett National Park (19.56) in Uttarakhand
- The implementation of advanced technology, such as **M-STRIPES**, Drones, and Electronic Eye surveillance systems has significantly improved monitoring, anti-poaching measures, movement tracking, and habitat monitoring, leading to better data.

KAZIRANGA NATIONAL PARK AND TIGER RESERVE

- **Location:** Assam
- 70% of the area of National Park is covered by grasslands.
- The park area is circumscribed by the **Brahmaputra River**, which forms the northern and eastern boundaries and **Mora Diphlu**, which forms the southern boundary. Other notable rivers within the park are the Diphlu and Mora Dhansiri.
- Kaziranga has an estimated 2613 **one-horned rhinos** and is a UNESCO World Heritage Site.

- **Key Fauna:** Tiger, Leopard, Indian Elephant, Wild water buffalo, Swamp deer, Sloth Bear, Hoolock Gibbon.

KEY FACTS ABOUT TIGER

- Tiger is an **umbrella species**. Its conservation automatically ensures the conservation of a large number of flora and fauna and entire ecosystems.
- India is home to 75% of the **global tiger population**.
 - The National Tiger Conservation Authority (NTCA) conducts a tiger census across India every 4 years.
 - Latest Tiger Census Report (2022): India has **3682** tigers. (2967 in 2018)
 - **Madhya Pradesh** has the highest number of tigers (785) in India, followed by Karnataka and Uttarakhand.
- **Conservation status:**
 - **IUCN Red List:** Endangered
 - **Wildlife Protection Act:** Schedule 1
 - **CITES:** Appendix 1

FIRST-EVER GRASSLAND BIRD CENSUS IN KAZIRANGA TIGER RESERVE

#CONSERVATION #TIGER RESERVE

PRIMARY SOURCE THE HINDU

The first-ever grassland bird census was conducted in **Assam's Kaziranga National Park and Tiger Reserve** with the use of passive acoustic recording monitoring technology.

FIRST-EVER GRASSLAND BIRD CENSUS IN KAZIRANGA TIGER RESERVE

- **Aim:** To document and conserve rare and endemic grassland birds threatened by habitat loss.
- The survey prioritised 10 species that are either globally threatened or endemic to the Brahmaputra floodplains:
 - **Bengal Florican** (Critically Endangered), Swamp Francolin, Finn's Weaver, Swamp Grass Babbler, Jerdon's Babbler, Slender-billed Babbler, Black-breasted Parrotbill, Marsh Babbler, Bristled Grassbird, and Indian Grassbird.
- The survey recorded a total of **43 grassland bird species**, including 1 Critically Endangered, 2 Endangered, and 6 Vulnerable species.

METHODOLOGY USED IN THE CENSUS

- **Acoustic recorders** were placed in tall trees near grasslands during the breeding season of the birds (between March and May). This is the season when the birds are **very vocal**, calling out for mates and with males defending territory. The instruments recorded all the birds singing in the landscape. Then, software was used to create a spectrogram, and Artificial Intelligence (AI) was used to **identify the birds** based on the recordings.
- An AI tool called **Birdnet** was used which **uses machine learning** to try and identify species by bird song.

Grassland birds are an indicator of good health of the grassland ecosystem.

Threats to the habitats of Grassland Birds:

In the past four decades, Assam has lost around **70% of its grasslands**. The reasons include:

- **Anthropogenic factors** such as overgrazing and clearing of grasslands for cultivation.
- **Natural phenomenon** called ecological succession (which is basically an instinct for grasslands to gradually transition to forests).
- Climate Change

ENVIRONMENT PROTECTION (MANAGEMENT OF CONTAMINATED SITES) RULES 2025

#CONSERVATION

PRIMARY SOURCE THE HINDU

The Union Ministry of Environment has notified **Environment Protection (Management of Contaminated Sites) Rules 2025** to address chemically contaminated sites across India.

ENVIRONMENT PROTECTION (MANAGEMENT OF CONTAMINATED SITES) RULES 2025

- Notified by the Union Ministry of Environment, Forest and Climate Change under the Environment (Protection) Act, 1986.

- **First formal legal mechanism** in India to address the issue of contaminated land.
- **Aim:** To establish a comprehensive legal and procedural framework to identify, assess, and remediate chemically contaminated sites across India.

CONTAMINATED SITES

- According to the Central Pollution Control Board, contaminated sites are those where hazardous and other waste had been dumped historically.
- These sites may include landfills, dumps, waste storage and treatment sites, spill sites, and chemical waste handling and storage sites.
- India has identified 103 such sites, but remedial operations have been initiated in only seven.
- Some of the sites were contaminated when there was no regulation on management of hazardous waste.

SALIENT FEATURES OF THE RULES

The rules define a step-by-step legal procedure to identify and clean up contaminated sites. Under these rules:

- The **district administration** would prepare half-yearly reports on suspected contaminated sites.
- A **State Board**, or a reference organisation, would examine these sites and provide a preliminary assessment within 90 days of being informed. Following these, it would have another 3 months to make a **detailed survey** and finalise if these sites were indeed contaminated.
- A **reference organisation**, basically a body of experts, would be tasked with specifying a **remediation** plan.
- The **State Board** would also have 90 days to identify the person(s) responsible for the contamination. Those deemed responsible would have to pay for the cost of remediation of the site. Else, the Centre and the State, under a prescribed arrangement, would arrange for the costs of clean-up.
- Any criminal liability, if it is proved that such contamination caused loss of life or damage would be under the provisions of the **Bharatiya Nyaya Sanhita (2023)**.

PRACTICE QUESTIONS

MCQS

Q1. With reference to the Environment Protection (Management of Contaminated Sites) Rules, 2025, consider the following statements:

1. These rules provide the first formal legal mechanism in India to address chemically contaminated land.
2. District administrations are mandated to submit quarterly reports on suspected contaminated sites.
3. The cost of site remediation must always be borne by the Central Government.
4. Criminal liability arising from contamination is governed under the Bharatiya Nyaya Sanhita.

Which of the statements given above is/are correct?

- (a) 1 and 4 only
- (b) 2 and 3 only
- (c) 1, 2 and 4 only

- (d) 1, 3 and 4 only

Q2. With reference to Great Indian Bustard; consider the following statements

1. It is a ground-dwelling flightless bird.
2. They are categorised as endangered in the Red Book data list of IUCN.
3. Their natural population is limited to the northeastern Himalayas.

How many of the statements given above is/are incorrect?

- (a) One only
- (b) Two only
- (c) All three
- (d) None

Q3. Consider the following statements about Ambrosia Beetles:

1. They feed directly on the woody bark of trees.
2. They are known to carry fungal species and cultivate them inside tree bark.
3. The name "ambrosia" refers to their taxonomic family.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 only
(c) 1 and 3 only (d) 2 and 3 only

Q4. With reference to Swachh Survekshan 2024-25, consider the following statements:

1. Ahmedabad topped the ranking in cities with over 10 lakh population.
2. The Super Swachh League category includes cities that have consistently ranked in top 3 for the past five years.

3. The survey is conducted by the Ministry of Jal Shakti.

Which of the above statements is/are correct?

- (a) 1 only (b) 1 and 2 only
(c) 1 and 3 only (d) 1, 2 and 3

Q5. Consider the following statements:

1. Mangroves are found only in saline coastal waters of Gujarat and West Bengal.
2. Mangroves exhibit vivipary- seeds germinate while still attached to the parent plant.
3. The total mangrove cover in India is more than 1% of the country's geographical area.
4. Mangroves act as effective carbon sinks.

Select the correct code:

- (a) 1 and 2 only (b) 2 and 4 only
(c) 1, 2 and 4 (d) 1, 3 and 4

DESCRIPTIVE QUESTIONS

- Q1.** Discuss the ecological and socio-economic significance of Mangroves in India. Also, highlight the key contributions of M.S. Swaminathan in their conservation and management.
- Q2.** Deserts and open ecosystems such as grasslands and savannas are often mischaracterised as wastelands. Critically examine the ecological and socio-cultural significance of these landscapes.

Answers: 1-a, 2-c, 3-b, 4-a, 5-b

SCIENCE & TECHNOLOGY

GS PAPER (PRELIMS) & GS PAPER III (MAIN)

HOW DO GLP-1 DRUGS WORK?

#BIOLOGY AND BIOTECHNOLOGY #HEALTH

PRIMARY SOURCE *The Indian EXPRESS*

Two GLP-1 drugs- Novo Nordisk's **semaglutide** and Eli Lilly's **tirzepatide**, are now available in the Indian market. **Mounjaro, Ozempic, Wegovy, Semaglutide, Tirzepatide** belong to a class of glucagon-like peptide-1 (GLP-1) receptor agonists, originally developed to treat diabetes and obesity.

ABOUT GLP-1 DRUGS

- **GLP-1** is an **incretin hormone** and a neurotransmitter **naturally secreted** from the small intestine and hindbrain in the human body, after one eats a meal. It travels to the pancreas, where it **helps to regulate blood sugar** by increasing insulin and decreasing glucagon.
- **GLP-1 RA** (glucagon-like peptide-1 receptor agonists) are a **new class of drugs** that mimic naturally-occurring gut hormones called incretin (GLP-1 is one such incretin). Thus, they regulate appetite and digestion, helping users feel full faster and consume fewer calories.
- Semaglutide and Tirzepatide both **mimic the action of GLP-1**. Tirzepatide additionally also mimics the action of another hormone called GIP (glucose-dependent insulinotropic polypeptide).

HOW GLP-1 DRUGS WORK?

GLP-1 drugs impact centres in the brain associated with control of hunger and satiety, to effectively tell us that we have had enough to eat and need to stop eating. They work by:

- **improving the secretion of insulin** that allows more of the glucose in the bloodstream to enter cells where it can be used for energy.

- **inhibiting the secretion of the hormone glucagon** that stimulates the liver to release stored glucose into the bloodstream.
- Slowing down the emptying of the stomach so that the glucose levels in the bloodstream does not spike.
- **reducing appetite** by signalling to the brain that one is satiated.

The drugs can be self-administered by the patient once a week via **subcutaneous injection** (similar to insulin). Semaglutide is also available as an oral tablet.

UTILITY OF GLP-1 DRUGS

- **Weight loss:** Extremely effective for weight-loss helping people lose on an average 15% to 20% of their body weight, equivalent to otherwise lost with bariatric surgeries.
- **Diabetes:** GLP-1 drugs infusion significantly increases insulin levels and lowers glucose levels in diabetic patients.
- **Alzheimer's:** Some evidence shows that the drugs are associated with lower risk of Alzheimer's and Dementia.
- **Other Conditions:** Found to be effective and are being studied for conditions including- cardiovascular diseases, kidney disease, non-alcoholic fatty liver disease, and obstructive sleep apnoea. Studies have shown a 69% reduction in heart failure events.

POTENTIAL SIDE EFFECTS OF GLP-1 DRUGS

- Common side effects include- nausea, vomiting, acidity, burping, hiccups, diarrhoea, abdominal pain, and appetite loss.
- Rarer complications include- pancreatitis, retinal changes (necessitating eye exams), and increased risk of medullary thyroid carcinoma, especially for those with a family history.

INDIA'S FIRST TRIBAL GENOME SEQUENCING PROJECT

#BIOLOGY AND BIOTECHNOLOGY

PRIMARY SOURCE THE HINDU

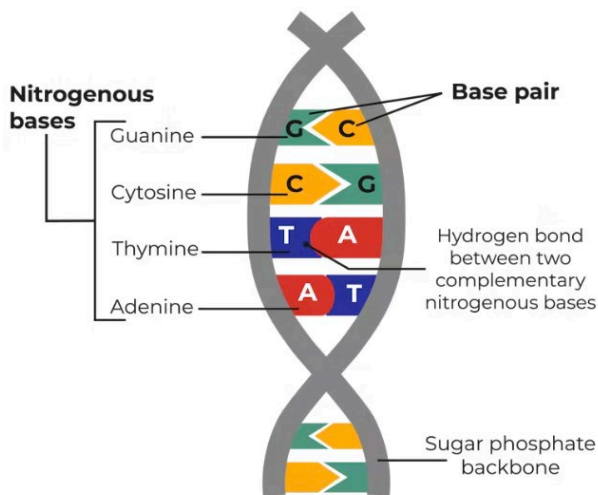
Gujarat has become the first state to launch a **genome sequencing initiative focused exclusively on tribal communities**.

TRIBAL GENOME SEQUENCING PROJECT

- The project- Creation of Reference Genome Database for Tribal Population in Gujarat- is being implemented by the Gujarat Biotechnology Research Centre.
- **Aim:** To identify genetic health risks and improve access to personalised healthcare solutions for tribal populations.
- The initiative will sequence the **genomes of 2000 individuals** from tribal communities in 17 districts in the State.

SIGNIFICANCE

DNA structure



- Tribal populations in India face a **disproportionate burden of genetic disorders like-** sickle cell anaemia, thalassemia, glucose-6-phosphate dehydrogenase (G6PD) deficiency, certain forms of cancer etc.
- There is a long-standing gap in genomic data for India's tribal populations. The genetic database could **lead to the early detection and better treatment** of the inherited diseases.

Genome Sequencing:

- A genome is an **organism's complete set of DNA**. It is a collection of all the genes and the regions between the genes contained in our **23 pairs of chromosomes**.
- Whole-genome sequencing is the **decoding of the entire DNA** present in the human cell, i.e., determining the precise order of the four nucleotide bases in DNA.

APPLICATIONS OF GENOME SEQUENCING

- **Disease Diagnosis:** Identify genetic mutations and variations, evaluate rare disorders and even cancer from a genetic viewpoint.
 - **E.g.,** Nearly 10,000 diseases (including cystic fibrosis and thalassemia) are the result of a **single gene malfunctioning**.
 - Mutation in MYBPC3 (Cardiac Myosin binding protein) leads to cardiac arrest at young age (found in 4.5% of Indian population but is rare globally).
- **Personalised Drug Development:** Can identify genetic targets for drug development and testing, leading to the development of more effective and personalised drugs.
- **Prenatal Screening:** Can be used as a tool for prenatal screening to investigate whether the foetus has genetic disorders/anomalies.
- **Forensics:** Genome sequencing can be used to identify suspects in criminal investigations and to establish paternity in cases of disputed parentage.
- **Evolutionary Biology:** Can help trace the evolutionary history of species and understand the mechanisms underlying evolution.
- **Agriculture:** Can help identify genes that contribute to desirable traits in plants and animals, allowing for the selective breeding of crops and livestock.

CONFINED FIELD TRIALS ON GENETICALLY MODIFIED (GM) MAIZE

#BIOLOGY AND BIOTECHNOLOGY

PRIMARY SOURCE THE HINDU

Punjab Agricultural University (PAU) is set to begin **confined field trials of genetically modified (GM) Maize** in the ongoing kharif season.

