

# FORTUNE Prelims Precise

December 2025



# FORTUNE IAS

## Toppers in Top 100



# Preface

Fortune IAS Academy presents '**Prelims Precise**', a monthly current affairs magazine through which we make prelims current affairs revision precise and effective.

This magazine is a comprehensive resource that condenses the significant news of each month into distinct sections such as polity and governance, economic development, science & technology, among others.

Each content is organised with the why in news context followed by its explanation.

Fortune Prelims Precise is available to all Prelims cum Mains batch students (2024) as part of the course study material. **It can be purchased from Fortune IAS Academy for Rs. 75 per issue.**



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# Polity & Governance

## Essential Services Maintenance Act (ESMA)

- The Haryana government recently invoked the **Haryana Essential Services Maintenance Act (ESMA)** prohibiting strikes by government doctors for six months.
- The **Essential Services Maintenance Act (ESMA)** is an Act of Parliament enacted to ensure the uninterrupted delivery of essential services whose disruption would affect public welfare and normal life.
- It **covers services** such as public transport, health (doctors and hospitals), water supply, electricity, postal and telecommunication services, and banking, and **empowers the government to declare any service “essential”** if strikes are likely to cause grave hardship or threaten public safety.
- Constitutionally, ESMA falls under **Entry 33 of the Concurrent List**, allowing both the Centre and States to legislate; while the **Central ESMA, 1968** provides a uniform framework, most States have their own versions with minor variations.
- The **Act authorises the Centre or States to prohibit strikes** in notified essential services for up to six months (extendable), declares such strikes illegal, and overrides the **Industrial Disputes Act, 1947** in case of conflict.
- **Violations** can attract imprisonment up to one year and/or fine, with provisions for arrest without warrant.

## Assam Accord

- The **Supreme Court** has sought the Centre’s response on whether a recent government order allowing **persecuted religious minorities** from **Afghanistan, Pakistan and Bangladesh** safe passage to India violates the **Assam Accord, 1985**.
- The **Immigration and Foreigners (Exemption) Order, 2025** issued under the Citizenship (Amendment) Act, 2019 (CAA) permits such minorities who entered India **before December 31, 2014** to be eligible for citizenship.

- The **Assam Accord (1985)**, signed to end the Assam agitation against illegal migration, was implemented through **Section 6A of the Citizenship Act, 1955**, which classified migrants from Bangladesh into three categories:

👉 Those who entered **before 1966** (regularised as citizens),

👉 **1966–25 March 1971** (disenfranchised and regularised after 10 years)

👉 **After 25 March 1971** (to be detected and expelled).

- The **Ministry of Home Affairs** is the nodal agency, and Assam set up a dedicated department in **1986** to implement the Accord.

## National Intelligence Grid (NATGRID)

- NATGRID, a **Ministry of Home Affairs centralised intelligence-sharing IT platform**, is witnessing heavy use from central and state agencies.
- Conceived after the **26/11 Mumbai attacks (2008)**, NATGRID **integrates 24+ datasets** including immigration, banking, travel and telecom records to track suspects.
- Access, **earlier limited to 10 central agencies** such as IB, R&AW, NIA, ED and NCB, has **now been extended to Superintendent of Police (SP)-rank officers** of State police.
- In 2020, NATGRID signed an MoU with the National Crime Records Bureau (NCRB) to access Crime and Criminal Tracking Network & Systems (CCTNS), which links about 14,000 police stations and mandates online FIR registration by State police.

## Flight Duty Time Limitation

- **DGCA** granted IndiGo a temporary one-time exemption from certain night operation norms under the new **Flight Duty Time Limitation (FDTL)** rules amid mass cancellations..
- The **Directorate General of Civil Aviation (DGCA)** is India’s **apex regulatory body** overseeing civil aviation, established in 1946.
- **Operating under the Ministry of Civil Aviation**, the DGCA is responsible for **Licensing** (Issuing licenses to pilots, aircraft maintenance engineers, and air traffic controllers), **Safety Oversight**, Regulatory Framework & Training Oversight.

- The **FDTL** are laid down by the **DGCA** to ensure **adequate rest timings for pilots and flight attendants** and prevent fatigue-related safety issues.
- Under the new FDTL rules, the weekly **rest period for pilots was increased to 48 hours from 36**, and night landings were **limited to two from six earlier**.

### Revised FDTL regulation for flight crews



Weekly rest period increased from **36 hours** to **48 hours**



Definition of night duty covers **12AM-6AM** compared to 12AM-5AM previously



Maximum of **2 landings** for night operations



Airlines to share regular fatigue reports



Operations encroaching into night timings: Maximum flight time **limited to 8 hours**, flight duty period **restricted to 10 hours**

THE CapTable  
A Yearly Product

Source: The CapTable research

## PRAGATI

- The Prime Minister recently chaired the 50th meeting of PRAGATI - **Pro-Active Governance and Timely Implementation**.
- **PRAGATI** (Pro-Active Governance and Timely Implementation) is an information and communications technology (**ICT**)-enabled **governance platform** chaired monthly by the **Prime Minister** to monitor projects and resolve grievances.
- Designed by the PMO team with the National Informatics Centre (NIC), it integrates **video conferencing, dashboards and geo-spatial tools**.
- Brings together **Union Secretaries and State Chief Secretaries** for real-time review, delay resolution and time-bound decisions.
- Structured at **three levels**: PMO, Union Government, and States, enabling **Centre-State coordination**.
- Integrates databases of **CPGRAMS, Project Monitoring Group (PMG)** and **MoSPI**, and aims to link platforms like **Aadhaar, DigiLocker, UMANG, and myScheme**.
- **Issues discussed** are drawn from public grievances, ongoing schemes and pending projects.
- **CPGRAMS** is a 24x7 online portal for citizens to lodge service-delivery grievances with all Ministries and States.

## Competition Commission of India (CCI)

- CCI has taken cognisance of information filed against **IndiGo** Airlines over alleged abuse of market power amid flight disruptions.
- India's first competition law was the Monopolies and Restrictive Trade Practices Act (**MRTP Act, 1969**) that had an MRTP Commission for inquiry and adjudication
- CCI was set up as a **statutory body** under the **Competition Act, 2002** (operationalised after the **2007 Amendment**) following the **Raghavan Committee (2000)** recommendations.
- CCI seeks to prevent **anti-competitive agreements**, curb **abuse of dominant position**, and regulate **combinations (M&A, acquisitions)** causing appreciable adverse effect on competition in India.
- CCI has **Chairperson + 2 to 6 whole-time Members**, appointed by the Central Government, with **minimum 15 years' expertise** in fields like economics, law, business, finance or competition policy.
- CCI also gives **opinions** on competition issues when referred by **statutory authorities** like TRAI, SEBI, RBI etc.

## Contempt of Court

- The **Supreme Court** observed that the power to punish for criminal contempt is **not a "personal armour" for judges** to stifle legitimate criticism
- In India, 'contempt of court' is a **reasonable restriction on freedom of speech** under Article 19(2), but the Constitution provides no guidelines for initiation.
- The **Supreme Court (Article 129)** and **High Courts (Article 215)** are courts of record, inherently empowered to punish for contempt.
- This power is codified in the Contempt of Courts Act, 1971, which classifies contempt as:
  - ➔ **Civil Contempt** (Section 2(b)): Wilful disobedience to any court judgment, order, writ, or undertaking given to the court.

- ➔ **Criminal Contempt** (Section 2(c)): Publication or act that (i) scandalises or lowers the authority of the court; (ii) prejudices or interferes with ongoing judicial proceedings; or (iii) obstructs the administration of justice.

- Proceedings can be **initiated suo motu** by the Supreme Court/High Courts or on a **petition with prior consent of the Attorney General** (for SC) or **Advocate General** (for HC).

## Narco Test

- The Supreme Court in *Amlash Kumar v. State of Bihar* (2025) held that any **forced or involuntary narco test is unconstitutional**, reiterating the guidelines laid down in *Selvi v. State of Karnataka* (2010).
- A **narco test** involves **administering drugs** like Sodium Pentothal to lower inhibitions and extract information, and is often grouped with polygraph and brain-mapping tests.
- In *Selvi v. State of Karnataka*, the Court ruled that compulsory narco-analysis, polygraph and BEAP tests **violate Article 20(3)** (protection against self-incrimination), as narco-analysis amounts to compelled testimonial evidence.

**Note:** A **polygraph test** measures various physiological responses (respiration, blood pressure, blood flow etc.) during questioning, and makes determinations about the truth or falsity of the subject's statements, based on the changes in those responses.

**The Brain Electrical Activation Profile (BEAP) test** measures responses within the brain, in order to ascertain whether or not the subject has recognised the stimuli to which she has been exposed.

- Out of these three tests, only narco-analysis involves “testimony” in the classic sense: communicating information through words, written or spoken. One of the central issues in the case, therefore, was whether recording physical stimuli amounted to compelling a person to be a “witness against himself”.

## Economy

### PM-SETU Scheme

- The **Ministry of Skill Development and Entrepreneurship (MSDE)**—through the State/UT governments and the **Directorate General of Training (DGT)** has recently invited industry leaders to join the PM-SETU.
- **PM-SETU (Prime Minister Skilling and Employability Transformation through Upgraded ITIs)** is a scheme of the **MSDE**, implemented through **States/UTs and the Directorate General of Training (DGT)**, to modernise the ITI ecosystem and align training with current labour-market needs.
- The scheme aims to **upgrade 1,000 Government ITIs** using a **hub-and-spoke model**, with **200 hub ITIs** supporting about **four spoke ITIs each** with advanced machinery.
- It also proposes to upgrade **five National Skill Training Institutes (NSTIs)**—Bhubaneswar, Chennai, Hyderabad, Kanpur and Ludhiana—into **global Centres of Excellence**.
- A key feature is **industry-led governance**, where each upgraded ITI is managed by an **SPV with 51% industry and 49% government ownership**, supported by **up to 83% government co-funding**, focusing on sectors such as advanced manufacturing, electronics, mobility and logistics.

### National Mission on Edible Oils (NMEO)

- According to a 2024 NITI Aayog report, **India ranks first globally** in the production of rice bran oil, castor seed, safflower, sesame and niger, yet remains heavily import-dependent for edible oils.
- To address low productivity and import dependence, the **National Mission on Edible Oils (NMEO)** adopts a two-pronged approach.
  - ➔ **NMEO–Oil Palm (2021)**, a centrally sponsored scheme, aims to expand oil palm area and raise **Crude Palm Oil (CPO) output**; it introduced **Viability Price (VP)** to assure oil palm farmers' returns despite global CPO price fluctuations.

→ **NMEO–Oilseeds (2024)**, approved for 2024-25 to 2030-31, focuses on achieving **Atmanirbharta** by boosting **production of major oilseeds** (rapeseed-mustard, groundnut, soybean, sunflower, sesamum, safflower, niger, linseed, castor) and improving **extraction from secondary sources** like cottonseed, coconut, rice bran and Tree-borne oilseeds (TBOs), with special emphasis on small and marginal farmers.

- In 2023-24, India produced 12.18 million tonnes of **edible oils, meeting only about 44% of domestic demand**; however, **import dependence has declined** from 63.2% (2015-16) to 56.25% (2023-24), indicating gradual improvement in self-sufficiency.

**INDIA'S GLOBAL RANKING**  
IN PRODUCTION OF EDIBLE OIL AND OIL SEEDS  
India ranks **4th globally** in Overall Production of Edible Vegetable Oil

Global Rank	Edible Oil/Oil Seed
First	Rice Bran Oil, Castor Seed, Safflower, Sesame and Niger
Second	Cottonseed Oil, Groundnut Seeds and Oil
Third	Coconut (shells and oil) and Sesame Seed Oil
Fourth	Rapeseed / Canola Oil
Fifth	Soybean, Soyabean Oil and Linseeds
Sixth	Linseed Oil

Source: Niti Aayog (As of August 2024)

## Infrastructure Investment Trust (InvIT)

- The **National Highway Authority of India (NHA)**-sponsored **Raajmarg Infra Investment Trust** has received **SEBI approval** as an **Infrastructure Investment Trust (InvIT)** to monetise road assets by attracting **retail and domestic investors**.
- **InvITs**, regulated under the **SEBI (Infrastructure Investment Trusts) Regulations, 2014**, are investment vehicles similar to mutual funds that pool investor funds to invest in **completed, revenue-generating infrastructure assets** such as highways and power grids, providing stable income.
- Structurally, an InvIT comprises a **trustee, sponsor, investment manager and project manager**, where the investment manager oversees assets and investments, and the project manager executes projects.
- NHA's InvIT is established as a **trust under the Indian Trusts Act, 1882**, in accordance with SEBI regulations.

## State of Marginal Farmers in India Report 2025

- The **State of Marginal Farmers in India 2025** report was released by the **Forum of Enterprises for Equitable Development (FEED)** on **Kisan Diwas (23 December)**,

Note: In India, farmers are classified by land holdings as **Marginal** (below 1 ha), **Small** (1–2 ha), **Semi-Medium** (2–4 ha), **Medium** (4–10 ha), and **Large** (10 ha and above).

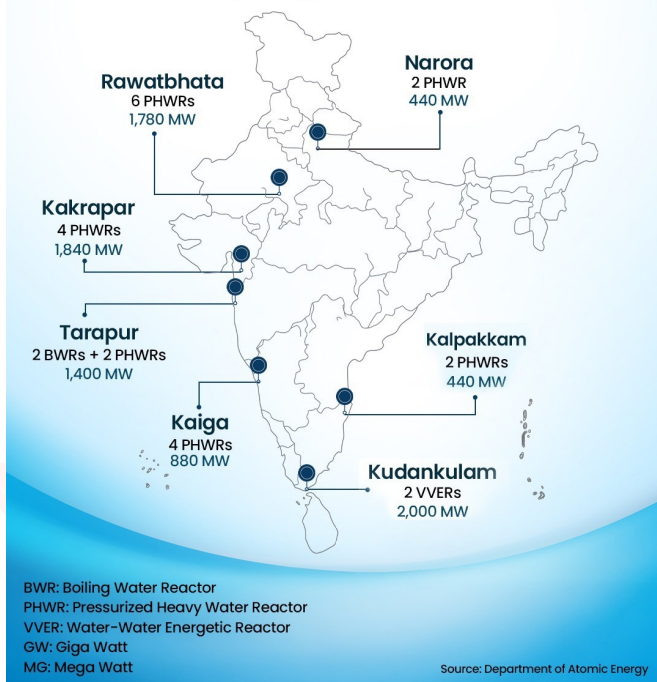
- The report examined the functioning of agricultural cooperatives for marginal farmers across **six states**—Andhra Pradesh, Bihar, Himachal Pradesh, Maharashtra, Tripura and Uttarakhand.
- It found that **less than 25%** of marginal farmers (who form **60–70%** of agricultural households) are active cooperative members, mainly due to **structural barriers** like complex procedures, lack of capital and social exclusion.
- **Digital adoption** remains weak, especially in **Bihar and Tripura**, with **77.8% cooperatives in Tripura** not using digital tools.
- **Gender gaps** persist, as cooperatives are male-dominated: though **21.25 lakh women** are members, only **3,355** serve as directors.
- Positively, **45%** of cooperative-linked marginal farmers reported higher incomes, **49%** improved livelihood security, and about **67%** accessed credit through cooperatives.

## SHANTI Act, 2025

- The **Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Act, 2025** received **Presidential assent**.
- The Act modernises India's civil nuclear legal framework, repealing the **Atomic Energy Act, 1962** and **Civil Liability for Nuclear Damage Act, 2010** to remove growth barriers.
- For the first time, it allows **private companies and joint ventures** to **build, operate, and decommission nuclear power plants** under government licensing.
- **Sensitive activities** like uranium/thorium mining, fuel enrichment, spent fuel reprocessing, radioactive waste management, and heavy water production remain exclusive to the central government.

- The Act grants **statutory recognition to the Atomic Energy Regulatory Board (AERB)**, which existed earlier as an administrative/regulatory body under the Department of Atomic Energy.
- AERB will have a chairperson and members appointed via a **search-cum-selection committee** for three-year terms (extendable to six).
- The Act also establishes the **Atomic Energy Redressal Advisory Council** for appeals, with further recourse to the **Appellate Tribunal for Electricity**.
- The **liability framework** for nuclear activities has been **updated** to clearly define who pays in case of nuclear damage:
  - ➔ **Tiered caps** → Maximum financial liability of the operator is fixed at different levels depending on the type/scale of the accident.
  - ➔ **Compulsory insurance** → Operators must have insurance to cover potential claims.
  - ➔ **Claims Commissioners** → Special officials appointed to **adjudicate compensation claims** from victims of nuclear incidents.

India currently operates 24 reactors across 7 locations, with a total installed capacity of 8.78 GW



## VB—G RAM G Act, 2025

- The President of India has assented to the Viksit Bharat—Guarantee for Rozgar and Ajeevika Mission (Gramin) (**VB—G RAM G**) **Act, 2025**.
- The act replaced the Mahatma Gandhi National Rural Employment Guarantee Act (**MGNREGA**), **2005**, with a framework aligned to Viksit Bharat @2047.

### Key Features:

- **Enhanced Guarantee:** Statutory right to at least 125 days (up from 100) of wage employment per rural household annually for unskilled manual work.
- **Pause Period:** States can notify up to 60 aggregated days of pause during peak agricultural seasons to ensure labour availability; full 125 days provided in the remaining period.
- **Timely Wages:** Mandates weekly payments or within 15 days of work completion; delays attract compensation as per Schedule II.
- **Productivity Focus:** Employment linked to durable asset creation in four priority domains (e.g., water security, rural infrastructure).
- **Funding:** Centrally Sponsored Scheme with 60:40 Centre-State sharing (90:10 for NE/Himalayan states; 100% Centre for UTs without legislatures).