PAU has received approval from the Review Committee on Genetic Manipulation (RCGM), under the Department of Biotechnology, along with formal consent from the Punjab state government.

WHAT ARE GM CROPS?

- Genetically Modified (GM) crops are plants that have had their **DNA modified** (altered) through genetic engineering.
 - It involves **inserting new DNA** into the genome of a plant.
 - The seeds produced by these plants will inherit the new DNA.
- **E.g.**, BT cotton is a genetically modified variety of cotton that contains genes from the bacterium *Bacillus thuringiensis*.

CONFINED FIELD TRIALS OF GM MAIZE

- PAU will conduct confined field-trials of **two varieties of transgenic Maize** in collaboration with **Bayer Crop Science Limited** (formerly Monsanto).
- GM Maize has been genetically engineered with both herbicide-tolerant (HT) and insect-resistant ***Bacillus thuringiensis* (BT) traits**.
 - **Herbicide-tolerant (HT) Maize:** To study weed-control efficacy in herbicide-tolerant maize hybrids with the application of Glyphosate-K salt.
 - **Insect-resistant (IR) Maize:** To study the efficacy of insect-protected maize hybrids against targeted lepidopteran pests (stem borer; fall armyworm).
- Confined field trials are **small-scale field experiments** to address the biosafety requirements and evaluate the performance of specific traits in genetically engineered plants.

CRITICISM OF CONFINED FIELD TRIALS OF GM MAIZE TRIALS

Anti-GMO activists have expressed strong opposition to the project. The concerns include-

- **Unintended environmental consequences** including the risk of gene flow into nearby farms or wild varieties. Trials pose risks of genetic contamination and long-term ecological damage.
- **Risk of potential long-term health risks** associated with GM food products.
- Introduction of GM crops in India (even for research or confined trials) sets a **dangerous precedent**, particularly in Punjab where agricultural ecology is

already under stress. Glyphosate-tolerant Maize trails are controversial as glyphosate (a herbicide) is currently banned in Punjab due to its negative impacts on human health and the environment.

- **Lack of transparency** and insufficient public consultation. Bayer's involvement has been questioned given the global controversies surrounding GM seed patent enforcement.

PAU MAINTAINS THAT

- Trials were permitted only after receiving clearance from the Government of India's **Review Committee on Genetic Manipulation** (RCGM), under the **Department of Biotechnology**.
- Biosafety Research Level 1 (**BRL-I**) trials (preliminary) and Advanced level II (**BRL-II**) trials would be carried out under strict standard operating procedures, with mandatory permission from state-level committees.

Review Committee on Genetic Manipulation (RCGM) is the regulatory authority for BRL-1 trials (size limited to no more than one acre/trial site location).

Genetic Engineering Appraisal Committee (GEAC) is the regulatory authority for Biosafety Research Level II (BRL-II) trials (size is generally limited to no more than 2.5 acres/trial site location).

REGULATIONS RELATED TO GM CROPS

- Genetically Modified Organisms (GMOs) and their products are regulated under the "Rules for the Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/ Genetically Engineered Organisms or Cells, 1989."
- The rules are notified under the **Environment (Protection) Act, 1986**. These rules regulate the use, research, and commercialisation of GMOs, especially for environmental and biosafety concerns.
- The commercial cultivation and the field trials of GM crops require clearance from the **Genetic Engineering Appraisal Committee** (GEAC) under the Ministry of Environment, Forest and Climate Change.
- After the GEAC clearance, the state governments have the power to approve (or reject) the field trials of particular GM crops in their respective states.

STEM CELL THERAPY ' ZIMISLECEL' SHOWS PROMISE IN TYPE-1 DIABETES

BIOLOGY & BIOTECHNOLOGY

PRIMARY SOURCE THE HINDU

ZIMISLECEL, a new allogeneic **stem cell-derived islet cell therapy**, has shown promise in a recent study involving people with Type-1 Diabetes.

ABOUT DIABETES

- Diabetes is a lifelong condition that causes a **person's blood glucose (sugar) level to become too high**. The hormone **insulin** (produced by the pancreas) is responsible for controlling the amount of glucose in the blood.
- **Type-1 Diabetes** (insulin-dependent) is an autoimmune condition in which the body's immune system mistakenly **destroys insulin-making cells** (islets cells) in the pancreas. It is characterised by deficient insulin production, and the person requires daily administration of insulin. For decades, managing T-1D has relied on insulin therapy alone.

ZIMISLECEL: STEM CELL-DERIVED ISLET CELL THERAPY

- Zimislecel is an investigational stem cell-derived islet therapy for Type-1 Diabetes.
- Scientists made Zimislecel by **growing islets from pluripotent stem cells** in the lab. These stem cells were **matured into functioning islets** and infused into the liver in the patients with severe, long-standing Type-1 Diabetes.
- Early trials show that these stem cell-derived islet cells **began producing insulin again**, improving blood sugar control and preventing dangerous lows.

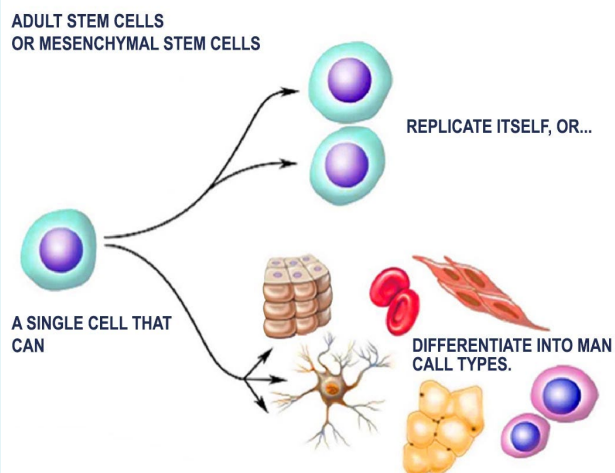
The therapy is still underdevelopment and may have cost considerations and the side-effects related to life-long immunosuppression.

WHAT ARE STEM CELLS?

- **Stem cells are undifferentiated cells** with the potential to develop into specialised cell types in the

body. They can self-renew which makes them valuable for therapeutic applications.

- **Stem cell therapy utilises stem cells** to promote the repair, regeneration, or replacement of damaged or diseased tissues within the body.



TYPES OF STEM CELLS

- **Totipotent:** Most versatile, with potential to differentiate into all different cell types of an organism and extraembryonic cells (including placenta and umbilical cord). Only found in fertilised eggs (zygote).
- **Pluripotent:** Derived from inner cell mass of a blastocyst (an early-stage embryo). Can give rise to all different cell types in the body (except extraembryonic cells). **E.g., Embryonic stem cells** and **induced pluripotent stem cells** (genetically reprogrammed to the pluripotent state from adult cells).
- **Multipotent:** More specialised than pluripotent stem cells and can differentiate into limited range of cell types within a specific tissue or organ. **E.g.,** Hematopoietic stem cells (give rise to various blood cell types), mesenchymal stem cells (can differentiate into bone, cartilage, fat cell etc.)
- **Unipotent:** Most specialised type of stem cells, can only renew themselves and differentiate into one specific cell type. **E.g.,** Stem cells in skin that can only differentiate into another skin cell.

MOLECULAR IMAGING: CALTECH'S ANGSTROM- SCALE MICROSCOPE

#FRONTIER TECHNOLOGY

PRIMARY SOURCE THE HINDU

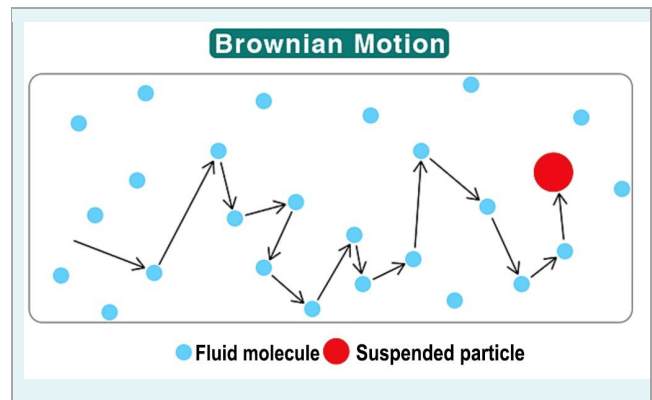
Scientists at the California Institute of Technology (Caltech) have developed a breakthrough imaging technique that enables real-time filming of Brownian motion (molecular motions). This imaging technique indirectly detects molecules by observing their interactions with light and tapping into Brownian motion.

CONVENTIONAL MICROSCOPE

- Conventional light microscopes work by using visible light to magnify and resolve small objects or structures.
- **Limitations:**
 - Conventional microscopes are **invasive** (disturb or damage the sample being studied) either physically, chemically, or by introducing heat or radiation.
 - **Have limited fields of view.** They can not distinguish individual molecules, which are around tens of Angstroms in size (1 Angstrom = 0.0000000001 m).

BROWNIAN MOTION

- Brownian motion is the random movement of particles in a fluid (liquid or air) due to their collisions with other atoms or molecules. The more massive a particle, the slower its Brownian motion.
- Examples of **Brownian Motion** include:
 - The motion of pollen grains on still water
 - Movement of dust motes in a room (although largely affected by air currents)
 - Diffusion of pollutants in the air
 - Diffusion of calcium through bones
 - Movement of "holes" of electrical charge in semiconductors.



BREAKTHROUGH IMAGING TECHNIQUE

- The breakthrough imaging technique utilises Brownian motion, ultrafast lasers, and light-matter interaction to **indirectly detect and visualise** molecular **behaviour** by observing their interactions with light.
- Their technique taps into the Brownian motion of particles. By measuring how fast a molecule changes the properties of light, **researchers could determine its size.**
 - The more massive a particle, the slower its Brownian motion.
 - Small molecules spin fast and disturb the light more than larger ones. This fact allows the size estimation of molecules by observing their interaction with light.
- **Benefits of the Microscope:** Non-invasive; Can help visualise molecular sizes in real-time at the Angstrom scale (higher resolution). No existing technique till date has achieved this level of detail.

Significance: This new imaging technique could help better visualise processes and transform biomedical research, disease detection, drug design, and nanomaterial fabrication.

APPLICATIONS OF HIGH-RESOLUTION MOLECULAR IMAGING

- **Early detection of diseases** (like cancer, cardiovascular, neurodegenerative) by visualising specific biomarkers associated with disease progression.
- **Drug design and targeted drug delivery:** Help researchers visualise delivery of drugs to specific tissues or cells, and optimise the design of nanocarriers for improved therapeutic outcomes.

- **Efficient electronics:** Observing the movement of electrons, and manipulating it to design more efficient electronic devices.
- **Nanomaterial fabrication:** Helps understand molecular processes in nanomaterial synthesis.

VALUABLE LESSONS FROM AXIOM-4 MISSION

#ASTRONOMY AND SPACE TECHNOLOGY

PRIMARY SOURCE | The Indian EXPRESS

The **safe return** of Group Captain **Shubhanshu Shukla** from the International Space Station as part of the **Axiom-4 Mission**, where he was the pilot among the four-member crew, marks a watershed moment for India's space programme.

AXIOM-4 MISSION

- Axiom-4 Mission is a **private spaceflight** organised by **Axiom Space** launched aboard the SpaceX Dragon spacecraft in June 2025.
- The crew **spent 18 days** aboard the International Space Station (ISS) and conducted various experiments in the microgravity environment.
- The mission was conducted in collaboration with NASA, Axiom Space, ESA, and other international partners.

SUCCESSFUL HOMECOMING

- Axiom-4 Mission returned to Earth with their SpaceX Dragon capsule splashing down off the San Diego coast in the US.
- The astronauts will **undergo a rehabilitation programme** for about a week under the supervision of flight surgeons to help him adapt back to gravity.
- The crew completed 320 orbits of earth. They also completed over 60 research activities.

KEY ISRO'S EXPERIMENTS IN AXIOM-4 MISSION

1. Myogenesis Study:

- Shukla performed operations in Life Sciences Glovebox (LSG) for the Myogenesis study.
- **Aim:** To uncover the molecular mechanisms driving muscle loss in space.
- **Significance:** These findings could also pave the way for:

- Targeted treatments to prevent muscle atrophy during prolonged space missions.
- New therapies to address muscle-wasting conditions on Earth such as those related to ageing or immobility.

MYOGENESIS

- Myogenesis is the **biological process through which muscle tissue is formed** during early stages of embryonic development from stem cells. These stem cells gradually differentiate into muscle precursor cells, which then multiply and fuse together to form muscle fibres.
- **Myogenesis is crucial** for the growth of the body, repair of muscle tissue, and regeneration of the musculoskeletal system (which includes bones, muscles and connective tissues).

2. Growing Sprouts and Moong Beans:

- The **Sprouts-ISRO experiment** focuses on the growth of green gram (moong) and fenugreek (methi) seeds in space. These are staple, nutrient-rich foods in India.
- **Aim:** To study how microgravity affects their germination, genetics, and nutritional content.
- **Significance:** Understanding these changes can help in:
 - Developing reliable plant-based food systems for future space missions.
 - Supporting agricultural advancements on Earth, particularly in resource-constrained or extreme environments where conventional farming is difficult.

3. Microalgae Experiment:

- **Aim:** To study how Microalgae grow and evolve in the absence of gravity.
- Microalgae are highly efficient organisms known for producing oxygen, absorbing carbon dioxide, and providing dense nutrition.
- **Significance:**
 - If successful, microalgae could become a sustainable food source for long-duration space missions.
 - Open up possibilities for using them in Earth-based environmental and food solutions, especially in areas with limited access to resources.

4. Survival of Tardigrades in Space:

- **Voyager Tardigrade-ISRO experiment** aims to observe how tardigrades survive and reproduce in extreme space conditions and compare their gene expression with Earth-based samples.
- Tardigrades are tiny aquatic creatures that can survive radiation, vacuum, and freezing temperatures.
- **Significance:** The research will decode the biology behind their resilience, which could lead to innovations in radiation protection for astronauts, and even new materials or therapies for use in harsh environments on Earth.

5. Human interaction with Technology in Microgravity:

- **Voyager Displays-ISRO** explores how spaceflight alters human interaction with electronic interfaces like touchscreens. Tasks involving gaze, touch, and eye movement will be analysed to understand cognitive and motor changes caused by microgravity.
- **Significance:**
 - To improve the design of control systems for spacecraft and future space habitats.
 - The results may also benefit high-stress environments on Earth, such as aviation or emergency response, where quick, intuitive interaction with digital systems is crucial for safety and performance.