## Corporate Social Responsibility (CSR)

- The **Supreme Court** recently held that **Corporate Social Responsibility (CSR)** inherently includes **environmental responsibility**, recognising that corporations have a fundamental duty to protect the environment.
- CSR refers to a company's responsibility to contribute to **social, environmental, and economic development** and is a **statutory obligation under Section 135 of the Companies Act, 2013** for companies meeting any of these criteria:
  - **net worth > ₹500 crore, turnover > ₹1,000 crore, or net profit > ₹5 crore.**
  - Such companies must spend **at least 2% of their average net profits** of the preceding three years (or all preceding years if incorporated less than three years ago) in permitted CSR activities.

**Schedule VII of the Companies Act, 2013 permits CSR activities** related to eradication of hunger and poverty, healthcare and sanitation, education and women empowerment, environmental sustainability and animal welfare, livelihood and rural/slum development, protection of heritage and support to armed forces veterans, promotion of sports, contributions to specified government relief funds, disaster management, and other notified activities such as COVID-19 awareness or Har Ghar Tiranga.

**However**, normal business activities, activities outside India (except sports training), political contributions are not to be included.

- Companies must form a **CSR Committee** (3+ directors, including 1 independent for listed/public companies) and formulate its CSR Policy.
- Any **unspent CSR amount** must be transferred within six months of the end of the financial year to a specified Schedule VII fund (e.g., PM National Relief Fund, Swachh Bharat Kosh, etc..)
- If it relates to an **ongoing multi-year project**, it must be moved to a separate Unspent CSR Account within 30 days and spent within the project period (up to three years).
- Compliance is enforced by the **Registrar of Companies** through enhanced, data-driven scrutiny under the online **MCA-21 system**, Ministry of Corporate Affairs (MCA).

## Masala Bond

- The Kerala High Court has extended the stay on the **Directorate of Enforcement (ED)**'s show cause notice to **Kerala government** over its masala bonds issue.
- Masala bonds are **rupee-denominated debt instruments** issued by Indian entities to **foreign investors**.
- **Currency risk is borne by investors**, not the Indian issuer (unlike dollar bonds).
- It is used mainly for **infrastructure financing**.
- The first such bond was issued by World Bank Group's **International Finance Corporation (IFC)** in 2014, raising ₹1,000 crore for infrastructure.
- They can be **subscribed to by eligible investors** from **Financial Action Task Force (FATF)**-member countries, with **RBI-prescribed maturities** of three years up to USD 50 million and five years above that, and are **settled at market exchange rates**.

- As of now, **only one Indian state — Kerala** (through the Kerala Infrastructure Investment Fund Board) has publicly issued masala bonds in the international market (listed on London and Singapore exchanges)
- **Other entities** (like NHAI, NTPC, HDFC, IREDA and IFC) have also issued masala bonds.

## Domestic Systemically Important Bank (D-SIBs)

- The **RBI's 2025 list of Domestic Systemically Important Banks (D-SIBs)** continues to include **SBI, HDFC Bank and ICICI Bank**, recognising their critical role in financial stability.
- These banks must maintain **additional Common Equity Tier-1 (CET1) capital** to absorb systemic risks: **SBI** is placed in **Bucket 4 (0.80%)**, **HDFC Bank** in **Bucket 2 (0.40%)**, and **ICICI Bank** in **Bucket 1 (0.20%)**, over and above the Capital Conservation Buffer.
- CET-1 is the bank's own, most reliable money that protects depositors and the system during losses and includes bank's **equity share capital (ordinary shares), share premium, and retained earnings and reserves**,
- The D-SIB framework, introduced in **2014** and updated in **2023**, assigns banks to buckets based on their **Systemic Importance Scores** to reduce "too-big-to-fail" risks.
  - ➔ SBI and ICICI were first identified in 2015–16, and HDFC in 2017, with the current list based on **March 31, 2025 data**.
- Foreign banks operating in India that are designated as **Global Systemically Important Banks (G-SIBs)** must also hold an **additional CET1 surcharge** proportionate to their **Risk-Weighted Assets in India**.
- **Note: The Financial Stability Board (FSB)** identifies G-SIBs as globally significant banks based on their size, cross-jurisdictional activities, and interconnectedness.

The list of D-SIBs is as follows:

Bucket	Banks	Additional Common Equity Tier 1 requirement as a percentage of Risk Weighted Assets (RWAs)
5	-	1%
4	State Bank of India*	0.80%
3	-	0.60%
2	HDFC Bank*	0.40%
1	ICICI Bank	0.20%

## Open Market Operation (OMO) Purchase

- The RBI announced **OMO purchases of government securities worth ₹1 trillion** and a **3-year dollar-rupee buy/sell swap of \$5 billion** to inject **durable liquidity** into the banking system.
- **Open Market Operations (OMOs)** are a monetary policy tool through which the RBI **buys or sells government securities** to manage liquidity.
- **OMO purchases inject liquidity**, while **OMO sales absorb liquidity**.
- The RBI conducts OMOs under **Section 17(8) of the RBI Act, 1934**; OMOs include **outright transactions and repo/reverse repo operations under the LAF**.
- The move comes amid **sharp rupee depreciation (crossing ₹90 per US dollar)** and **foreign investor outflows**, which reduce banking system liquidity.
- **OMO purchases help offset this liquidity drain** by supplying long-term funds to banks.
- However, unlike the UGC, it will have **no powers related to funding or grant allocation**.
- **Each Council** will be headed by a President and comprise expert members, including nominees from the Union government and a rotating State government representative in the Regulatory and Standards Councils.
- The Commission itself will **consist** of a Chairperson (honorary), Presidents of the three Councils, the Union Higher Education Secretary, eminent experts, and academicians from State HEIs, with appointments made by the **President of India**.
- The Bill also provides for fixed tenures, a general age cap of 70 years, and vests **appellate authority in the central government**.

## Viksit Bharat Shiksha Adhishthan Bill, 2025

- The **VBSA Bill, 2025**, introduced in the Lok Sabha, seeks to overhaul India's higher education regulatory framework.
- It seeks to establish the **Viksit Bharat Shiksha Adhishthan (VBSA)** as the apex regulator for the Higher Education Institutions (**HEIs**) in India, excluding legal and medical education from its ambit.
- The proposed body will replace the University Grants Commission **UGC**, All India Council for Technical Education (**AICTE**), and National Council for Teacher Education (**NCTE**).
- VBSA Commission will function through three specialised councils—**Regulatory Council** (common regulator for higher education), **Accreditation Council** (oversight of accreditation), and **Standards Council** (setting academic standards).
- Its **mandate** includes providing strategic direction for higher education and research, promoting the transformation of HEIs into large multidisciplinary institutions, and suggesting quality improvement schemes.
- India has imposed a **three-year safeguard duty (11–12%)** on select **flat steel products** to curb **cheap imports, mainly from China**.
- **Flat steel products** are **steel products that are flat in shape**, as opposed to long or structural forms like rods or beams.
- A **safeguard duty** is a **temporary import tax** imposed by a country to **protect its domestic industry** from a sudden surge in **imports that cause or threaten serious injury** to local producers.
- It is **different from** anti-dumping duty (which targets unfairly low-priced imports) and countervailing duty (which targets subsidized imports).
- Usually **applied for a limited period** (often 2–4 years) and can be reduced gradually.
- Recommended after an **investigation** by a body like India's **Directorate General of Trade Remedies (DGTR), Ministry of Commerce & Industry**.
- Helps domestic industries adjust to competition without permanently restricting trade.
- The move follows a **DGTR finding of a sudden surge in imports** causing **serious injury to domestic producers**.
- In the first eight months of the fiscal year, India was a **net steel importer**, with **domestic consumption rising** and **exports increasing**.

## Safeguard Duty

# International Relations

## World Anti-Doping Agency (WADA)

- India tops the **rankings of global sports drug cheats for a third straight year**, as per the World Anti-Doping Agency (WADA) report released recently.
- The **World Anti-Doping Agency (WADA)**, established on 10 November 1999 after the Lausanne Declaration, is headquartered in Montreal, Canada.
- It is governed by a **42-member Foundation Board** with equal representation from governments and sports organizations, supported by an Executive Committee and specialized committees.
- WADA develops the **World Anti-Doping Code**, maintains the annual **Prohibited List**, conducts research, education, and investigations, accredits laboratories, and oversees **Therapeutic Use Exemptions**.
- India was one of the **founding members** of the WADA and established its own National Anti-Doping Agency (NADA), first registered as a society in 2005.
- NADA was later made statutory under the **National Anti-Doping Act, 2022**.
- While WADA membership is voluntary, adherence to its Code is essential for Indian athletes to participate in the Olympics and other international events.

## United Nations Alliance of Civilizations (UNAOC)

- **Saudi Arabia** hosted the 11th **United Nations Alliance of Civilizations (UNAOC)** Global Forum where **India reaffirmed** its commitment to the ideals of **Vasudhaiva Kutumbakam**.
- The **UNAOC** was established in 2005 by former UN Secretary-General **Kofi Annan** and co-sponsored by Spain and Türkiye to promote understanding and cooperation across cultures.
- It engages governments, civil society, media, and individuals, supported by a UN-administered **Voluntary Trust Fund**.