6. Cerebral Hemodynamics Study:

- Using Ultrasound technology, ISRO and NASA will explore how blood circulates in the brain under microgravity conditions.
- **Significance:** The findings could improve our understanding of cardiovascular adaptation in space and inform medical diagnostics and treatments for conditions like stroke and hypertension on Earth.

VALUABLE LESSONS FROM AXIOM-4 MISSION

- **Invaluable lessons for Gaganyaan Mission:** The mission provides an invaluable blueprint for streamlining complex operational flows in the upcoming Gaganyaan Mission. This includes-
 - Pre-flight preparations and launch sequences to in-orbit activities, docking procedures, and the critical re-entry and recovery phases.

- Intricacies of communication protocols, real-time decision-making under pressure, and robust contingency planning.
- **Blueprint for Astronaut Selection and Training:** Participation in Axiom-4 Mission led to fairly detailed exposure of training procedures to Group Captain Shukla. This experience provides a rich case study in-
 - **Crew training and preparation:** Globally, commercial astronauts are from various professional backgrounds (not necessarily career military pilots) rigorously trained and seamlessly integrated into a complex mission profile.
 - **Refinement of India's training methodologies and astronaut selection:** This includes incorporating best practices for physiological adaptation to microgravity and psychological conditioning for isolation. Both simulation-based drills and real-time problem-solving scenarios can enhance the preparedness of Indian Vyomnauts.
- **Paves way for International Crewed Mission Coordination:** While ISRO's approach to space exploration and research has been largely national, the global landscape of human spaceflight is becoming increasingly collaborative and driven by the commercial sector. The mission showcases the efficiency and necessity of international collaboration, where diverse expertise works together towards shared objectives.
- **Private-sector Engagement in Space Sector:**
 - Axiom-4's reliance on established commercial launch and crew vehicles (like Space X's Falcon 9 and Crew Dragon) highlights increasing reliability and capability of private-sector space transportation and collaboration.
 - This could inspire India to **explore strategic** partnerships with the private sector in India and globally for certain sub-systems or specific commercial methodologies.
 - This mission's success (viability and profitability) can **encourage more Indian companies to invest in space** infrastructure, services, and human spaceflight support. This could lead to a thriving ecosystem of Indian suppliers, manufacturers, and service providers for future missions.
- **Encourages the Younger Generation** to pursue STEM Education.

As the global space community becomes more interconnected, Axiom-4 Mission highlights the benefits of pooling resources, expertise, and technological capabilities.

DRDO DEVELOPS PHOTONIC RADAR

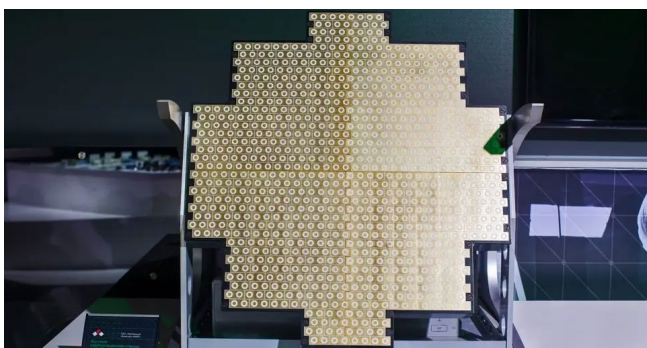
#ASTRONOMY AND SPACE TECHNOLOGY

PRIMARY SOURCE THE HINDU BUSINESS LINE

Recently, the Defence Research and Development Organisation (DRDO) announced that it has **developed a photonic radar system**. India will likely become the fourth country after the US, China and Israel to induct these radars after key trials in late 2025.

WHAT IS A RADAR?

- Radar is short for **Radio Detection and Ranging**.
- Radar uses **radio waves** to determine the distance, velocity, and physical characteristics of objects around the device.
- A **transmitter** emits a radio frequency signal aimed at an object (E.g., a cloud) whose characteristics are to be ascertained.
- A part of the emitted signal is echoed by the object back to the device (reflected back), where a **receiver tracks and analyses** it to determine the features of the targeted object.



What is a Photonic Radar?

- Photonic Radar is a **next-generation radar system** that uses light-based (photonic) technology to generate, process and analyse radio-frequency (RF) signals.
- **Conventional radars** generate radio frequency (RF) signals using electronic components (like oscillators).

However, such radars find it difficult to generate high-frequency signals beyond 40 GHz.

- **Photonic radars** use lasers and optical components (like optical fibres and modulators) to generate radio frequency (RF) signals and process signals using a technique called optical heterodyning. **Photonic integrated circuits** (PIC) used in the photonic radar can generate RF signals in the frequency range of 100 GHz to terahertz range, which is difficult to achieve using traditional electronic circuits.

The Photonic Radar System in India has been designed by the **Electronics and Radar Development Establishment** (LRDE), a DRDO lab known for creating advanced radars like Arudhra, Aslesha, and Uttam AESA.

SUPERIORITY OF PHOTONIC RADAR OVER CONVENTIONAL RADARS

- **High Detection Ability:** Photonic radars can spot objects that conventional radars miss, including stealth aircraft, drones, and even incoming hypersonic missiles.
- **Longer Range, Sharper Image and Lesser Noise:**
 - Photonic radars can generate high bandwidth signals (the higher the bandwidth, the greater the resolution).
 - It has a higher signal-to-noise ratio (noise emanates from the heat generated by electronic components in conventional radar) leading to sharper detection of the 'echo' from the target.
 - As a result, the radars have longer range and the ability to map targets in high-resolution 3D.
- **Immune to Jamming:** Photonic components are practically immune to electromagnetic jamming or electronic warfare tactics that often try to blind or confuse traditional radars. Additionally, Photonic radars are capable of frequency hopping- they keep changing their frequencies, which confuses the jammers.
- **Light Weight:** Photonic components do not have copper and are lighter. This enables the fitting of these small, lighter radar systems in satellites, swarms of drones and fighter jets.

POTENTIAL APPLICATIONS OF PHOTONIC RADAR

- **Military Applications:**

- With its ultra-wide bandwidth, low signal noise, and high precision, the photonic radar may be able to spot threats early.
- The radar system can be integrated with India's existing air defence infrastructure- such as Akashteer command and control system. Can be deployed on various platforms- including fighter jets (Su-30 MKI, Rafale, Tejas); mobile ground units for the Indian Army.
- **Medical Applications:** Photonic radar could be used as a non-invasive way to monitor patient vital signs, such as breathing and heart rate. The device could fit onto a photonic chip that is small enough to incorporate into electronic devices like a smartphone.
- **Space Missions:** Can be integrated into small satellites for deep-space tracking.
- Weather monitoring, high-resolution atmospheric observations & coastal surveillance.

ASSOCIATED CHALLENGES

- **Gaining access to PICs:** India lacks infrastructure to fabricate Photonic integrated circuits (PIC).
- **Export Restrictions:** In order for large-scale production of PICs, India will have to design the circuits and get them fabricated outside India. However, that is a humongous task given the export restrictions from the US; security risks in fabricating them from China.
- **Material Constraints:** Photonics utilise special materials, mainly indium phosphide and silicon photonics, which are hard to procure. Similarly, other components like tunable lasers and modulators are hard to procure.

The technology strengthens India's position in regional military balance and makes its defence systems much harder to bypass.

NEW EMERGING RADAR SYSTEMS

Quantum Radar:

- Quantum radar uses **quantum technology** for detection and imaging. The technology is still in the experimental stage.
- At the core of this technology is the production of a **pair of entangled photons**- sending one photon to the target, and then comparing it on reflection with the second photon; the difference will be used

to analyse the location and characteristics of the target.

Terahertz Radar:

- Terahertz radar operates in the electromagnetic spectrum between microwaves and infrared light (typically 0.1-10 THz) - where the signal oscillates a trillion times a second. The corresponding wavelength is about 0.3 mm. This will offer high resolution imaging.

HAM RADIO

#INTERNET AND COMMUNICATIONS TECHNOLOGY



Indian Astronaut Shubhanshu Shukla interacted with the country's students using a **HAM radio** from the International Space Station (ISS).

WHAT IS A HAM RADIO?

- Amateur radio, popularly known as ham radio, is a licensed radio service that relies on radio waves for establishing communication.
- Ham radio service is largely deployed for educational and knowledge purposes, for emergency or SOS communication.
- Using a dedicated frequency, a transceiver and an antenna, communication can be set up between two licensed hams by trained ham operators. The communication can be hyper-local, global, and in space.
- In India, any individual above the age of 12 is permitted to operate a ham radio. The Ministry of Electronics and Information Technology issues these licences.

HOW HAS HAM RADIO BEEN USED IN SPACE?

- Amateur radio was first used on a space shuttle to establish communication between space and Earth in 1983.
- The ISS also has a ham radio, known as the **Amateur Radio on the International Space Station (ARISS)**, which is often used to organise astronaut-student interactions.
- The objective of such interactions is to inspire the young generation.

- Typically, there is a nine minute window to make contact with the ISS while it revolves around the planet.
- Note that for safety purposes, the ARISS schedules radio outages at the ISS at the time of docking or such important activities. This is done to ensure that the radio does not interfere with any signals.
- The **Axiom-4** mission's **astronauts** from India, Poland and Hungary will contact their respective countries using the ham radio twice during their 14-day stay at the ISS.
- Whenever the ISS is cruising past the horizon for a short period, an attempt to establish ham communication will be performed.

WHY IS HAM RADIO AN ALTERNATE MODE OF COMMUNICATION?

- Ham radio is a reliable alternative communication mode, especially during emergencies.
- Despite advances in technology, it remains effective when traditional networks fail, such as during wars or natural disasters.
- In India, it proved vital during the Bhuj earthquake (2001), Indian Ocean tsunami (2004), and Uttarakhand floods (2013), among others.

PARAM-1: INDIA'S FOUNDATIONAL LLM

ARTIFICIAL INTELLIGENCE



The government-backed **BharatGen** has released **PARAM-1**, a bilingual Large Language Model (LLM) built from scratch to reflect India's linguistic and cultural realities, focusing on Hindi and English.

FOUNDATIONAL AI

- **Foundational AI:** Large-scale AI models trained on very large datasets and over which numerous specific applications can be built, including generative AI.
- **Large Language Models (LLMs)** are a type of Foundational AI model trained with vast datasets with at least one billion or more parameters. E.g., AI-powered tools like ChatGPT, Gemini, Perplexity, DeepSeek, Grok.
- **Small Language Models (SLMs)** are compact AI systems typically having fewer than 1 billion

parameters (ranges from millions to a few billion parameters). Cheaper to run and maintain, and ideal for specific use cases.

In its mission to build **open source Large Language Models (LLMs)** for Indian researchers and developers, **BharatGen**, the government-backed AI Initiative, has released a LLM called PARAM-1.

ABOUT PARAM-1

- PARAM-1 is a **2.9-billion parameter bilingual foundational AI model** developed by the BharatGen team.
- It reflects India's linguistic and cultural realities- with 25% of its training data in Hindi and the rest in carefully curated English.

KEY FEATURES

- **Bilingual focus:** Trained in Hindi and English, incorporating government documents, literary works, educational and community content.
- **Script-aware Tokeniser:**
 - Tokeniser is the first step in how a language model processes text. It breaks sentences into smaller units, or tokens, which the model can interpret.
 - Standard tokenisers (built for English) perform poorly on Indian scripts, splitting words into too many fragments.
 - PARAM-1 addresses this with a **script-aware tokeniser** that recognises Hindi and other Indic scripts, creating fewer and more meaningful tokens. This improves both accuracy and efficiency.
- **Three-phase training** focuses on language fluency, factual consistency, and long-context understanding. This allows the model to gradually develop fluency, retain factual information, and improve performance on tasks that require reading and reasoning over longer texts.
- **India-centric evaluation:** Tested on Indian benchmarks like MILU (competitive exam questions) and SANSKRITI (cultural knowledge), besides global ones like MMLU and ARC.

LIMITATIONS

- Currently supports only Hindi and English, **excluding India's wider linguistic diversity**. Raises concerns over the model's inclusivity, especially in a country where linguistic identity often intersects with regional politics and access to services.

INDIA'S 1ST PRIVATE TEST FACILITY FOR HEAVY WATER UPGRADE

#NUCLEAR TECHNOLOGY

PRIMARY SOURCE THE HINDU

Mumbai-based TEMA India has been entrusted with **testing the equipment required for upgrading of depleted heavy water**, a crucial requirement for **Pressurised Heavy Water Reactors** in India. It is a significant step towards speeding up the operationalisation of nuclear power plants.

INDIA'S 1ST PRIVATE TEST FACILITY FOR HEAVY WATER UPGRADE

- Until now, the assembling and testing of equipment for heavy water upgrade were centralised and done by **Bhabha Atomic Research Centre (BARC)**.
- **TEMA India** has inaugurated its test facility at Achhad in Palghar district, Maharashtra, where it will **manufacture equipment** such as distillation columns and integrate and **test them** before sending them to reactor sites for installation.
- The facility was designed and built by TEMA India's nuclear vertical under **technology transfer from BARC** and a 'purchase order' from Nuclear Power Corporation of India Ltd (NPCIL).

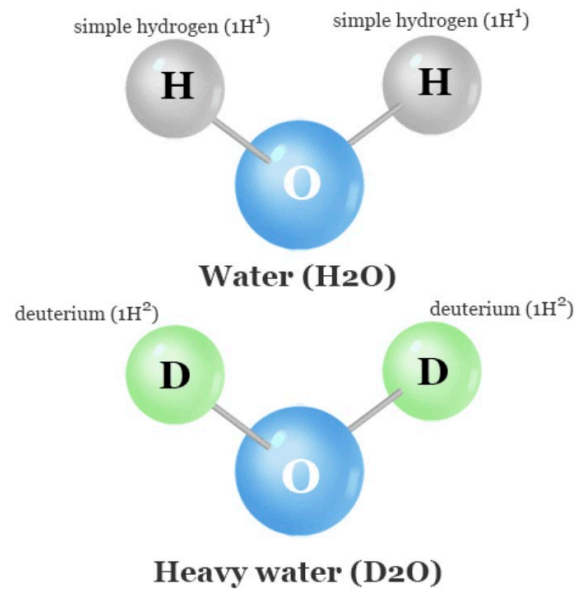
SIGNIFICANCE: SINGLE-POINT SOLUTION FOR UPGRADING HEAVY WATER

- Till now, the distillation columns and modules were manufactured by other vendors, and then assembled and tested by BARC. The entire process took 7-8 years.
- The decentralisation will **reduce the time period** by at least one to two years, and thus **speeden up the operationalisation** of nuclear power plants.

WHAT IS HEAVY WATER?