- UNAOC focuses on **Youth, Education, Media, Migration, and Women as Peace Mediators** to foster global dialogue, prevent intercultural tensions, and promote diversity.
- Its **flagship event, the biennial Global Forum**, convenes leaders, ministers, religious figures, youth, civil society, media, and private sector representatives to advance peace, security, and inclusive societies.
- **India** has been involved with UNAOC since its inception, but has never hosted it yet.

## United Nations Human Rights Council (UNHRC)

- India was elected to the Human Rights Council for the term 2026-28 for the **seventh time**.
- The UNHRC, established by the **UN General Assembly in 2006** and headquartered in Geneva, Switzerland works to promote and protect human rights worldwide.
- The Council has **47 members** elected for staggered **three-year terms** on a **regional group basis**.
- The seats are **distributed** among the United Nations regional groups as follows: Africa (13), Asia (13), Eastern Europe (6), Latin America and the Caribbean (8), Western European and Others Group (7).
- The UNHRC uses four key mechanisms: **Universal Periodic Review (UPR)** to assess human rights in all UN member states; an **Advisory Committee** as its expert “think tank”; a **Complaint Procedure** for individuals and organizations to report violations; and **Special Procedures**, including rapporteurs and working groups, to monitor, advise, and report on specific countries or thematic issues.

## Organization for Marine Aids (IALA)

- India hosted the 3rd Session of the **Council of the International Organization for Marine Aids to Navigation (IALA)** in Mumbai.
- The **IALA**, headquartered in Saint-Germain-en-Laye, France, is a global body that harmonizes **marine aids to navigation** to ensure safe, efficient, and environmentally responsible maritime operations.

- Established in 1957 as an NGO and converted into an **Intergovernmental Organization (IGO) in 2024** with 42 member states, it is governed by a **General Assembly** (meets every four years) and an **executive Council** (typically meets annually).
- IALA works with member states, international organizations, and industry to promote maritime safety and address emerging challenges.
- In February 2025, India was elected to the **Vice Presidency of the IALA** in Singapore at its first General Assembly post becoming an **IGO**.

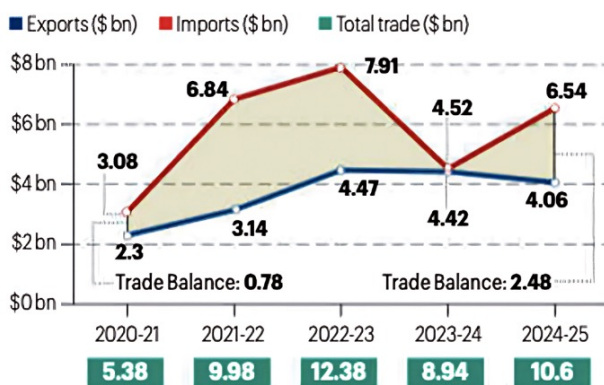
### IALA MEMBER STATES



- The pact also opens **127 services sub-sectors**, allows **100% FDI in services**, expands **professional mobility**, and for the first time globally, grants access for **AYUSH and traditional medicine** across all trade modes.
- In FY 2024-25, India's **bilateral trade** with Oman reached approximately US\$10.6 billion, with India recording a trade **deficit** of about US\$2.5 billion (exports ~US\$4.1 billion, imports ~US\$6.5 billion)
- India has also signed CEPA or similar comprehensive pacts with South Korea, Japan, the UAE, alongside others like Singapore (CECA), Australia (CECA), United Kingdom (CETA) and Mauritius (CECPA).

### India-Oman CEPA

#### INDIA-OMAN TRADE

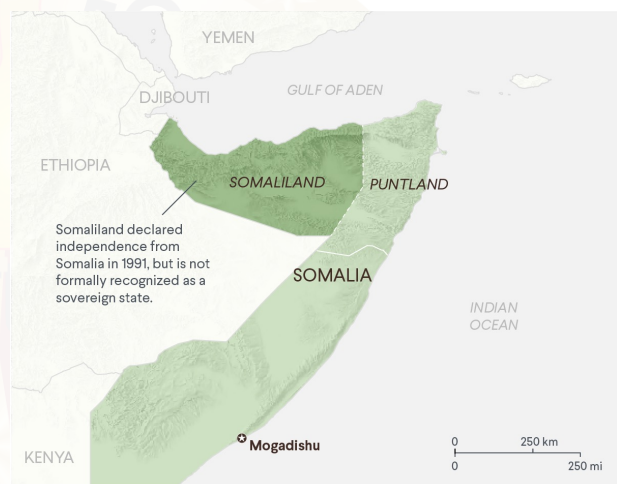


#### Top items exported & imported (2024-25)

EXPORTS (in \$ mn)		IMPORTS (in \$ mn)	
Mineral Fuel	1,571.72	Bituminous Substances	2,940.06
Inorganic chemicals	379.91	Fertilisers	1,069.35
Machinery & parts	231.81	Rare earth metals	407.75
Aircraft & parts	174.72	Organic chemicals	608.74

SOURCE: COMMERCE & INDUSTRY MINISTRY

### Israel Recognises Somaliland as Independent State



#### SOMALILAND AT A GLANCE

<b>Area</b> 176,119 square km (about the size of Missouri)	<b>Form of government</b> Elected president and legislature; appointed judiciary
<b>Population</b> 4.3 million (2014)	<b>Gross domestic product (GDP)</b> \$3.3 billion (2021)
<b>Religions</b> Islam	<b>GDP per capita</b> \$775 (2021)
<b>Primary languages</b> Somali, Arabic, English	

Sources: World Bank; Somaliland Ministry of Planning and National Development.

COUNCIL ON FOREIGN RELATIONS

- India and Oman signed a **Comprehensive Economic Partnership Agreement (CEPA)**, India's second major West Asia trade pact after the UAE and it is Oman's first bilateral trade agreement since the US FTA (2006).
- Oman has eliminated duties on **98% of tariff lines**, benefiting labour-intensive sectors like textiles, gems, pharmaceuticals, and engineering goods.
- Israel has become the first country to formally recognize **Somaliland** as an independent state, which until now lacked recognition from any UN member.
- Somaliland, formerly **British Somaliland**, united with Italian Somalia in 1960 to form the Somali Republic but declared independence in 1991 after Somalia's central government collapsed.
- It functions with **de facto autonomy**—its own currency (Somaliland shilling SLSH), passports, police, and capital (**Hargeisa**)—but has lacked international recognition.

- Located in the **Horn of Africa**, Somaliland oversees strategic shipping routes near the **Bab el-Mandeb Strait**, linking the Red Sea to the Indian Ocean.
- For **UN recognition**, a state must get a UN Security Council recommendation (without a permanent member veto) and two-thirds approval in the General Assembly, which Somaliland has not achieved.
- The **African Union** also avoids recognizing it, following its policy of respecting colonial-era borders (**uti possidetis juris**) to prevent separatist movements.
- The population of Somaliland is **predominantly Muslim**, almost **100% Sunni Islam**, which is also the state religion.

## Kimberley Process

- India became **Vice Chair of the Kimberley Process** on 25th December and will assume its chairmanship on 1st January, 2026.
- The **Kimberley Process (KP)** is an **international mechanism** established in 2003 to **prevent “conflict diamonds”** from entering the mainstream market through a process called the **Kimberley Process Certification Scheme (KPCS)**.
- Conflict diamonds (also called blood diamonds) are rough diamonds used by rebel groups to finance armed conflicts against legitimate governments.
- KP is a **tripartite initiative** involving governments, the diamond industry, and civil society, backed by UN resolutions.
- **KPCS** requires participants to certify rough diamond shipments as conflict-free, with trade restricted to members only.
- It has **60 participants** representing 86 countries, with the EU counted as one.
- The KPCS is a voluntary initiative and members implement it through **national laws**; for example, India enforces it via the **Foreign Trade (Development and Regulation) Act**.
- There is **no global court or treaty mechanism** to punish violations directly; the KP can only **warn, suspend, or expel** non-compliant members.
- The governance structure of KP is such that the **Chair and Vice Chair are chosen via consensus**.

Usually, the **Vice Chair is elected during the plenary of the preceding year**, often in **November or December**, and that Vice Chair **automatically becomes Chair** the next year.

But the **2024 plenary** ended in a **deadlock** with no consensus candidate among nations.

Finally, to resolve the leadership gap, KP members used a **post-plenary written procedure** recently and appointed India as a consensus Vice Chair.

This allowed India to **assume Chairmanship on 1 January 2026** as per normal succession.

This is India's **third time** as KP Chair (2008, 2019 and 2026).