- Heavy water (D₂O) is a form of water (H₂O) with **deuterium** (a heavier isotope of hydrogen), instead of regular hydrogen.
- It is used as a **coolant** as well as **moderator** for slowing down fast-moving neutrons during a chain reaction essential for sustaining the nuclear fission process.
- D₂O needs to be **99.9% pure** for working efficiently. With time it gets contaminated with light or regular

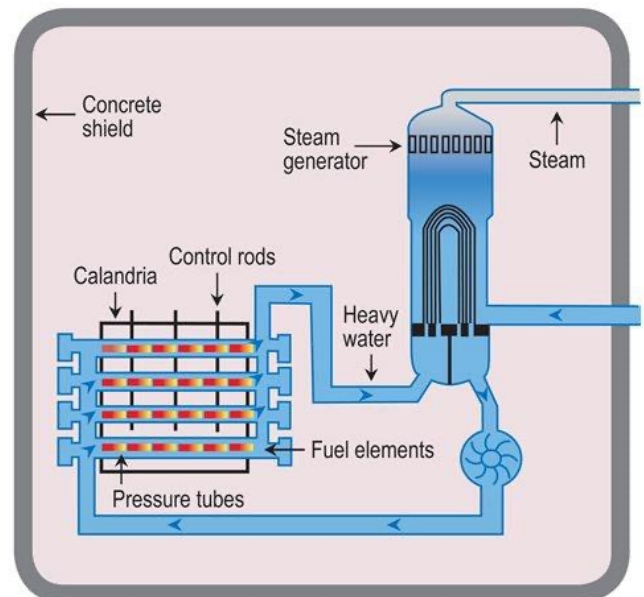
water, thus requiring the depleted D₂O to be upgraded back to 99.9% using a distillation process.



TEMA India has dispatched the first batch of tested distillation column sections for deployment at a unit of the **Rawatbhata Nuclear Power Plant (RAPP-8)** in Rajasthan, which is scheduled to go critical by December 2025.

PRESSURISED HEAVY WATER REACTOR

- **Fuel:** Natural Uranium (unenriched)



- **Moderator and Coolant:** Heavy water is used as both moderator and coolant.
- **Cooling System:** Uses a combination of heavy water and light water to cool the reactor. Heat is transferred

to a secondary loop, which then generates steam to drive turbines.

- **Control Rods:** Boron or Cadmium control rods.
- **Fuel requirement:** Annual requirement of fuel (UO₂) of a 700 MW PHWR (at 85% Capacity Factor) is about 125 tons.
- **Advantages:** Uses natural Uranium fuel, produces less high-level radioactive waste, and operates at lower pressures compared to some other reactor types.

INDIA'S NUCLEAR ENERGY GENERATION TARGET

- India has set its eyes at achieving **100 GW of installed nuclear energy capacity** by 2047.
- There are **24** nuclear reactors operational in India with an **installed capacity of 8780 MW**.
- The government had approved construction of 10 more nuclear reactors in 2015- of which one has come onboard, while the rest (with a combined capacity of 13.6 GW) are under construction.
- The immediate target is to achieve **22.4 GW** of installed capacity by 2032.
- The government has also launched a **20,000-crore Nuclear Energy Mission** to develop Small Modular Reactors.

CLIMATE-SMART FABRICS

#EMERGING TECHNOLOGIES



India needs climate-smart fabrics to cope with intensifying heatwaves, as traditional clothing offers limited protection against extreme heat and humidity.

WHAT ARE CLIMATE SMART FABRICS?

- Smart textiles are textiles designed to adapt to environment conditions. These fabrics integrate technologies like- sensors, microchips, and conductive fibres which enables them to monitor, react to, and even change their properties in response to stimuli like temperature, moisture etc.
- **Examples:**
 - **New Phase Change Materials (PCMs)** integrated into fabrics can absorb excess heat and release it when things cool down.

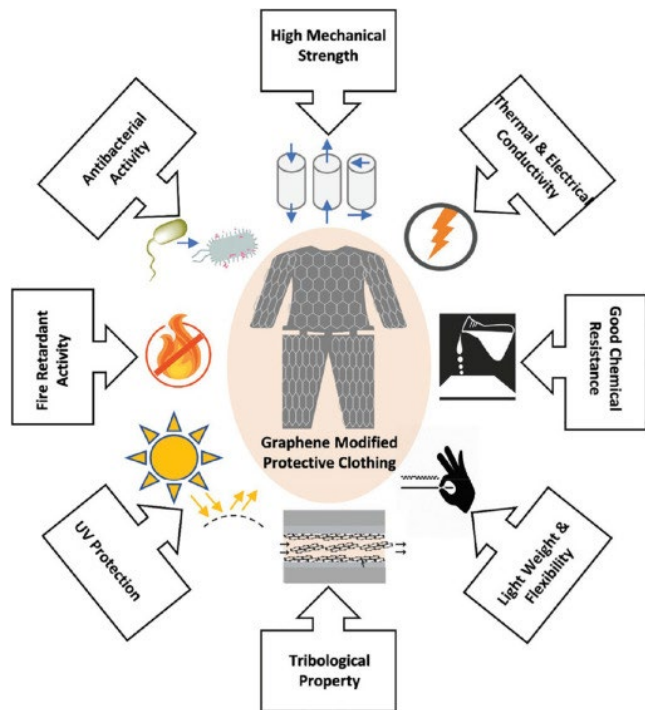
- Textiles transparent to infrared wavelengths that radiate heat away from the body have been developed.

KEY FEATURES

- **Thermal Regulation:** Absorb and release heat to maintain optimal body temperature.
- **Moisture-Wicking:** Pull sweat away from the skin and enable faster evaporation.
- **UV Protection:** Shield against harmful ultraviolet rays.

SMART FABRICS USE IMPORTANT TECHNOLOGIES TO FUNCTION

- **Nanotechnological advancements** allow fabrics to be treated or engineered at a molecular level to give them unique properties like water resistance or enhanced durability. **E.g.,** Graphene Modified Protective Clothing.
- **Miniaturised Electronics** enable embedding of sensors and circuits directly into textiles without affecting their flexibility or comfort.
- **Wireless Technologies** like Bluetooth and NFC (Near Field Communication) facilitate the communication of smart textiles with smartphones and other devices, enabling real-time data tracking and interaction.
- **Thin and flexible batteries or solar cells:** Improvements in energy harvesting and storage technologies are crucial to power these smart textiles.



India is experiencing record-breaking heatwaves. However, **India's Heat Wave Action Plan** lacks long-term, science-backed interventions such as climate-smart clothing.

WAY FORWARD

- Integrate smart fabrics into Heat Action Plans.
- India's new Research, Development and Innovation (RDI) Scheme (₹1 lakh crore outlay) should prioritise affordable wearable technologies and mass production of climate-adaptive fabrics.

VITAMIN D DEFICIENCY LINKED TO NEURODEVELOPMENTAL ISSUES

#DISEASES

PRIMARY SOURCE THE HINDU

A major study has found that babies with higher vitamin D levels were less likely to be diagnosed with schizophrenia, ADHD, or Autism.

INDIA'S VITAMIN D PROBLEM

- India has a high Vitamin D deficiency rate despite abundant sunlight.
- A study found that **74% of infants and 85.5% of their mothers were deficient in vitamin D**, with nearly half experiencing severe deficiency.
- Another study found a **strong positive correlation between mothers' and their infants' vitamin D levels**, and interpreted that babies born to vitamin D-deficient mothers were very likely to be deficient themselves.

However, findings also suggest that **timely supplementation in deficient mothers** can remarkably improve both maternal and neonatal levels.

PRALAY MISSILE SYSTEM

#DEFENCE TECHNOLOGY

PRIMARY SOURCE THE HINDU

*The Defence Research and Development Organisation (DRDO) has successfully conducted two consecutive flight tests of the **Pralay missiles** from Dr. APJ Abdul Kalam Island, off the coast of Odisha.*

The missile followed a desired **quasi-ballistic trajectory**, demonstrated mid-air manoeuvres, and struck its designated target with hit-to-kill accuracy and pin-point precision.

PRALAY MISSILE SYSTEM

- Pralay is a **short-range surface-to-surface missile** developed for tactical battlefield use.
- The missile system is designed to meet the specific operational needs of the Indian Army and incorporates several indigenous technologies.

KEY FEATURES OF PRALAY MISSILE

- **Propulsion system:** Two-stage solid-propellant rocket motor with Manoeuvrable Re-entry Vehicle (MaRV) technology in the terminal stage.
- **Speed:** Capable of reaching speeds between Mach 1 and Mach 1.6.
- **Range:** Operational strike range of 150-500 kilometres.
- **Weight:** Approximately five tonnes.
- **Flight trajectory:** Quasi-ballistic and low-altitude trajectory, allowing it to evade early detection.
- **Guidance:** Equipped with an inertial navigation system and integrated avionics for high-precision targeting and real-time trajectory correction.
- **Launch platform:** Can be fired from an 8x8 BEML Tatra Transporter Erector Launcher, providing mobility and rapid deployment capability.
- **Defence penetration:** The missile can manoeuvre mid-flight, oscillate during travel, and alter its trajectory to evade enemy interception systems.
- **Survivability and effectiveness:** Designed to resist interception, deliver precision strikes on short- and medium-range targets, and enhance battlefield readiness.

SIGNIFICANCE

- **The missile fills the gap of a conventionally armed ballistic weapon system** and remains unaffected by the 'no first use' nuclear policy.
- **Flexible and precise strike option** that can be deployed rapidly in response to evolving threats. Deployed with conventional warheads along the

borders, the missile can target radar and communication installations, command and control centres, and advanced airfields.

- **Enhances** India's **tactical deterrence capabilities**, strengthens India's strategic posture and promotes greater self-reliance in advanced defence technologies.

ASTRA: BEYOND VISUAL RANGE AIR TO AIR MISSILE

#DEFENCE TECHNOLOGY

PRIMARY SOURCE 

Recently, Defence Research and Development Organisation (DRDO) and the Indian Air Force (IAF) carried out a **successful flight test** of the **Beyond-Visual-Range Air-to-Air missile (BVRAAM) Astra missile** from Su-30 Mk-I platform off the coast of Odisha.

ABOUT ASTRA MISSILE

- Astra is a Beyond-Visual-Range **Air-to-Air missile (BVRAAM)** with a range **exceeding 100 kms.**
- **Developed** **by:**
Defence Research and Development Organisation (DRDO)
- It is equipped with an art guidance and navigation system and **indigenous Radio Frequency (RF) Seeker** that provides it the ability to strike with high accuracy.
 - One of the key technological achievements of the recent test was the validation of the Radio Frequency (RF) seeker.
 - **RF seeker** detects and tracks the target using radio waves ensuring accurate terminal guidance.
- The missile (Astra Mk1) has already been inducted into service with the IAF. It is integrated in Su-30 Mk-I fighter aircraft; integration is underway in Tejas Mk1A fighter, and will be integrated in future in AMCA, Rafale etc.

VARIANTS OF ASTRA MISSILE

1. Astra Mk1:

- First-ever BVRAAM indigenously developed by India.
- Astra Mk-1 is 3.6 m long, and weighs 154 kg.
- Uses a single-pulse rocket motor with solid propellant that can propel the missile to a speed of Mach 4.5.
- It uses mid-course inertial guidance driven by a fibre-optic gyroscope.

- The **maximum range is 110 km** in head-on chase and 20 km in tail chase.
- The missile could be launched from different altitudes.

2. Astra Mk2:

- It has a projected **range of 140-160 km**. Astra Mk-2 uses a **dual-pulse rocket motor** which dramatically increases its range and kill probability.
- It incorporates upgraded guidance algorithms and an indigenous radio frequency (RF) seeker.
- The missile is slated to achieve operational readiness by 2026.

3. Astra Mk3 (Gandiva missile):

- India and Russia are working together to build the future Astra Mk-3 missile powered by a solid fuel ducted ramjet (SFDR) engine.
- Projected Range: 350 kms. This would put the Astra Mk3 in the same league as the world's most advanced air-to-air missiles.

SIGNIFICANCE OF THE TEST

- **Validates critical defence technology:** Traditionally, India relied on imported RF seekers, which incurred high costs and also exposed supply chains to geopolitical uncertainties. The test validates the indigenous RF seeker which is a critical defence technology.
- **Reinforces reliance on Astra missiles:** Re-establishes the accuracy and reliable performance of Astra weapon system. It reinforces India's growing technological edge in aerial warfare systems.

India's successful test of the Astra missile with an indigenous RF seeker places it along the list of a few nations, like the US, Russia, France, and China, with advanced BVRAAM programs developed entirely within national borders.

AKASH PRIME AIR DEFENCE SYSTEM

#DEFENCE TECHNOLOGY

PRIMARY SOURCE 

Indian Army has carried out successful trials of the indigenously developed **Akash Prime Air Defence System** at an altitude of over 15,000 feet in the Ladakh sector. The test

was successful and the missile has met the country's critical air defence requirements for high-altitude.

AKASH MISSILE DEFENCE SYSTEM

- **Indigenously developed by:** Defence Research and Development Organisation (DRDO)
- **Medium-range Mobile Surface-to-Air missile (SAM)** designed to neutralise aerial threats such as fighter jets, drones, cruise missiles, and air-to-surface missiles.
- **Operates on a command-guidance system** with datalink for mid-course corrections and switches to active radar homing in the terminal phase.
- **Propelled by** an integrated ramjet-rocket engine allowing it to maintain supersonic speeds (Mach 1.8 to 2.5) throughout its flight.
- **Range** extends up to 25-45 km, with the ability to intercept targets at altitudes up to 20 km.
- The missile carries a **60 kg high-explosive**, pre-fragmented warhead, detonated by a digital proximity fuse for maximum impact.
- **Supported by a sophisticated radar network.** Real time multi-sensor data processing enables simultaneous engagement of multiple targets from any direction.
 - **Rajendra Phased Array Radar** can track up to 64 targets and guide eight missiles simultaneously.
 - **3D Central Acquisition Radar (3D CAR)** provides long-range surveillance and target acquisition.

Akash has evolved over the years, with variants like **Akash-1** (25 km range), **Akash-NG** (up to 30 km with improved guidance), and **Akash Prime** (up to 35 km).

AKASH PRIME AIR DEFENCE SYSTEM

- The system can operate at **heights** up to 4500 metres and is capable of targeting objects at a **range** of around 25 to 30 kilometres.
- Compared to the existing Akash system, **Akash Prime includes an indigenous active Radio Frequency (RF) seeker** for improved target accuracy. The RF seeker enables the missiles to detect, track, and home in on targets with greater precision in extreme weather and terrain.
- The modification allows its reliable use in cold temperatures and high-altitude conditions.

Akash's integration with advanced command-and-control systems like **Integrated Air Command and Control System (IACCS)** enables real-time threat neutralisation.

The **upgraded variant** (Akash Prime) will enhance the Air Defence potential in high-altitude frontiers and improve the operational effectiveness.

INS NISTAR: INDIA'S FIRST INDIGENOUS DIVING SUPPORT SHIP

#DEFENCE TECHNOLOGY

PRIMARY SOURCE The Indian EXPRESS

Indian Navy commissioned INS Nistar, India's first indigenously designed and built Diving Support Vessel (DSV), at the Naval Dockyard in Visakhapatnam. It was delivered by Hindustan Shipyard Limited to the Indian Navy.

HOW DEEP-SEA RESCUE OPS WORK

IMAGINE THIS. A submarine malfunctions in the deep. Oxygen is fast running out. Hydrostatic pressure keeps the hatch closed, but even if it were to be opened, no human could survive at those depths. All that the trapped crew can do is wait for help.

INS NISTAR – 'salvation' in Sanskrit – is meant for exactly such a situation. It can undertake diving and salvage operations upto 300 m depth, with its DSRV capable of operating 1,000 m under the surface. Here's how deep sea rescues work.



- The first task is to locate the submarine in distress, something easier said than done in the deep-sea gloom. *Nistar* will use ROVs, its advanced sonar system, and DSRV.
- Once the submarine is located, rescuers in the mothership will decide the course of action. If the sub is simply trapped in some underwater debris, ROVs and DSRV equipped with robotic arms and other equipment can try to free it.
- But the rescue window is small, and the priority is to save personnel stuck underwater. This is where the DSRV comes in. It can attach to the disabled sub's hatch, allowing the crew to be evacuated. India's DSRVs can rescue 14 trapped personnel at a time.
- *Nistar* is also a dive-support ship, with air diving capabilities for shallower depths, and more complex saturation diving capabilities for greater depths. *Nistar* can support prolonged saturation dives up to 100 metres.



INS NISTAR

- **Indigenously designed and constructed by:** Hindustan Shipyard Limited.
- INS Nistar is a highly specialised Diving Support Vessel that can undertake Deep Sea Diving and Rescue Operations- a capability with select Navies across the globe.
- It measures 118 m with a displacement of around 10,500 tonnes.

- It is equipped with state-of-the-art diving equipment and can undertake deep sea saturation diving up to a **depth of 300 metres**.
- Nistar is the **first of two diving support vessels** (DSVs) that were ordered by the Navy in 2018. Its sister ship **'Nipun'** was launched in 2022, and is expected to be commissioned in the near future.
- Nistar will be the **mothership** of an advanced deep submergence rescue vehicle (DSRV). The Indian Navy acquired two DSRVs from the UK (one each for Nistar and Nipun).

Significance: Nistar is meant to support deep-sea diving and submarine rescue operations. It will enhance India's operational preparedness in the underwater domain and strengthen India's position as a net maritime security provider within the Indian Ocean Region (IOR) and beyond.

APACHE AH-64E HELICOPTERS

#DEFENCE TECHNOLOGY

PRIMARY SOURCE THE HINDU

Indian Army received the first batch of **three Apache AH-64E helicopters from the US** at the Hindon airbase.

APACHE AH-64E HELICOPTERS

- The AH-64E Apache is one of the world's most **advanced multi-role combat helicopters**.
- **Manufactured by:** Boeing, the US.

KEY FEATURES

- **Warhead:** The choppers are fitted with:
 - Hellfire air-to-surface anti tank missile
 - Stinger air-to-air missiles
 - 70 mm Hydra rockets
 - 30 mm automatic cannons
- **Advanced Technology:** AH-64E incorporates 26 new technologies to enhance battlefield performance. These include:
 - Advanced Digital Connectivity
 - Joint Tactical Information Distribution System
 - Powerful T700-GE-701D engines with enhanced transmissions
 - Improved rotor blades made of composite materials

- Ability to control unmanned aerial vehicles (UAVs) mid-flight (allowing manned-unmanned teaming in real time).
- **Sensors & Radar:** Equipped with **Longbow Fire Control Radar:**
 - capable of simultaneously tracking up to 128 targets and engaging up to 16 at once
 - Fire-and-forget capability when combined with Hellfire missiles
 - All weather operation capability.

APACHE AH-64E TOI

Two high-performance turboshaft engines for maximum cruise speed of 284km/hr

World's most advanced multi-role combat helicopter

Advanced laser, infrared & target acquisition designation to attack targets

Laser guided precision Hellfire missiles, 70mm rockets, 30mm automatic cannon

Wing Span: **17.15 ft**

Height: **15.24ft**

SPECIFICATIONS	
Primary mission gross weight	6,838Kg
Vertical rate of climb	More than 2000ft per min
Maximum rate of climb	More than 2,800ft per min

Source: Boeing, news reports

Significance: The induction of Apache combat helicopters strengthen India's operational capabilities against Pakistan along the Western Border and high-altitude areas.

- Can approach enemy troops covertly with relative stealth and launch as close range attack
- Capability to operate in hostile airspace with threats from ground.
- Capability to destroy enemy tanks, armoured personnel carriers and fortified positions in mountainous terrain.
- Provides cover to army tanks and infantry during battle.

ARMED FORCES AND APACHE HELICOPTERS

- The Indian Air Force (IAF) has **22 Apache Helicopters** which are used for **air defence and deep-strike roles**

targeting enemy radar installations and command posts.

- The Indian Army intends to use its **fleet for close air support, tank-busting missions and battlefield dominance** during armoured engagements. India signed a Rs 5691 crore deal in 2020 for 6 Apaches, specifically for the Indian Army.

KEY FACTS

- In early 2025, the Ministry of Defence signed a Rs 62,700 crore (approximately \$7.3 billion) contract with Hindustan Aeronautics Limited (HAL) for 156 **'Prachand' Light Combat Helicopters**, underscoring the increasing role of rotorcraft in India's war-fighting doctrine.
- These helicopters- 66 for the IAF and 90 for the Indian Army- will be delivered over the next five years. This would be a significant development unfolding on the Eastern front.

PATRIOT MISSILE SYSTEM

#DEFENCE TECHNOLOGY



Germany is considering funding the **US-made Patriot Air Defence Systems** for Ukraine amid ongoing Russian missile and drone attacks.

Ukraine has repeatedly asked Western allies for more air defences to protect critical infrastructure and civilians from frequent missile and drone attacks. Ukrainian officials maintain that Patriot systems are **vital to defend against long-range attacks by Russia**.

WHAT IS THE PATRIOT MISSILE SYSTEM?

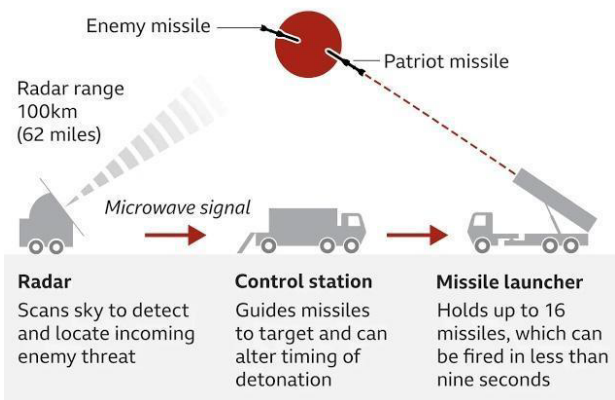
- Patriot (Phased Array Tracking Radar for Intercept on Target) is a mobile **surface-to-air defence system**.
- **Developed by:** United States
- It is used to detect, track, and **shoot** down incoming missiles, **aircraft**, and drones.

- It is considered one of the **most advanced air defence systems in the US arsenal**, and has been in service since the 1980s.

HOW DOES THE PATRIOT WORK?

- The system has different capabilities depending on the type of interceptor used.
- The earlier PAC-2 interceptor uses a blast-fragmentation warhead that detonates in the vicinity of a target.
- The PAC-3 family of missiles uses more accurate technology that hits the target directly.
- According to NATO, the system's **radar range exceeds 150 km**.

How the Patriot missile system works



GLOBAL USAGE

- The system is used in **19 countries** including: The US, Germany, Poland, Ukraine, Japan, Qatar, Saudi Arabia, and Egypt.
- In 2025, the US transferred about 90 Patriot interceptors from Israel to Ukraine.

COST OF THE SYSTEM

- A newly produced single Patriot battery costs **over \$1 billion**, including \$400 million for the system and \$690 million for the missiles in a battery.
- Patriot interceptors are estimated to cost \$4 million.

HISTORY, HERITAGE & CULTURE

GS PAPER (PRELIMS) & GS PAPER I (MAIN)

KEELADI ARCHAEOLOGICAL SITE

#ANCIENT INDIA #SANGAM AGE

PRIMARY
SOURCE THE HINDU

Findings from excavation at **Keeladi village in Tamil Nadu's Sivaganga district** provide compelling **evidence of urban civilisation** that existed in Tamil Nadu during the Sangam age.



ABOUT KEELADI

- Keeladi is a small village in the Sivaganga district in **Tamil Nadu**.
- It is about 12 km south-east to the temple city of Madurai and is located along the **Vaigai river**.

KEELADI FINDINGS

- The excavations here from 2015 prove that an **urban civilisation existed in Tamil Nadu** in the Sangam Age on the banks of the Vaigai river.
- Carbon dating of charcoal discovered at the site in February 2017 established that the **settlement dates back to 6th century BCE**.
- Houses built with burnt bricks, **well-laid drainage systems**, water tanks, and deep wells reflect **urban planning and engineering skills**.
- **Evidence of industries** such as pottery, weaving, dyeing, and bead-making.

- Square-shaped trenches reveal remnants of furnaces containing soot and ash, confirming that Keeladi was a centre for **manufacturing beads** made from quartz, carnelian, glass, agate, and other materials.
- Discovery of spindle whorls, terracotta beads, and tools points to **organised economic activity**.
- The findings also indicate **trade and cultural exchange with the Indus Valley Civilisation**.
- Over 120 potsherds containing **Tamil Brahmi inscriptions** have been found. There are Tamil words engraved on the potteries that mention the names of individuals like 'Aathan', 'Uthiran' and 'Thiesan'.

HOW IS KEELADI LINKED TO THE SANGAM AGE?

- The Sangam age is a period of history in ancient Tamil Nadu which was believed to be from the **third century BCE to the third century CE**. The name is derived from the renowned Sangam poets of Madurai from that time.
- **Excavations** by the Archaeological Survey of India (ASI) and Tamil Nadu State Archaeology Department (TNSDA) have **pushed the Sangam age further back**.
 - In 2019, a TNSDA report dated the unearthed artefacts from Keeladi to a period between sixth century BCE and first century BCE.
 - One of the six samples collected at a depth of 353 cm, sent for carbon dating in the US, dated back to 580 BCE.
- Keeladi could provide **crucial evidence for understanding the missing links** of the Iron Age (12th century BCE to sixth century BCE) to the Early Historic Period (sixth century BCE to fourth century BCE) and subsequent cultural developments.

WHAT IS THE CONTROVERSY SURROUNDING KEELADI?

- After reports of possible links with the Indus Valley Civilisation, the third round (2017) of diggings by the ASI saw a delayed start.
- Superintending Archaeologist Amarnath Ramakrishna was transferred to Assam, allegedly in a **perceived attempt to play down the excavation findings**.

- Keeladi almost faded from public memory as there was no “significant finding” in the third round. This led to criticism that the excavation had been deliberately restricted to 400 metres.

ARE THERE LINKS TO INDUS VALLEY?

- The unearthed Keeladi artefacts have led academics to describe the site as part of the **Vaigai Valley Civilisation**.
- The findings have also invited comparisons with the Indus Valley Civilisation while acknowledging the cultural gap of 1000 years between the two places.
 - Till now, the gap is filled with Iron Age material in south India, which serve as residual links.
 - However, some of the symbols found in pot sherds of Keeladi bear a close resemblance to Indus Valley signs.
- TNSDA affirms that Keeladi has all the characteristics of an urban civilisation, with brick structures, luxury items and proof of internal and external trade. Keeladi has also added to the credibility of **Sangam Literature**.

- The **Chola Empire (9th to 13th centuries CE)** is one of the longest-ruling dynasties in South India. It is known for its maritime power, temple architecture, and democratic administrative systems.

CHOLA DEMOCRATIC SYSTEM

- The Chola model of statecraft relied heavily on **decentralised administrative systems**. It was built on two core village-level institutions:
 - **Sabha**: Found in Brahmadeya villages (settlements gifted to Brahmins). Composed exclusively of Brahmin male members. Functioned through various committees (variyaams) like garden committee, tank committee, justice committee, etc. Selection to these committees was often through the Kudavolai system.
 - **Ur**: For non-Brahmin villages. Peasant (Vellvagai) settlements were called Ur. Landholders of Ur (peasant village) acted as members of assembly Urar. Urar were entrusted with upkeep of temples, maintenance of tanks and managing water, and oversaw administrative functions like collection of revenue, maintenance of law & order. Less formal structure than Sabha, but still crucial to village-level decentralisation.
- These were not symbolic councils, but **functioning elected bodies** with substantial powers over revenue, irrigation, temple management, and even justice.
- The ‘**Uttaramerur Inscription**’ issued by **Prantaka Chola** offers detailed information about the world’s earliest surviving evidence of a **formal electoral system** called Kudavolai System.

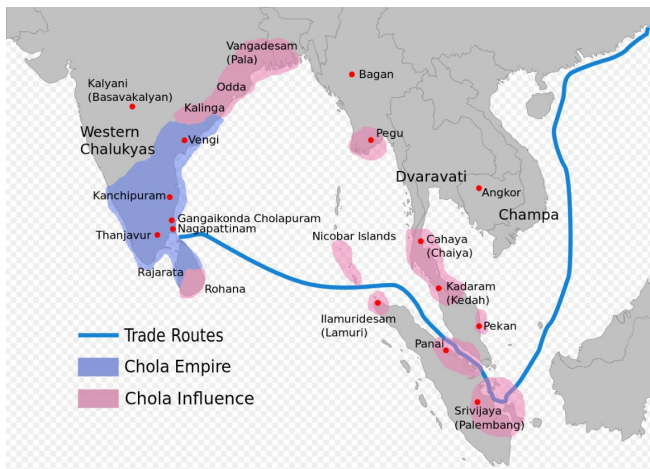
KUDAVOLAI SYSTEM: CHOLA BALLOT POTS

#CHOLAS #ANCIENT INDIA



In a recent address at **Gangaikonda Cholapuram**, the Prime Minister of India highlighted **Chola empire's indigenous democratic tradition**, contrasting it with the often-cited **Magna Carta of 1215 CE in Britain**.