PARTICIPANTS OF KIMBERLEY PROCESS

## RELOS pact

- The Russian Parliament recently ratified the **Reciprocal Exchange of Logistic Support (RELOS)** pact with India, enhancing bilateral military cooperation.
- This comes just ahead of the **India-Russia Annual Summit** when Russian President Vladimir Putin visits India.
- The agreement allows **reciprocal access** to bases, logistical support, port calls, and use of airspace, spanning from **Vladivostok** in the Pacific to **Murmansk** in the Arctic.
- For India, it improves operational reach, endurance, and logistical readiness for distant operations, particularly for Russian-origin platforms, while for Russia it strengthens its presence in the **Indian Ocean Region**.
- It is similar to existing agreements, **LEMOA** (Logistics Exchange Memorandum of Agreement), **COMCASA** (Communications Compatibility and Security Agreement), and **BECA** (Basic Exchange and Cooperation Agreement) with the **US**.

- India also has with **Japan** (ACSA): Acquisition and Cross-Servicing Agreement, **Australia** (MLSA): Mutual Logistics Support Agreement and a General logistics agreement with **France, Singapore and South Korea**.

## Biological Weapons Convention (BWC)

- The Ministry of External Affairs organised an international conference, “**50 Years of BWC: Strengthening Biosecurity for the Global South**”, in New Delhi.
- The Biological Weapons **Convention** (BWC), formally the “Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction,” is a **legally binding treaty**.
- It entered into force on **26 March 1975**, banning the development, production, acquisition, stockpiling, transfer, and use of biological and toxin weapons, **supplementing the 1925 Geneva Protocol**.
- It is the **first multilateral disarmament treaty** to prohibit an entire category of weapons of mass destruction, with **189 States Parties** (India signed and ratified in 1974).
- However, six countries have **neither signed nor ratified the BWC** (Chad, Comoros, Djibouti, Eritrea, Israel, Kiribati).
- **States Parties meet roughly every five years** to review the BWC and maintain its relevance and effectiveness.

## History & Culture

### Thanjavur Painting



- Recently, the Department of Posts undertook the transmission of a priceless Thanjavur painting of Shri Ram from Bengaluru to Ayodhya using its **Logistics Post service**.
- It is a classical South Indian art form originated **in the town of Thanjavur (Tanjore)**, Tamil Nadu, **around 1600 AD**.
- Tanjore or Thanjavur paintings are **created on wooden panels** made from jackfruit or teak, commonly known as **palagai padam**.
- It flourished **under the Nayakas of Thanjavur** and received the **Geographical Indication tag** in 2007-2008.
- It uses **vibrant shades** of reds, blues and greens and **themes include Bal Krishna, Lord Rama, as well as other gods, goddesses, saints and subjects from Hindu mythology**.
- One of the unique features of Tanjore paintings is the **use of Gesso work**.
  - Gesso is a mixture of chalk, gypsum, and glue applied to the surface to create embossed patterns and motifs.
- And they **use pure 22-karat gold leaf** which is gently laid over the gessoed areas to embellish the artwork.

## Khwaja Moinuddin Chisti



- The Supreme Court recently declined urgent hearing of a plea against the Prime Minister offering a chadar at the Ajmer Sharif Dargah of **Khwaja Moinuddin Chishti**.
- Born in **1141 CE in Sijistan (Iran)**, he came to India around **1192 CE**, became a leading **Sunni Hanafi Sufi**, and established the **Chishti order** in India after being initiated by **Khwaja Usman Harooni**.
- Known as **Gharīb Nawāz** for serving the poor, he preached love and tolerance, set up a **khanqah** in Ajmer, and his dargah (after his death in **1236 CE**) remains a major interfaith pilgrimage site.
- Chishti order (tariqa) emphasised **Ishq-e-Ilahi (love for God), service to humanity, renunciation, humility and tolerance**, while maintaining distance from political power and declining royal patronage.
- He institutionalised the **langar** system at Ajmer, encouraged **Sama (spiritual music)** within ethical limits, and made his dargah a major centre of **ziyārat**, with the annual **Urs** marking his spiritual union with God.
- His inclusive, non-coercive approach greatly aided the **social integration of Islam in India**, and his legacy continued through disciples like **Bakhtiyar Kaki, Baba Farid and Nizamuddin Auliya**.

## Deepavali Intangible Cultural Heritage

- Deepavali (Diwali), the festival of lights, has been inscribed on **UNESCO's List of the Intangible Cultural Heritage (ICH) of Humanity**.

- Celebrated across India, it marks the **harvest season** and symbolises the victory of light over darkness and good over evil.
- **Deepavali (Diwali)** is celebrated by Hindus, Jains, Sikhs and some Buddhists.
- For Hindus, it marks events such as **Lord Rama's return to Ayodhya** or the worship of **Goddess Lakshmi**; for Jains, it commemorates **Lord Mahavira's nirvana**; and for Sikhs, it celebrates **Guru Hargobind Ji's release from imprisonment**.
- The ICH List, created under the **2003 UNESCO Convention**, safeguards living traditions, and India already has several inscribed elements such as **Durga Puja, Garba, Kumbh Mela, Yoga, Ramlila and Vedic chanting**.

## Labyrinth in Solapur



- Archaeologists have discovered a **2,000-year-old circular stone labyrinth** in **Solapur district, Maharashtra**, linked to the **Satavahana period (1st–3rd century CE)** and believed to be the **largest in India**.
- A **labyrinth** is an ancient, unicursal pathway with a single winding route to the centre, used for rituals, meditation or symbolic journeys, and unlike a maze, it is designed to guide rather than confuse.
- Spread over about **50 × 50 feet**, it consists of **15 concentric stone circuits** laid in open grasslands, suggesting ritual or navigational use rather than habitation.
- Similar finds across western Maharashtra and resemblances to **Roman labyrinth motifs on coins** point to links with **Deccan trade routes and Indo-Roman commerce**.

## Haka Dance



- **Haka** is a traditional Māori cultural dance of New Zealand.
- It **symbolises** pride, identity and unity, historically performed by warriors to display strength, intimidate opponents and boost morale, and **today used** in welcomes, rituals, protests and celebrations.
- Rooted in Māori mythology and linked to **Tāne-rore**, it involves vigorous rhythmic movements like stamping, chest-slapping and expressive gestures.
  - ➔ The most famous form is “**Ka Mate**”, composed by chief **Te Rauparaha** around 1820 and popularised globally by the **All Blacks** rugby team.
- **Similar traditional war or identity dances** include the Siva Tau of Samoa, Cibi of Fiji, the Zulu War Dance of South Africa, and the Highland Sword Dance of Scotland.
- **India has many war-related dances**, including Chhau (martial semi-classical from East India), Sarlamkai/Solakia (Mizoram warrior dance), Tapu (Arunachal’s Adi tribe dance of valor), Rangma (Nagaland’s Naga tribe war dance), Vela-Kali (Kerala’s mock combat dance), and Raebenshe (West Bengal’s folk war dance), all featuring warrior themes, mock combat, or expressions of bravery

## Boreendo



- UNESCO has inscribed **Pakistan’s Boreendo (Bhorindo)**, a rare **clay vessel-flute** linked to the **Indus Valley musical tradition**, on the **Intangible Cultural Heritage in Need of Urgent Safeguarding** list.
- Used by the **Thari community of Sindh**, the 5,000-year-old instrument—traced to **Mohenjo-daro**—is a hollow, spherical, kiln-fired clay flute whose pitch is controlled by blowing and tilting.
- Archaeological finds from **Harappa and Mohenjodaro** show similar terracotta and bone flutes, highlighting its continuity from the **Indus Valley Civilisation** to present-day folk traditions.

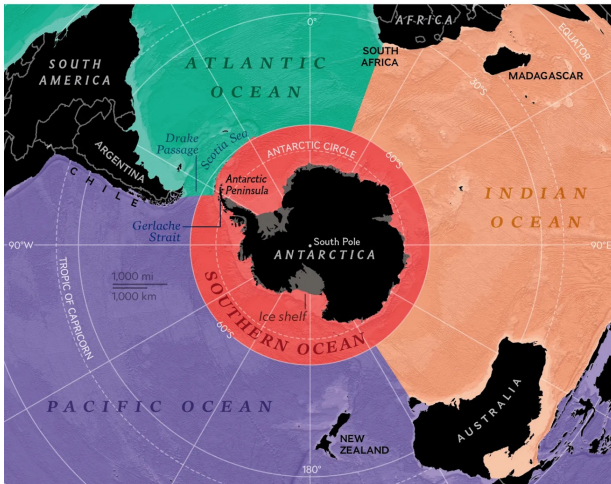
## Zehanpora Village

- Archaeologists have uncovered a **2,000-year-old Buddhist complex at Zehanpora village in Baramulla, Jammu and Kashmir**.
- The finding features **stupas, viharas and organised monastic remains**.
- Dated to the **1st–3rd century CE (Kushan period)**, it is among the **earliest Buddhist establishments in Kashmir** and reflects **Kushan patronage under rulers like Kanishka and Huvishka**.
- The site shows **Gandharan architectural influence** and may be linked to the elusive **Huvishkapura**, an important city of the Kushan Empire, believed to have been founded or developed during the reign of Emperor Huvishka (c. 150–190 CE).