CHOLA EMPIRE



KUDAVOLAI SYSTEM: BALLOT POT ELECTIONS

- The Kudavolai system, meaning “ballot pot”, was an early electoral method used in Chola village assemblies.
- **Under this method:**
 - The names of eligible candidates were inscribed on **palm leaves** and placed inside a pot.
 - A young boy, typically chosen for his impartiality, would draw the lot in full public view.
 - The selected individual would assume a position in the village assembly.
- This randomised draw was not a game of chance, but a **civic ritual** rooted in transparency, fairness, and collective consent.

- To ensure that power was not monopolised by dynastic elites, eligibility criteria under the system were strict.

ELIGIBILITY & DISQUALIFICATION CRITERIA

- Candidates had to own tax-paying land, be between 35 and 70 years old,
- Possess knowledge of Vedic texts or administration, and
- Have no record of crime or domestic abuse.
- Debt defaulters, alcoholics, and close relatives of sitting members were disqualified.

ACCOUNTABILITY MECHANISM

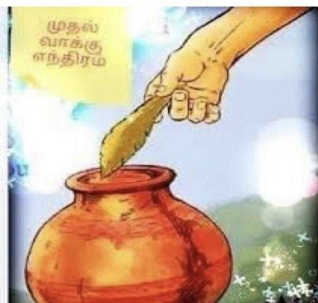
- Annual audits were mandatory.

Kudavolai System

An early electoral method used in Chola village assemblies

Uttaramerur Inscriptions gives following description of kudavolai System :

- Eligible people from the village were nominated (based on merit, character, age, etc.)
- Names were written on palm leaves (volai)
- These leaves were put into a mud pot (kudam)
- A young boy (innocent, chosen randomly) would draw a leaf
- The name on the leaf would be declared winner of the election
- Elected members formed the village sabha/committee (called Variyam or Kudumbu)
- Misappropriation of funds or dereliction of duty could lead to disqualification from future office, a radical mechanism even by modern standards.
- Inscription no. 24 from **Epigraphia Indica** details the dismissal of a treasury officer over embezzlement, followed by a fine.



HISTORY OF THE CHOLAS

Origin of Imperial Chola:

- Cholas were one of three muvendaras (kings) who ruled over the combined geography of Tamil Nadu and Kerala. The most well-known ruler of Sangam-age Cholas was **Karikala**.

- However, after the Sangam era, there was **no record of Chola kings** as independent rulers. They remained as subordinates to the Pallavas in the Kaveri Region.

Re-emergence of Cholas under Vijayalaya (850-871 CE):

- **Conquest of Kaveri Delta:** Vijayalaya's conquest of the Kaveri delta from the Muttaraiyar marked the re-emergence of the Chola dynasty.
- **Foundation of Thanjavur:** He founded the city of Thanjavur and established the Chola kingdom in 850 CE.

Parantaka I (907-955 CE):

- Parantaka Chola initiated territorial expansion and governance reforms, laying the foundation for future Chola glory.
- **Battle of Takkolam:** He suffered a defeat at the hands of the **Rashtrakutas** in the famous Battle of Takkolam.

Rajaraja I (985-1014 CE):

- Rajaraja I's reign witnessed significant military achievements and cultural contributions.
- **Naval Expeditions:** Victorious naval expeditions along the West Coast, Sri Lanka, and the Maldives.
- **Northern Sri Lanka:** His conquest led to the Chola authority's control over northern and eastern Sri Lanka.
- **Battle of Kandanur Salai:** Defeat of the **Cheras** in this notable battle.
- **Construction of Rajarajeswara Temple:** Completed the iconic Rajarajeswara temple (Brihadeeswarar Temple) in Tanjore in 1010 A.D.
- **Religious Devotion:** A devout follower of Saivism, he earned titles like **Mummidi Chola and Sivapadasekara**.
- Abdicated the throne in favor of his son Rajendra Chola I.

Rajendra Chola I (1012-1044 CE):

- **Military Exploits:** Conducted remarkable military expeditions, including defeating Mahipala I of Bengal.
- **Gangaikondacholapuram:** Established the city of Gangaikondacholapuram and constructed the renowned **Gangaikonda Cholapuram Temple**.
- **Naval Expedition to Kadaram:** Launched a naval expedition to Kadaram (Sri Vijaya, Indonesia), annexing Sri Lanka in the process.
- Established educational institutions, earning the title '**Pandita Chola**'.

LEGACY AND DECLINE

- **Kulathunga Chola I:** Grandson of Rajendra Chola, he upheld the Chola legacy by abolishing taxes, fostering trade with China, and uniting the Vengi kingdom with the Chola Empire.
- **Rajendra III:** The last Chola king, defeated by **Jatavarman Sundarapandya II**, marked the decline of the Chola empire.
- With the fall of the Cholas, the Pandya and Hoysala kingdoms emerged on the stage of South Indian history, marking the end of an illustrious era.

By empowering merchant guilds such as the Manigramam and Ayyavole, and sustaining local assemblies, the Cholas expanded both trade and legitimacy. However, the Chola system was far from egalitarian in the modern sense. It excluded women, labourers, and landless groups.

MARATHA MILITARY LANDSCAPES IN UNESCO'S WORLD HERITAGE LIST

#MARATHA FORTS #UNESCO HERITAGE TAG

PRIMARY SOURCE THE HINDU

During the 47th session of the World Heritage Committee (WHC) held in Paris, **Maratha Fort Systems in India got UNESCO Heritage Tag.**

MARATHA MILITARY LANDSCAPES IN UNESCO'S WORLD HERITAGE LIST

- **Maratha Military Landscapes of India** has been inscribed on the UNESCO World Heritage List. The decision was taken during the ongoing 47th session of the World Heritage Committee (WHC) being held in Paris.
- With this inscription, India now has **44 properties on the UNESCO World Heritage List**. India ranks 6th globally and 2nd in Asia Pacific Region for the most number of World Heritage Sites.
- The purpose of including these heritage sites in UNESCO's list is to preserve and promote shared heritage based on OUVs (Outstanding Universal Values) found in cultural, natural as well as mixed properties across 196 countries.

Maratha Military Landscapes of India Inscribed in the UNESCO World Heritage List as India's 44th Entry



MARATHA MILITARY LANDSCAPES

- Maratha Military Landscapes of India is an extraordinary **network of twelve forts** spread across the states of Maharashtra and Tamil Nadu.
- **The list includes forts at:** Raigad, Salher, Shivneri, Lohagad, Khanderi, Rajgad, Pratapgad, Suvarnadurg, Panhala, Vijaydurg, Sindhudurg (Maharashtra) and one Gingee Fort in Tamil Nadu.
- The forts are located across a range of diverse terrains - from coastal outposts to hilltop strongholds - reflecting a sophisticated understanding of geography and strategic defence planning.
- **Time Period:** 17th to 19th Centuries CE.

UNESCO'S WORLD HERITAGE LIST

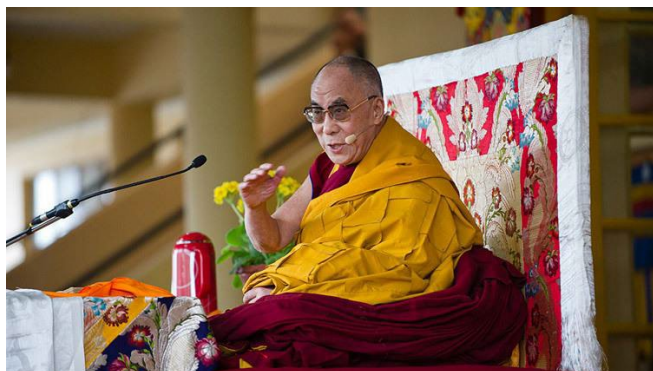
- UNESCO's **World Heritage Convention** was adopted in 1972 and entered into force in 1975.
- **Objective:** To identify, protect and help preserve international sites of exceptional ecological, scientific, or cultural importance.
- As of 2025: India has **44 UNESCO World Heritage Sites**. These include 36 cultural sites, 7 natural sites, and 1 mixed site (Khangchendzonga National Park).
- In 2024, the **Moidams of Charaideo, Assam** was inscribed in the World Heritage List.

DALAI LAMA

#PERSONALITIES IN NEWS

PRIMARY SOURCE THE HINDU

The 14th Dalai Lama announced that the 600-year-old institution of the Dalai Lama would continue and the **Gaden Phodrang Trust** (the official office of the Dalai Lama) shall be the **sole authority** to recognise the future reincarnation.



WHO IS DALAI LAMA?

- “Dalai Lama” is a title which is a combination of the Mongolic word dalai ('ocean') and the Tibetan word lama ('master, guru').
- This title was **first conferred in 1578** upon Sonam Gyatso, the leader of the Gelug school of Tibetan Buddhism, by **Altan Khan**, the first Shunyi King of Ming China.
- The first two Dalai Lamas were offered this title posthumously. The Third Dalai Lama was a living leader to receive this title (Sonam Gyatso).

THE DALAI LAMA LINEAGE

- The institution of the **Dalai Lama is part of the tulku concept in Tibetan Buddhism**, in which spiritual masters are reincarnated upon their death, so that their teachings can be preserved and carried forward.
- All tulkus in the lineage of the Dalai Lamas are considered manifestations of the **Buddha Avalokiteshvara**, or Chenrezig, the Bodhisattva of compassion, and the patron saint of Tibet. Bodhisattvas are persons who are on the path to becoming a Buddha, but who put the liberation of other sentient beings ahead of entering nirvana themselves.
- The **first Dalai Lama**, Gedun Drupa, was born in 1391. Beginning with Lobsang Gyatso (1617-82), the fifth of the line, the **Dalai Lama became both the spiritual and political leader of Tibetan Buddhists**.
- The **14th Dalai Lama** (Tenzin Gyatso) escaped from Lhasa in 1959 during the Tibetan diaspora and lives in exile in Dharamsala, India. He was recognised as the reincarnation of the previous 13th Dalai Lama, Thubten Gyatso at the age of two.

SIGNIFICANCE

- The Dalai Lama is the symbol of unification of Tibet.

- He represents Buddhist values and traditions not tied to a specific school.
- From the 5th Dalai Lama onwards, the lineage was enjoined with the secular role of governing Tibet.

14TH DALAI LAMA AND TIBETAN GOVERNMENT-IN-EXILE

- **The 14th Dalai Lama** (Tenzin Gyatso) was born in the hamlet of Taktser in north-eastern Tibet, now Qinghai province of China, on July 6, 1935. He was identified at age 2 as the reincarnation of Thubten Gyatso, the 13th Dalai Lama.
- **1951:** Tibet was annexed by China.
- **1959:** Tibetan national uprising was crushed by Chinese troops. The 14th Dalai Lama escaped from Lhasa along with a group of his followers, and crossed into India at Khenzimane in Arunachal Pradesh.
- **1960:** Jawaharlal Nehru's government settled him in McLeodganj, Dharamshala, where the Tibetan government-in-exile was established.
- **2011:** Dalai Lama wrote to the Assembly of Tibetan People's Deputies, known as the Tibetan parliament-in-exile, asking to be relieved of his temporal authority. Formal transfer of political power to the democratically elected leader of Tibetans living in exile took place, **ending a 368-year-old tradition** in which the Dalai Lama was both the spiritual and political head of Tibetans.

DALAI LAMA & CHINA

- **China denounces the 14th Dalai Lama** as a “splittist”, “traitor”, and an exile with “no right to represent the Tibetan people”, and prohibits any public show of devotion towards him.
- In his 2011 statement, the Dalai Lama had said that **his reincarnation should be found in a free country**, not under Chinese control. No recognition should be given to a reincarnation selected for political purposes by the Chinese government.
- Tibetans fear that as the Dalai Lama grows older, Beijing could announce a successor of its choice, and use it to **tighten its control over the Tibetan Buddhist religion and culture**.
- The Chinese government insists any appointment must be approved by the government in Beijing, citing a traditional **golden urn process** dating back to the Qing dynasty.

15TH DALAI LAMA

- **2025:** 14th Dalai Lama announced that the 600-year-old institution of the Dalai Lama would continue and the **Gaden Phodrang Trust** (the official office of the Dalai Lama) shall be the **sole authority** to recognise the future reincarnation.

GADEN PHODRANG

- Gaden Phodrang refers to the **residential quarters** of the Dalai Lama lineage from the second Dalai Lama onward at Drepung Monastery in **Lhasa, Tibet**.

There are **three institutions associated with Dalai Lama:**

1. Gaden Phodrang Trust:

- Registered in 2011 in Dharamshala with the **aim** of recognising the reincarnation of the Dalai Lama.
- It is based in the office of the Dalai Lama. The Dalai Lama heads the trust, whose members include some other aides of the spiritual leader.

2. Gaden Phodrang Foundation:

- Tax-exempt Swiss nonprofit with its registered office in Zurich, and is supervised by the Swiss Federal Department of Home Affairs.
- It is funded by charitable contributions made by the founder and the public.
- The Dalai Lama is the founder and president of the foundation.
- **Aim:** To maintain and support the tradition and institution of the Dalai Lama, preserve Tibetan culture, promote basic human values, mutual understanding among religions, peace and non-violence, and protection of the environment.

3. Dalai Lama Trust:

- Non-profit charitable organisation founded by the 14th Dalai Lama in 2009, headquartered in New Delhi.
- **Aim:** To support the welfare of the Tibetan people and to promote human values, interfaith harmony, and world peace. Support Tibetan students and scholars and fund schools and educational institutions.

KEY FACTS

- The 14th Dalai Lama was conferred the Nobel Peace Prize in 1989.

- **Books authored by him:** Freedom in Exile (autobiography); Voice for the Voiceless.

PANDHARPUR WARI

#IMPORTANT FESTIVALS #HERITAGE

PRIMARY SOURCE THE HINDU

*Every year, in the month of June-July, thousands of devotees in Maharashtra embark on a spiritual journey (yatra) called **Pandharpur Wari**.*

PANDHARPUR WARI

- The Pandharpur wari is an **annual pilgrimage (yatra)** from various parts of Maharashtra to Pandharpur in Maharashtra, the abode of **Lord Vitthal** (revered form of Lord Vishnu).
- It involves carrying the paduka (sacred sandals) of saints in a palki, most notably of **Sant Dnyaneshwar Maharaj** and **Sant Tukaram Maharaj**, from their respective shrines to Pandharpur. Many pilgrims join this procession on foot.
- The tradition is more than 700 to 800 years old. **Warkari** means "one who performs the wari". Warkaris (devotees) walk for nearly 20 days, covering over 250 kilometres on foot.
- Along the way, they sing **abhangas** (devotional songs) and perform kirtans.

KANWAR YATRA

#FESTIVALS #HERITAGE

PRIMARY SOURCE The Indian EXPRESS

Kanwar Yatra is observed during Hindu month of Shrawana (July-August).

WHAT IS THE KANWAR YATRA?

- The **Kanwar Yatra** is an annual pilgrimage undertaken by devotees of Lord Shiva, mostly during the Hindu month of **Shravan**.
- Pilgrims, called **Kanwariyas**, carry water from the holy river Ganga in decorated slings called kanwars, walking to offer it at Shiva temples.

MYTHOLOGICAL ROOTS: WHY GANGA WATER?

- During the churning of the ocean (**Samudra Manthan**), a deadly poison (halahal) emerged.

- To protect the universe, Lord Shiva drank the poison, which turned his throat blue, hence the name Neelkantha. To soothe the burning poison, Ganga water was offered to Shiva.
- Since, this event occurred in the month of Shravan, offering Ganga water to Shiva during this month is considered highly auspicious.

Despite its mythological links, the Kanwar Yatra in its current mass form is relatively recent. It is **not mentioned in major ancient texts or British-era records**. Scholarly analysis suggests that it originated in 1700s Bihar (Sultanganj) and gradually spread across North India.

Where do Pilgrims go?

- **Sources of Ganga water:** Haridwar, Gangotri, Gaumukh (Uttarakhand), Sultanganj (Bihar), Varanasi, Prayagraj, Ayodhya.
- **Shiva temples:** Offerings can be made at any local Shiva temple, though famous destinations include:

- 12 Jyotirlingas
- Baidyanath Dham (Deoghar)
- Kashi Vishwanath (Varanasi)
- Pura Mahadev (Baghpat)
- Augharnath Temple (Meerut)

POPULARITY OF THE YATRA

The popularity of the Yatra received a major boost in the 1980s. Scholars have linked it to following factors:

- Improved connectivity and infrastructure made long pilgrimages easier.
- Hindu Identity Assertion
- Rising Incomes in North India

Sociological Significance: The Kanwar Yatra helps blur rigid caste boundaries by fostering shared religious participation and community bonding across social hierarchies.

PRACTICE QUESTIONS

MCQS

Q1. Which of the following statements about the Keeladi excavation site is/are correct?

1. Keeladi is located on the banks of the Kaveri River.
2. The site has revealed evidence of urban civilisation dating back to the 6th century BCE.
3. Artefacts from Keeladi suggest trade and cultural exchange with the Indus Valley Civilisation.

Select the correct answer using the code given below:

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

Q2. With reference to the Kudavolai system during the Chola period, consider the following statements:

1. It was a method of electing local village representatives using palm leaf ballots.
2. Only men between the ages of 35 to 70 who owned land and had knowledge of administration or scriptures were eligible.

3. Women and landless labourers were active participants in this system.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

Q3. Consider the following statements with reference to Chola dynasty:

1. Karikala was the most well-known ruler of Sangam-age Cholas.
2. Rajaraja I is credited with the construction of Rajarajeswara temple in Tanjore.

Which of the statements given above is/are correct?

- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Q4. With reference to the Kanwar Yatra, consider the following statements:

1. It is primarily undertaken during the Hindu month of Shravan.
2. Devotees carry water from the Ganga river to offer it to Lord Shiva.
3. The practice is mentioned in ancient Vedic scriptures.

Which of the statements given above is/are correct?

- | | |
|------------------|------------------|
| (a) 1 and 2 only | (b) 2 and 3 only |
| (c) 1 and 3 only | (d) 1, 2 and 3 |

Q5. Consider the following pairs :

Traditions

Communities

- | | |
|---------------------------|------------|
| 1. Chaliha Sahib Festival | - Sindhis |
| 2. Nanda Raj Jaat Yatra | - Gonds |
| 3. Wari-Warkari | - Santhals |

Which of the pairs given above is/are correctly matched?

- | | |
|------------------|-----------------------|
| (a) 1 only | (b) 2 and 3 only |
| (c) 1 and 3 only | (d) None of the above |

Answers: 1-b, 2-a, 3-c, 4-a, 5-a

PART TWO

ETHICS, INTEGRITY & APTITUDE

Coverage from varied sources

JAINA ETHICS

#ETHICS INTEGRITY AND APTITUDE #MORAL THINKERS AND PHILOSOPHERS

About Jainism: Jainism is one of the oldest religions in the world, it is not only a spiritual tradition but also a profound philosophical system with rich ethical principles. Jaina ethics provide a comprehensive framework for leading a life of **virtue, compassion, and non-violence**. Let's discuss the key principles of Jaina ethics, their significance, evolution, and application in contemporary society.

Historical Context and Evolution of Jain Ethics: The ethical principles of Jainism find their roots in the teachings of Mahavira, the twenty-fourth Tirthankara, who lived around the 6th century BC. Mahavira emphasised the concept of Ahimsa, or non-violence, as the cornerstone of Jain ethics. Over the period, Jain ethical philosophy evolved through the writings of various Jain scholars and thinkers, including **Acharya Umasvati**, who composed the **Tattvartha Sutra**, a fundamental text outlining the core principles of Jainism.

Principles of Jaina Ethics: These are the principles of Jainism following which, individuals can cultivate a more ethical and fulfilling existence, contributing to the wellbeing of themselves and the world around them.

TRI RATNA (THREE JEWELS)

- **Right faith (Samyagdarsana):** Right faith implies faith in knowledge imparted by Jaina enlightened beings. Faith increases with meditation. It can be perfect faith only when complete knowledge has been obtained.
- **Right Knowledge (Samyag Jnana):** In right faith, the knowledge is merely of the essence of Jaina preaching. In right knowledge, there is specialized knowledge of the rudiments of Jiva and Ajiva. It destroys ignorance.
- **Right Conduct (Samyak Caritra):** It includes the adoption of beneficial activities and the abandoning of harmful ones. This frees the Jiva from Karmas. Right character includes forgiveness, softness, simplicity, truthfulness in thoughts and speech, cleanliness, sacrifice etc.

Tri Ratna

- Right faith
- Right Knowledge
- Right Conduct

Panch Vrata

- Ahimsa
- Satya
- Asteya
- Brahmcharya
- Aparigraha

PANCH VRATA (FIVE MORAL VOWS/VIRTUES)

- **Ahimsa (Non-Violence):** Ahimsa is the heart of Jain ethics, non-violence is advocated through thought, word, and action. Jains believe in the sanctity of all life forms, practicing compassion and refraining from causing harm to any living being, whether human or animal.
- **Satya (Truthfulness):** Truthfulness is another essential virtue in Jainism, it emphasises honesty, integrity, and sincerity in all aspects of life. Humans should strive to speak the truth, avoid deceit, and uphold the principles of transparency and authenticity in their interactions with others.
- **Asteya (Non-Stealing):** Asteya orders Jains to refrain from stealing or coveting others' possessions. Beyond material wealth, it encompasses respecting intellectual property, avoiding exploitation, and promoting a culture of generosity and sharing.
- **Brahmacharya (Chastity):** Brahmacharya advocates self-restraint and moderation in physical and emotional desires. While traditionally associated with celibacy, it also emphasises ethical conduct in relationships, promoting respect, fidelity, and harmony in personal and social interactions.
- **Aparigraha (Non-Possessiveness):** Aparigraha teaches detachment from material possessions and worldly attachments. Jains believe in living a simple and minimalist lifestyle, free from greed,

acquisitiveness, and the pursuit of excessive wealth or possessions.

APPLICATION OF JAINA ETHICS IN DAILY LIFE

Jaina ethics provide practical guidance for individuals to lead a life of virtue, compassion, and spiritual growth. In present society, the principles of Jainism find application in various spheres of life, including:

- **Environmental Conservation:** Jainism advocates environmental stewardship and sustainability, practicing respect for nature and minimising ecological harm through vegetarianism, conservation efforts, and eco-friendly lifestyles.
- **Social Justice:** Jain ethics promote social harmony, equality, and compassion for the marginalised and disadvantaged. Jains are actively involved in philanthropy, charitable activities, and community service to alleviate suffering and promote social welfare.
- **Business Ethics:** In the business world, Jaina principles of honesty, integrity, and fair dealing serve as guiding values for ethical conduct. Jains emphasise ethical business practices, corporate social responsibility, and sustainable development, prioritising values over profits.

SIGNIFICANCE OF JAINA ETHICS FOR A CIVIL SERVANT

Civil services are swamped with ethical dilemmas and decisions which impact the lives of millions of poor and indigent. Jaina ethics offer a framework for civil servants to navigate their roles with integrity, compassion, and non-violence.

- **Ahimsa in Governance:** Civil servants embodying the spirit of Ahimsa contribute to fostering a culture of peace, harmony, and social cohesion within society.

- By promoting dialogue, mediation, and reconciliation, they can mitigate conflicts, address grievances, and build trust between communities.
- Moreover, in policy-making and implementation, civil servants can prioritise non-violent approaches to address socio-economic disparities, promote social justice, and ensure inclusive development for all sections of society.

- **Satya and Asteya:** Pillars of Integrity and Accountability: In the pursuit of truthfulness (Satya) and non-stealing (Asteya), civil servants uphold the principles of honesty, transparency, and ethical conduct in their official duties. Transparency in decision-making processes, accountability for actions, and integrity in upholding the rule of law are essential for maintaining public trust and confidence in governmental institutions.
- **Aparigraha:** The principles of Aparigraha (non-possessiveness) guide civil servants towards ethical leadership and servant leadership. Aparigraha promotes detachment from power, privilege, and material possessions, encouraging civil servants to prioritize public service over personal gain and to serve with humility, compassion, and empathy.

Thus, the principles of Jaina ethics hold relevance in the life of a moral citizen in general and civil servant in particular, guiding them towards ethical conduct, moral leadership, and service-oriented governance. By embodying the above values civil servants can uphold the highest standards of integrity, compassion, and non-violence in fulfilling their duties and responsibilities towards society. Doing so, they contribute to the advancement of ethical governance, social justice, and the common good, thereby embodying the true spirit of public service.

CASE STUDIES FOR PRACTICE

MAINS GS PAPER IV

Case Study 1: You are posted as S.P. in a district where liquor is prohibited for human consumption. One day 36 people died in a village in that district after consuming spurious liquor. The incident has pushed the state into swift action, with multiple agencies of the police working on a joint investigation. Even the state government, set to face an assembly poll in the next six months, is receiving a barrage of criticism from the opposition. Your preliminary investigation revealed that a local mafia is involved in manufacturing this spurious liquor, and he is the relative of a minister in the government. You are getting threats from the mafia and the minister both. Both are offering a whole sum of money to remain silent. Your promotion file is also pending before the same minister. You may face many difficulties if you do not listen to them.

- What are the ethical issues involved in this case?
- What options are available to you? Analyse each of them.
- What will be your course of action?

SOLUTION

This case study deals with the ethical dilemma of following the law to fulfil one's duty or should surrender the responsibility to protect self-interests.

A) Ethical issues involved in this case are as follows:

- Commerce without morality:** Selling liquor in a state where it is prohibited is not only illegal but immoral too.
- Breach of the social contract:** Both state and subjects are breaching the contract because the state failed to implement the law of liquor prohibition and subjects are breaching it.
- Lack of good governance:** The death of people in a state where liquor is Prohibited shows that governance is not prompt.

B) Options Available:

- Following the law in letter and spirit: It will ensure rule of law, which in turn will result in justice to the victims but it may harm his self-interests of life and career which is not good as per hedonism.
- Seeking guidance from the seniors and acting accordingly: It will protect him from any mishap it will also promote teamwork in the organisation but he may be misguided, in that case the very purpose of the law may be defeated.\
- Leave the case: It may protect and promote his selfinterest, but it is against the foundational values of civil services; it is also against the principle of justice of John Rawls.

C) Course of action as an S.P.:

- To prepare himself internally he takes help of emotional intelligence to cater to any kind of fear and pressure and virtues of courage and justice of Aristotle.
- As a part of the legal administrative system, he should follow the all-internal instruments like following the law, senior's advice, seeking intervention of other higher authorities and whistleblowing at last.
- After exhausting all these internal mechanisms without giving desired results he can go to the media or court with the help of NGO so that he ensures justice to the victims for doing so he may need to listen to his conscience as the court of conscience is the highest court.

Conclusion:

- Thus, we can say that SP should perform his duty in letter and spirit so that the menace of illegal acts can be curtailed in society.

Case Study 2: A recently renovated footbridge collapsed, sending tourists plunging into the river in the country's western state. The accident took place in the town of a state, a riverside town known for its Victorian-era bridge. Tourists have been celebrating Diwali and the

new year of the state. Some outlets, citing unnamed officials, reported that the death toll could be higher, exceeding 140. An official list of fatalities compiled by police showed more than 50 children were among the dead, some as young as 5. In addition to the dead, many people are still missing. Some officials estimated up to 400 people were packed onto the bridge, far more than the safe limit, when the suspension cables buckled and the 760-foot span gave way. Some visitors clung to a crumpled bridge barely above the waterline, crying for rescue. Others crawled along its railings back to shore. More were lost in the water. It has been observed that corpses were laid in nearly every corner of free space while hundreds of deceased relatives went from room to room, looking to claim the bodies of their loved ones. In a 10-foot-by-10-foot room used for post-mortems, doctors were "overwhelmed". Rescue operations were delayed because of the unavailability of rescue teams at the local level. Scrutiny turned to the company tasked with renovating and operating the bridge. The contractor, Oreva, a large manufacturer known for producing clocks and electric bikes (with no experience in construction work), wrapped up a six-month bridge renovation last week to coincide with the New Year. The firm with no construction experience got the contract because of its political linkage. The city official Sandeep Singh Zala told the media that the bridge was reopened to tourists without obtaining clearance from the government. Zala also highlighted the bridge operators for selling as many tickets as possible without controlling the flow of people. After a day of investigation, local police arrested nine people, including two Oreva executives, two contractors, three security guards and two ticket window clerks. In their initial legal complaint, local police did not name Oreva or any other firm. Still, they said they would file culpable homicide charges against "the agency responsible for maintaining the bridge" and the "management agency." Because the owner of the firm has political links. As the head of the investigating team of this case, answer the following questions.

(a) Which ethical issues may you face while solving this case?

- (b) What are the options available to you?
 (c) Critically examine the options listed by you.
 (d) What will be your course of action?

SOLUTION

This case deals with the rampant corruption in government contracts, administrative lacunae, poor mob management, promptness of rescue efforts and lack of awareness among the people.

A) Ethical issues involved in case:

- Crony capitalism: awarding the contract to a firm having no domain expertise.
- Lack of integrity: Not mentioning the name of a powerful businessman in the FIR.
- Politics without principle: Politicians awarding contracts to their relatives and protecting them from the law.

B) Option available to me:

- Investigate the case properly.
- Manipulating the case to protect the businessman.
- Seeking guidance from seniors and acting accordingly.
- Leaving the case.