## Southern Ocean Carbon Anomaly

### Limits of the Southern Ocean

National Geographic now recognizes five world oceans. Most of the waters that surround Antarctica out to 60 degrees south latitude, excluding the Drake Passage and Scotia Sea, constitute the newly acknowledged Southern Ocean.



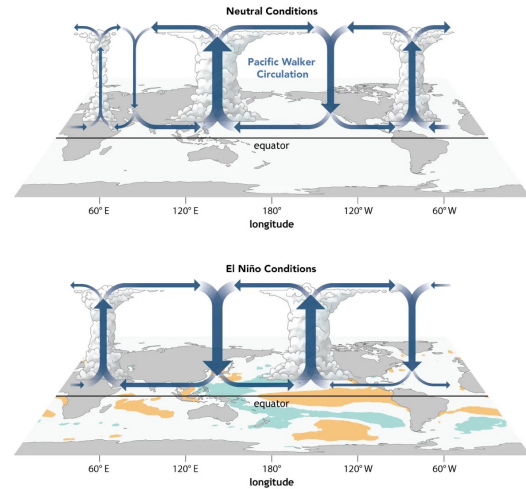
Matthew W. Chwastyk and Greg Ugiansky, NG Staff  
Sources: NASA/JPL; International Hydrographic Organization (IHO)



- New research shows that since the early 2000s, the **Southern Ocean** has absorbed more CO<sub>2</sub> than predicted, a phenomenon called the **Southern Ocean carbon anomaly**.
- **The anomaly** due to stronger winds and upwelling, the ocean has continued to absorb carbon.
- Normally, **stronger winds and upwelling** in this region were expected to release CO<sub>2</sub>, but due to changes like melting Antarctic ice and lighter surface waters, the ocean has continued to **trap carbon below the surface**, creating this anomaly.
- **Factors causing the anomaly:**
  - ➔ **Freshening of surface waters:** Increased rainfall and meltwater from Antarctic glaciers have reduced surface salinity, making surface waters lighter and more buoyant.
  - ➔ **Enhanced stratification:** Fresher, lighter surface layers sit atop warmer, saltier deep waters, limiting vertical mixing and air-sea gas exchange.
  - ➔ **Trapping of carbon-rich waters below surface:** Upwelled circumpolar deep waters remain 100–200 metres below the surface, preventing CO<sub>2</sub> release.

- They also implied that it is **temporary** and **there may be a risk of sudden reversal** of this anomaly, i.e. it would weaken and start releasing CO<sub>2</sub>.

## El Niño



- Climate models and observations indicate a possible **El Niño** phase in El Niño–Southern Oscillation occurring in the Pacific in 2026.
- **ENSO (El Niño–Southern Oscillation)** is a recurring climate pattern involving fluctuations in ocean temperatures and atmospheric pressure across the equatorial Pacific.
- It has two main phases:
  - ➔ **El Niño (warm phase):** Surface waters in the central and eastern Pacific become unusually warm due to weakened trade winds, altering global weather patterns.
  - ➔ **La Niña (cool phase):** Surface waters in the same region are cooler than normal, with stronger trade winds, producing opposite weather effects.
- El Niño occurs when **weakened trade winds shift warm waters eastward**, altering atmospheric circulation, while La Niña is the opposite (cooler waters, stronger winds).
- El Niño **impacts** include global temperature spikes, weaker monsoons and **droughts in India, floods in South America**, and droughts, heatwaves, and wildfires in Australia and Southeast Asia.

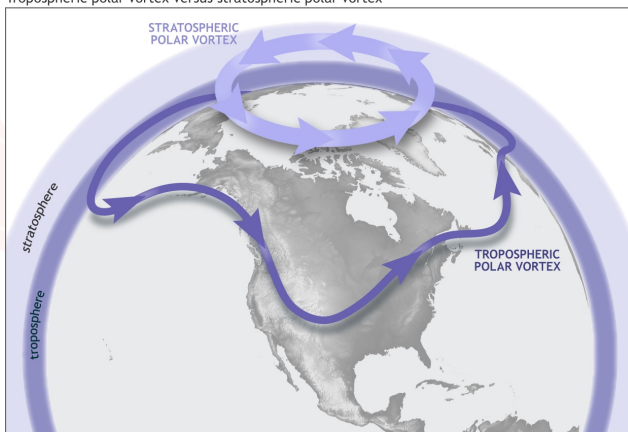
## Sudden Stratospheric Warming (SSW) Event

- Meteorologists have warned that **another Sudden Stratospheric Warming (SSW) event may occur**, potentially **disrupting the polar vortex and sending unusually cold Arctic air into parts of the United States**.
- **SSW** refers to a **rapid rise in stratospheric temperatures** that weakens or distorts the polar vortex (a cold-air mass typically stabilized over the Arctic).
- It begins **with large-scale atmosphere waves (called Rossby waves)** getting pushed higher into the atmosphere.
- These waves can **“break” (like waves in the ocean) on top of the polar vortex and weaken it**. If waves are strong enough, the winds of the polar vortex can weaken so much that they can reverse from being westerly to easterly and this leads to cold air descending and warming rapidly.
- And it can **lead to a displacement or splitting of the polar vortex, so instead of cold air being locked above the polar region it can push further south** into the mid-latitudes.

### Polar Vortex:

- **Polar Vortex** is a large **area of low pressure and cold air** surrounding both of the Earth's poles.
- It extends from the **tropopause (the dividing line between the stratosphere and troposphere) through the stratosphere and into the mesosphere** (above 50 km).
- It always exists near the poles, but weakens in summer and strengthens in winter.

Tropospheric polar vortex versus stratospheric polar vortex



## Virtual Water Export Crisis

- **The World Economic Forum** recently cited that rice, the world's **largest staple foodstuff**, is **water-intensive** and its cultivation accounts for between 34% and 43% of the world's irrigation water.
- The traditional methods of cultivation produce relatively **large amounts of the greenhouse gas methane** (totalling approximately **10-12% of global methane**).
- It is **climate sensitive** as Yields drop >8% per 1°C temperature rise.
- China is the **largest producer**, followed by India, Indonesia, Bangladesh, Viet Nam and Thailand.
- India's large rice exports (≈40% of global trade) effectively export **billions of cubic metres of groundwater** from water-stressed regions embedded in these grains, a phenomenon called **virtual water-export**.
- **Punjab and Haryana** particularly face severe depletion; most blocks are **over-exploited/critical** (Central Ground Water Board, 2024–25), with borewell depths rising from **~30 ft to 80–200 ft**.
- Tech-led solutions like **Alternate Wetting and Drying (AWD)** can reduce rice water use by **20–50%**, cut **greenhouse gas emissions up to 70%**, and improve yields.
- **Climate-resilient rice varieties, AI-based water management, carbon market incentives, and low-emission procurement policies** (e.g., Vietnam's 1-million-hectare low-carbon rice target, Thailand's Rice NAMA) together promote sustainable rice cultivation.

# Environment & Ecology

## IUCN Species Survival Commission (SSC)



- Vivek Menon (founder and CEO of the **Wildlife Trust of India**) became the first Asian chairman of the IUCN Species Survival Commission (SSC).
- SSC is the **largest IUCN scientific network** with over 10,000 volunteers.
- Established in **1949**, the SSC works with governments, NGOs, and researchers to prevent species extinction, support recovery, promote sustainable use of biodiversity, and integrate science with policy and action.
- It also conducts **assessments** classifying species as Critically Endangered, Endangered, Vulnerable, etc..

## Aravalli Hills Controversy



- The Supreme Court approved a **new height-based definition** of the Aravalli Hills, defining them as landforms  $\geq 100$  m above local relief.
- This effectively narrows their legal recognition and this replaces the **Forest Survey of India's (FSI)** 3-degree slope method, which recognised low-height but ecologically continuous hill systems.
- The Aravallis, one of the **world's oldest mountain ranges** (~3.2 billion years), stretch ~650–700 km from **Delhi to Gujarat** and are vital for preventing desertification, recharging groundwater, moderating climate, and supporting biodiversity.
- **Environmentalists** warn the new definition could exclude many low-elevation tracts, especially in Delhi-NCR and Rajasthan, opening them to construction and urbanisation despite mining restrictions, sparking the **"Save Aravalli"** campaign.

## Commission for Air Quality Management (CAQM)

- The **Commission for Air Quality Management (CAQM)** has issued show-cause notices to six thermal power plants within 300 km of Delhi for violating **biomass co-firing norms** to curb NCR air pollution.
- CAQM was established **under the Commission for Air Quality Management in NCR and Adjoining Areas Act in 2021** by replacing the Environment Pollution (Prevention and Control) Authority (EPCA).
- It coordinates air quality management across **Delhi and adjoining states (Punjab, Haryana, Rajasthan, Uttar Pradesh)**.
- CAQM, led by a Chairperson and technical experts, **plans and implements pollution control measures, frames pollutant identification frameworks, and undertakes research and capacity building** in collaboration with technical institutions.

## Hard Corals (Stony Corals)

- A **Global Coral Reef Monitoring Network (GCRMN)** assessment shows **Caribbean hard coral cover has dropped 48% between 1980 and 2024** due to extreme heat and bleaching.

# Science & Technology

- Hard corals, like **elkhorn and staghorn corals**, are stony corals that build reef structures, support one-third of marine biodiversity, and host **zooxanthellae algae** for nutrition.
- They thrive in **warm, clear, shallow waters**, providing fish nurseries, coastal protection, and high biodiversity.
- Major threats include **mass bleaching events** (1998, 2005, 2023–24) and **Stony Coral Tissue Loss Disease (SCTLD)**.
- India has **both hard and soft corals**.

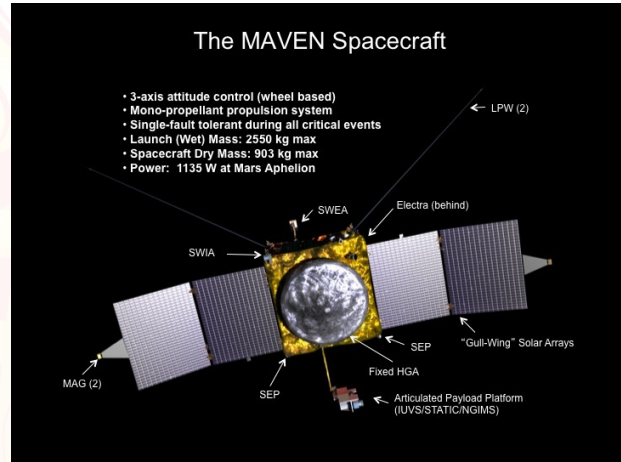
➤ **Hard corals (stony corals):** Found in the **Andaman & Nicobar Islands, Lakshadweep, Gulf of Mannar, and Palk Bay**, these corals build reef structures and support rich marine biodiversity. Examples include **Acropora species**.

➤ **Soft corals:** Found in similar regions, especially in **Andaman & Nicobar**, they are flexible, non-reef-building corals that do not form stony structures.

- **Note: Soft Corals (Non-Reef-Building)** are flexible, plant-like corals, without stony skeletons, and do not form reefs.

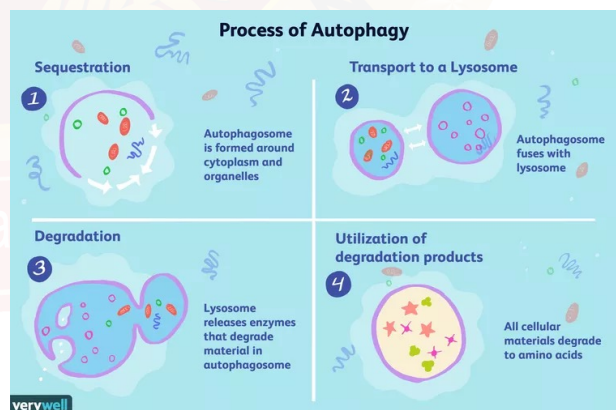


## MAVEN Mars Orbiter



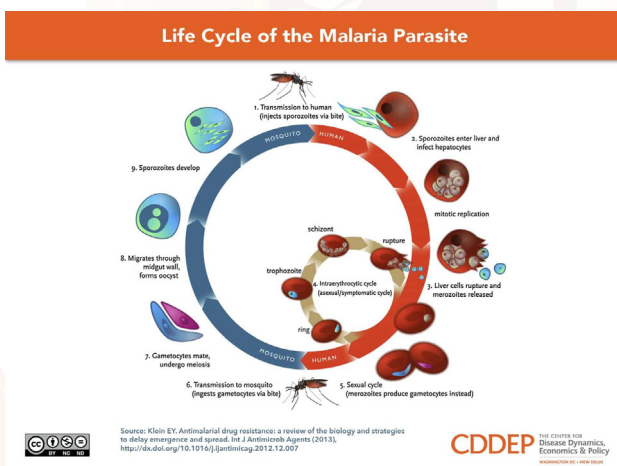
- NASA's **Mars Atmosphere and Volatile Evolution (MAVEN)** spacecraft, launched in 2013 and operational around Mars since 2014, is the **first mission dedicated to studying the planet's upper atmosphere** and its escape into space.
- MAVEN measures the present rate at which atmospheric gases are lost to space to reconstruct how Mars' climate changed over time, showing that **nearly two-thirds of Mars' early atmosphere has escaped**.
- It orbits Mars every **3.5 hours**, dipping as close as **150 km** above the surface to directly sample the upper atmosphere.

## Exocyst complex in Autophagy



- Scientists at the **Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru** have discovered that the **exocyst complex**, a group of eight proteins earlier known for **exocytosis** (transporting vesicles to the cell membrane), also plays a key role in **autophagy**, the cell's self-cleaning process.
- Autophagy** is a basic cellular **housekeeping mechanism** that maintains homeostasis (internal cell stability) by degrading and recycling damaged or excess cell components and destroying pathogens.
- It is mediated by **Autophagy-Related Genes (ATGs)**, which encode proteins that form **autophagosomes** to carry cellular waste to **lysosomes** for digestion.
- Lysosomes** are membrane-bound organelles found in cells that act as the cell's **digestive and recycling centres**
- Autophagy acts as a **double-edged sword**—it initially prevents cancer by maintaining cellular health, but some cancer cells later exploit it for survival.
- The discovery that the **exocyst complex links secretion with autophagy** improves understanding of cell maintenance and may help develop therapies for Alzheimer's, Parkinson's, and cancer.

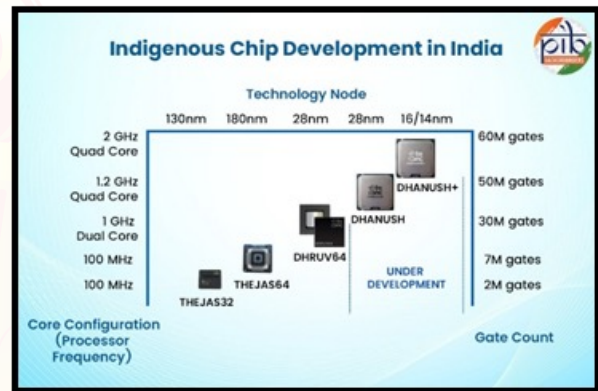
## Artemisinin



- A new study warns that heavy use of **artemisinin** may create **resistance hotspots** in parts of Africa.
- Artemisinin** is an **antimalarial drug** derived from the leaves of the **sweet wormwood plant (Artemisia annua)**.
- It kills the **Plasmodium parasite** during the **blood stage of malaria**, stopping it from multiplying in red blood cells.

- Discovered in the 1970s by **Tu Youyou**, it is fast-acting but short-lived in the body, so it is usually combined with other drugs in **artemisinin-based combination therapies (ACTs)** for effective treatment of **Plasmodium falciparum malaria**.

## DHRUV64



- The **Ministry of Electronics and IT (MeitY)** has launched **DHRUV64**, a fully indigenous **64-bit, dual-core (1.0 GHz) microprocessor** developed by **C-DAC** under the **Microprocessor Development Programme (MDP)**.
- It is the **third chip under the Digital India RISC-V (DIR-V) programme**, following **THEJAS32** and **THEJAS64**.
- Featuring **superscalar execution, out-of-order processing**, and advanced **FCBGA packaging**, **DHRUV64** is designed for **5G, automotive electronics, industrial automation, IoT, and consumer devices**.
- The **DIR-V programme** aims to develop a **homegrown semiconductor ecosystem** using **open-source RISC-V architecture**, reducing import dependence and enhancing India's **strategic electronics capabilities**.

**C-DAC** (Centre for Development of Advanced Computing) is India's premier R&D organization in IT&E (Information Technologies & Electronics) under the Ministry of Electronics & IT. It focuses on **national tech capabilities**, advanced computing (like supercomputing/GPUs), AI, Big Data, e-Governance, and offers **Post-Graduate courses** via exams like C-CAT for IT professionals

## Dieback Disease

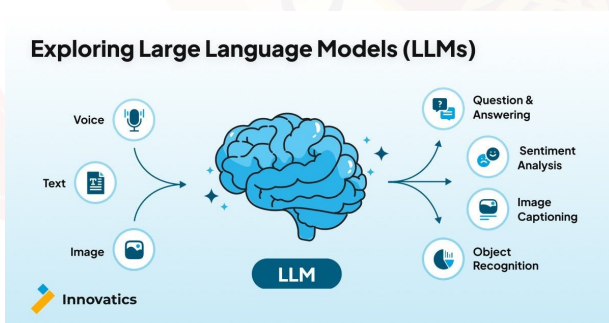


A Healthy

B Die-back affected

- The **Forest College & Research Institute (FCRI), Mulugu, Telangana** is investigating widespread **dieback disease** affecting neem trees.
- Caused mainly by the fungus **Phomopsis azadirachtae**, the disease leads to **leaf browning, twig wilting, stem canker, crown thinning, fruit rot, and eventual tree death**, often mistaken for drought damage.
- Symptoms appear with the **rainy season** and worsen into early winter, potentially causing **100% loss in fruit production**, affecting commercial and medicinal use.
- **Neem (Azadirachta indica)**, native to India, is valued for its **antibacterial, antifungal, and insecticidal properties**, as well as its wood and non-wood products.