C) Critical examination of the options:

- Investigating the case properly will ensure the rule of law but may pose a danger to my life and career.
- Manipulating the case to protect the powerful businessman may prevent my troubles, but it will defeat foundational values of civil service like integrity.
- Seeking guidance from seniors may help me in solving the case in a requisite manner, and it will also improve the teamwork and work culture in our organisation, but they may misguide me if they have vested interests.
- Leaving the case may prevent me from various tensions, but it shows lack of courage and dedication to service.

D) Course of Action:

- As head of the investigating team, one should be mentally prepared and internally motivated; He should use emotional intelligence.
- To ensure the rule of law, he should avoid any kind of prejudices or rumours.
- To ensure justice for the victims, he should ensure the names of all real culprits in the charge sheet.
- He can seek guidance from seniors but must ensure that they are not misleading him.
- If he finds that his efforts are enough to deliver justice, then can be a whistle-blower, or he can go to the media.

Conclusion: This is how it can be concluded that to deal with issues of crony capitalism and to ensure the rule of law in society, civil servants should follow the foundational values of civil services.

PART THREE

ESSAYS OF THE MONTH

Selected essays from Rau's GSI students

EVERYTHING WE HEAR IS AN OPINION NOT A FACT. EVERYTHING WE SEE IS A PERSPECTIVE, NOT THE TRUTH

#PHILOSOPHICAL

SUBMITTED BY: PRAGNA MOLDIREDDY

Disclaimer: The viewpoints in the topic are strictly personal of the writer above. The role of Rau's IAS Study Circle is to present the write-up in its original form, hence the study circle neither endorses nor rejects any viewpoint in the submission. The purpose is only to showcase the manner of writing.

Therefore, it is the sole responsibility of the reader to use his/her intellect to check the veracity of viewpoints.



"1984," a novel by George Orwell, follows the life of Winston Smith, who lives in a totalitarian regime led by Big Brother. In this dystopian society, truth and reality are manipulated by those in power, highlighting the subjective nature of information and the control of perspectives. At the end of the book, Smith too is brainwashed by the regime, underscoring the triumph of totalitarianism over freedom and truth. When I was younger and read this book, it scared me to such an extent that I refused to believe something like this could even happen to people living in modern democratic societies. However, seeing what is going on in the world around us, I cannot help but wonder how close to 1984 we are.

Unraveling Perception and Truth:

When the COVID-19 pandemic began in 2020, there was too much going on for any of us to understand – lockdowns, illnesses, lack of communication with our loved ones, etc. But once the dust started to settle down, the trouble began. The war between the pro and antivaxxers, maskers and anti-maskers, conspiracy theories about the origin of the virus, and the disinformation which was spreading at an alarming rate on social media left me and most around me questioning what was the truth and what was not. When we are inundated with information, it becomes hard for us to discern what is an opinion and what is a fact without getting swept away.

Subjectivity & Perception:

Our senses, while powerful, are filtered through a lens of personal experiences, biases, and our own interpretations. What we hear, whether it is through verbal communication or media, is shaped through the speaker's viewpoint, colored by their beliefs, emotions, and intentions. Similarly, what we see is influenced by our own cognition, filters, predispositions, and context. For example, an accident happened on a busy road in a city. There were multiple witnesses to this accident. However, when questioned by the police, each recounted the incident differently based on his/her vantage point, emotions, and prior experiences.

Opinions vs. Facts:

Facts are tangible, empirical observations that are verifiable through logic. That the sun rises in the east is a fact. Death being inevitable is a fact. These facts exist independently of one's beliefs or perspective. On the other hand, opinions are subjective expressions shaped by personal viewpoints, values, and emotions. Yellow is a 'happy colour' is an opinion. Smart people are not hardworking is an opinion. Opinions often lack irrefutable grounding of factual evidence, making them malleable and open to wide interpretation. For example, in the book "The Life of Pi" by Yann Martel, there are multiple versions of the story, leaving the reader to choose which perspective to believe in. It challenges the idea of a single truth; thus, the opinions on the endings are too extreme due to offering different accounts of the events.

Subjective Lens of Media:

In today's era of rapid information dissemination, navigating the dichotomy between perception and truth becomes increasingly challenging. News outlets, social media, and interactions with loved ones leave us with a

multitude of perspectives and opinions. This subjective lens blurs the line of objective reality, leading to confusion and polarisation. It could be on issues like abortion, divorce, genetic editing, vaccines, political ideology, among others.

What can we do?

All this calls for critical thinking and mindfulness. We need to approach information with an open mind but need to acknowledge the inherent biases and subjectivity present in what we hear and see. By cultivating awareness of our own perspectives and being open to diverse viewpoints, we can strive towards a more nuanced understanding of

the world. We should not become like those who stand on opposite sides of a number and argue if it's a 6 or 9.

The Quest for Truth:

This quest involves a process of continuous evaluation and willingness to revise our understanding based on new information and diverse perspectives. Understanding the distinction between opinions and facts prompts us to approach information with a critical eye, acknowledging biases and subjectivity in what we hear and see. Embracing this understanding helps us navigate the complexities of our world with greater awareness.

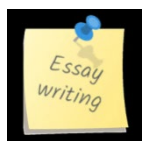
WASTE ISN'T A WASTE UNTIL WE WASTE IT

#PHILOSOPHICAL

SUBMITTED BY: PRATEEK YADAV

Disclaimer: The viewpoints in the topic are strictly personal of the writer above. The role of Rau's IAS Study Circle is to present the write-up in its original form, hence the study circle neither endorses nor rejects any viewpoint in the submission. The purpose is only to showcase the manner of writing.

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In the Ramayana, it is well-known that two ordinary monkeys – Nal and Neel – played key roles in building Ram Setu. Before Lord Rama delegated this crucial task to them, society considered Nal and Neel wasted beings, owing to a sage's curse. Had Lord Rama not realized the potential even in a curse – that whatever these monkeys touched would never sink in water – it would have been impossible for him to reach Lanka. This illustrates that even what is considered 'waste' can be useful, depending on circumstances and the ability to discern potential.

In this essay, we will explore the concept of 'waste,' why certain things are labeled as waste, philosophical aspects of waste's potential, methods to realise this potential, and more.

First and foremost, 'waste' is a human construct applied to anything in the material world considered devoid of utility for humans. Thus, things labeled 'waste' are typically discarded. For instance, households dispose of garbage, industries release effluents and emissions, societies abandon outdated values (like feudalism), and nations discard ineffective policies.

From this understanding of 'waste,' we realize it's essentially a utilitarian concept. However, Aristotle suggested that everything in the world has a 'telos' – a potential, a purpose to fulfill. Only a few things achieve their 'telos,' often due to a supportive ecosystem. But does this mean that things unable to reach their 'telos' are wasteful?

According to Aristotelian reasoning, not necessarily. A thing is waste only insofar as the user fails to recognize its potential. For example, household care work, once disregarded, is now acknowledged as a potential cure for mental health issues.

The increasing prevalence of health problems has compelled Western societies to reconsider women's caregiving roles within families. Care work, long deemed

wasteful, is now recognised for its importance in providing physical and emotional support to the sick and elderly.

Moreover, technological advancements often unlock the potential of previously considered wasteful things. For instance, the development of technologies for solar power generation revealed the solar power potential of Rajasthan's Thar Desert, once considered a wasteland.

Similarly, advancements in Big Data Analytics and Artificial Intelligence have transformed bulky databases, once deemed incomprehensible, into valuable resources. We now live in a world where "data is the new oil."

However, a question arises: why do people struggle to recognize the potential in things around them? Why do they often label things as wasteful? The answer lies in attitude – the attitude of seeing the big picture, thinking long-term, believing in an unknown future, and exercising wisdom to recognize potential even in so-called waste products.

Gandhi realized the power of non-violence, once considered a weapon of the weak, which became powerful enough to defeat the mighty British Empire. Credit goes to Gandhi for recognizing and harnessing this power, previously unrecognized as waste.

In addition to internal factors like attitude, enabling policy frameworks also help realize value from waste. For

example, the Insolvency and Bankruptcy Code creates value from non-performing assets, while the Carbon Credit Trading Mechanism, proposed in the Energy Conservation (Amendment) Act 2022, aims to create value from carbon emissions by holding emitters accountable for surplus emissions.

Considering something as waste and discarding it may be damaging in various spheres of life, but its most detrimental impact is on the environment. The massive piles of garbage on the outskirts of Delhi, the direct discharge of sewage waste into the River Ganga, and the deadly smog in North Indian cities during October-November are manifestations of humans' myopic and narrowly utilitarian views of waste.

Government programs promoting Circular Economy, waste-to-energy initiatives, and the GobarDhan Scheme are steps toward transforming the conception of waste.

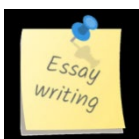
However, the notion of waste must be entirely eradicated. The idea of waste stems from humans' selfish, greedy, and self-centered nature.

If we truly desire a peaceful and harmonious social order, we must respect all humans, transcend our ego, recognize divinity in every small thing, adopt a futuristic vision and approach, foster innovation and creativity to extract value from so-called waste, and respect nature.

THE FUTURE BELONGS TO THOSE WHO BELIEVE IN THE BEAUTY OF THEIR DREAMS

#PHILOSOPHICAL

SUBMITTED BY: LORI THAKUR



Disclaimer: The viewpoints in the topic are strictly personal of the writer above. The role of Rau's IAS Study Circle is to present the write-up in its original form, hence the study circle neither endorses nor rejects any viewpoint in the submission. The purpose is only to showcase the manner of writing.

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On the 15th of August 1947, at the stroke of midnight, our country made a tryst with destiny and achieved the seemingly unachievable dream of computer independence and sovereignty from the British crown. Pandit Jawaharlal Nehru believed in the power of our dreams and thus said in the Constituent Assembly, "We

have to labor and work hard to give reality to our dreams that are for India but also for the world." At the tense moment when the majority opinion sided with being complacent with dominion status for India, the extremists believed in attaining Poorna Swaraj. Our generation owes our present and future to this great vision.

"Dreamers" can often be considered delusional as they tend to dwell in the future. However, as Aristotle once said: "Hope is a waking dream." It is this hope that springs one into action. It is this hope that awakens in us the imagination to come up with new ideas that can bind everyone together towards a cause. IAS officer Mr. Armstrong Pame was faced with a lack of funds and functionaries while executing a road construction project in Manipur. He then resorted to crowdfunding via social media because he dreamt of achieving economic progress in his district. Hope awakens the will to live for oneself and for others. It awakens our conscience to rise up for the cause of shared humanity. This hope has manifested true and again in history as courage within great world leaders of the world, most prominently in Mr. Martin Luther King Jr., who fought for the Civil Rights Movement in the USA.

It is our ability to dream that has brought forth sociological as well as technological advancement in the world. Who could have imagined in the 1920s that one day the world would be at your behest with just a click away? Or that a child in India could access speeches and lectures delivered by the brightest minds of the world while sitting thousands of miles away. The Internet, thus, is perhaps among the greatest manifestations of this power to dream.

Our capability for imagination and dreaming is only as effective unless coupled with emotional intelligence and empathy. It is our ability to feel and emote that separates us from other species. Imagination along with moral aptitudes can render one into an unstoppable force of nature. Take, for instance, Dr. William Halsted, the father of modern surgery. He was struck with grief when he saw his wife's hands being smothered with acts and bruises as she encountered harmful chemicals while working as a nurse. It was his love, channelled by his ability to think outside the box, that introduced the practice of wearing gloves during surgeries. Dreaming, thus, requires a force of empathy and to sustain this, we need courage.

As Oscar Wilde once rightly said: "Yes, I am a dreamer. For a dreamer is one who can only find his way by moonlight. And his punishment is that he sees the dawn before the rest of the world." One who dreams and dares to think tangentially to the laid-down norms can be easily targeted by society. In our very own country, social reformers like Raja Ram Mohan Roy, Ishwar Chandra Vidya Sagar, and Savitri Bai Phule were ousted by the elders of the society as they dared to challenge the oppressive norms against women and backward castes. They walked in the moonlight and saw "the dawn" before everyone else, and they were punished for it. However, they persevered through all these hardships because it was the power of their vision that gave them the courage to stand up for what they believed in and persevere through hardships.

Many celebrated figures were, thus, chided once for their courage to change their reality to match up to their dreams. In Vincent Van Gogh's words "I paint my dreams and I dream my paintings." Dreams have the power to fuel the virtuous infinite loop of aspirations and inspirations. Those who challenge the status quo inspire others to aspire in similar directions. If it were not for Galileo Galilei, we wouldn't have known astronomy as it is today.

Thus, this firm belief in one's values further strengthens one's moral structure and in turn fuels the ability to imagine. It is this ability that gives birth to leaders who can guide others to the moral path in Buddha's words "Appo Deepo Bhava," which broadly translates into Gandhiji's idea of "Be the change you want to see in the world." It is their unwavering faith in their dreams that makes one strive towards greatness and happiness. However, belief can often be seen as a double-edged sword.

John Mayer, in one of his songs, has rightly said: "Belief is a beautiful armor but makes for the heaviest sword like punching underwater you never can hit who you're trying for?" At times holding onto one's beliefs may make the person lose his way as he is not willing to adapt to social realities and the changing winds of the world. This debate was very effectively put forth by revivalists vs reformers during the socio-cultural reforms period of India. As beliefs are hollow without considering present realities, dreams are equally hollow without the will for action.

In J.K. Rowling's words, "It does not dwell on dreams and forget to live." Our dreams can easily transport us into a

utopian world that seems so ideal that we rarely want to exit it. However, it is important to spring into action to deliver upon the promises we have made to ourselves. It is imperative to turn our dreams into reality and our empathy into compassion. If it were not for the foresight and vision of Dr. Manmohan Singh and the action and execution of Dr. P.V. Narasimha Rao, the liberalisation economic reforms of 1991 would not have been as successful as they are today.

Bruce Lee has aptly summed up this sentiment as "Knowing is not enough we must apply; willing is not enough we must do." No dream is too big to be achieved, and no dream is too small to be insignificant. History has been witness to great milestones that have sprung from a tiny dream in a tiny town. In the larger scheme of things,

we all may just be tiny specks of dust in the universe, but we all encompass universes in ourselves as rightly proclaimed in the Upanishads. The past, present, and future have all belonged to those who have dared to dream and believe in things that are bigger than themselves.

It is important to never let the spark of hope within us die because "Hope is a good thing and good things rarely die." (Shawshank Redemption). As we dream away our time, we will come to realise that all our aspirations stemming from goodwill are going to guide us all towards a shared goal of shared humanity. Like John Lennon beautifully said: "You may say I'm a dreamer but I am not the only one someday you will join us and make the world live as one."