## Large Language Models (LLMs)



- A recent government working paper suggested that **AI large language models (LLMs)** like **ChatGPT** should, by default, have access to freely available online content.

- LLMs are **artificial intelligence systems** that understand and generate human language by processing vast amounts of text using **deep learning**, allowing them to recognize patterns, interpret content, and perform tasks like answering questions, summarizing text, translating languages, and writing.
- Examples include **ChatGPT (OpenAI), Bard (Google), Llama (Meta), Bing Chat (Microsoft), and GitHub Copilot** (for coding).
- LLMs are applied in **sentiment analysis, customer service, chatbots, online search, and DNA research**, but face challenges such as **high computational needs, ethical concerns, and context limitations**.

**Note:** Deep learning is a type of **artificial intelligence** where computers use **layers of virtual “neurons”** to learn patterns from large amounts of data. It can **recognize images, understand speech, or process language** without being explicitly programmed.

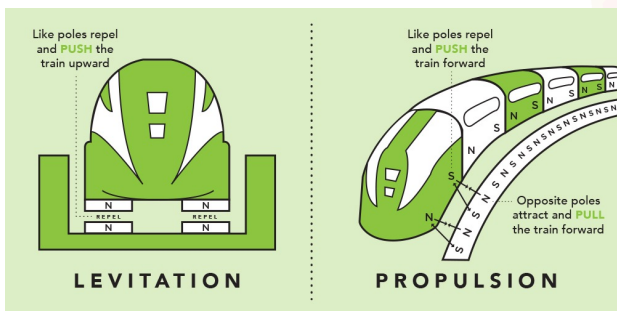
## Alaknanda Galaxy



- Researchers at the **National Centre for Radio Astrophysics (NCRA) – Tata Institute of Fundamental Research (TIFR), Pune**, have discovered a spiral galaxy named **Alaknanda** using **NASA’s James Webb Space Telescope (JWST)**.
- Located about **12 billion light-years** away, it formed when the universe was only **~1.5 billion years old**, or around 10% of its current age.
- Alaknanda is a textbook spiral galaxy, featuring **two well-defined arms around a bright central bulge** and spanning roughly **30,000 light-years** in diameter.
- It exhibits intense stellar activity, forming stars at a rate of **~60 solar masses per year**.

- The discovery is significant as it provides insights into **early galaxy formation and the emergence of spiral structures shortly after the Big Bang**, while also highlighting **India's contribution to global astronomy** through NCRA-TIFR and JWST collaborations.
- Spiral galaxies like Alaknanda and the **Milky Way** typically consist of a central bulge with older stars (and often a supermassive black hole) surrounded by a rotating disk with spiral arms containing gas, dust, and young stars.

## Magnetic Levitation (maglev) Technology



- Chinese scientists achieved a breakthrough in **maglev technology** by propelling a one-tonne vehicle to 700 km/h in just two seconds.
- Maglev trains use **electromagnets** to levitate, guide, and propel trains above tracks, minimizing friction
- The system typically consists of three main **components**:
  - ➔ **Levitation:** Magnets lift the train above the track, ensuring there is no physical contact. This minimizes wear and tear while providing a smooth ride.
  - ➔ **Guidance:** Electromagnets stabilize the train laterally, keeping it centered on the track.
  - ➔ **Propulsion:** Linear motors generate magnetic fields that push and pull the train along the track. This replaces the need for traditional engines or fuel.
- **The tracks, known as guideways,** are embedded with powerful electromagnets, while the trains themselves contain superconducting magnets or electromagnets.
- Benefits of Magnetic Levitation Technology includes **Reduced Friction** (lower maintenance costs and higher energy efficiency), Eco-Friendly (can be powered by renewable energy sources), Speed, Efficiency and comfort.

## Maitri Research Station

- India plans to **replace its old Maitri Research Station in Antarctica** with the larger, greener, and renewable-energy-powered Maitri-II by 2032.
- Operated by the Goa-based **National Centre for Polar and Ocean Research (NCPOR)**, the new station will have automated instruments to relay data to India.

## India's Other Research Stations in Antarctica and Arctic:

- **Dakshin Gangotri (1983):** Dakshin Gangotri, established under the Indian Antarctic Program in 1983, was India's first scientific research base in Antarctica, but it was submerged in ice and decommissioned in 1990.
- **Maitri (1989):** Maitri is India's second permanent research station in Antarctica, established in 1989 which is located in the rocky mountainous Schirmacher Oasis, and India also created a freshwater lake nearby, called Lake Priyadarshini.
- **Bharti (2012):** Located about 3,000 km east of Maitri, the 'Bharati' research station lies between Thala Fjord and Quilty Bay.
- **Himadri (2008):** Located in Ny-Ålesund, Svalbard, Norway, serving as a base for scientists studying climate, glaciology, and atmospheric processes in the Arctic region.



### INSV Kaundinya



- **INSV Kaundinya**, India Navy's first stitched sailing vessel built using **ancient shipbuilding techniques**, has embarked on her **maiden overseas voyage to Oman**.
- Inspired by a **5th-century CE ship depicted in the Ajanta Cave paintings**, the vessel was constructed by Kerala artisans using **coir rope, coconut fibre, and natural resin**, under master shipwright **Babu Sankaran**.
- The project, a collaboration between the **Ministry of Culture, Indian Navy, and Hodi Innovations**, aims to revive India's **indigenous maritime knowledge**.
- Named after the ancient Indian mariner **Kaundinya**, the ship symbolises India's historic maritime trade, exploration, and cultural links across the Indian Ocean.

**Kaundinya** was an **ancient Indian mariner and prince** who, according to Southeast Asian traditions, **sailed across the Indian Ocean to Southeast Asia around the early centuries CE**. He is best known from **Cambodian legends and inscriptions**, where **Kaundinya (Kaundinya I)** is said to have founded the **Funan kingdom** after marrying **Soma (Nagi Soma)**, a local Nāga princess.



- **The Indian Coast Guard** has commissioned a new vessel, Samudra Pratap, designed to **fight marine pollution and safeguard the seas**.
- The vessel was built by Goa Shipyard Limited (GSL) & it is the **first indigenously built Pollution Control Vessel (PCV)** in the country's history.
- Equipped with advanced systems, Samudra Pratap **will tackle oil spills, chemical leaks and other maritime hazards**.
- It also supports **search-and-rescue operations** and strengthens coastal security across India's vast waters.
- **More than 60% of its components are sourced from India**, reflecting the nation's focus on self-reliance in defence and maritime technology.

### Param Vir Chakra (PVC)

- Portraits of all **21 Param Vir Chakra (PVC) awardees** are now displayed at **Rashtrapati Bhavan**, replacing those of British Aide-de-Camps.
- Instituted on **26 January 1950**, the **PVC is India's highest military gallantry award**, given for exceptional valour or self-sacrifice in the presence of the enemy, including **posthumous awards**.
- The bronze medal features **Indra's Vajra**, the **State Emblem**, a **purple ribbon**, and inscriptions in **Hindi and English**.



- The award is open to **personnel of all ranks** from the **Army, Navy, Air Force, Territorial Army, Reserve Forces, and other lawfully constituted armed forces.**

## INS Aridaman

- India will commission the **third indigenous nuclear-powered submarine, INS Aridaman**, soon, the Navy Chief said recently.
- New Delhi's **nuclear-powered ballistic missile submarine (SSBN) programme** is a closely guarded project.
- **INS Arihant was the first vessel under the SSBN project**, followed by INS Arighat.
- INS Arihant is India's first home-made nuclear submarine.
- SSBN stands for ship submersible ballistic nuclear, or nuclear-powered ballistic missile submarine.
- India is among a select group of countries possessing nuclear-powered submarines; the others are the **US, Russia, the UK, France and China.**

## Exercise in News

Exercise	Countries Involved	Force	Description
<b>Desert Cyclone II</b>	India-UAE	Army	The second edition is held in Abu Dhabi & it will focus on enhancing interoperability and operational synergy in urban operations and built-up areas.
<b>Ekatha</b>	India-Maldives	Navy	Established in 2017, the exercise is an annual bilateral maritime exercise. It is the 8th edition.
<b>Harimau Shakti</b>	India-Malaysia	Army	The Fifth edition of Exercise Harimau was held in Mahajan Field Firing Range, Rajasthan.
<b>Garuda Shakti</b>	India-Indonesia	Special Forces	The 10th edition was held at the Special Forces Training School, Bakloh, Himachal Pradesh.
<b>Ekuverin</b>	India-Maldives	Joint Military	Indian Army and Maldives National Defence Force (MNDF) held at Thiruvananthapuram, Kerala

**Corrigendum:** In the November edition of Fortune Prelims Precise it was incorrectly mentioned that Exercise Garuda 2025 was between India and Indonesia. **Exercise Garuda 2025 (Garuda 25)** was a major air exercise between the **Indian Air Force (IAF)** and the **French Air and Space Force (FASF)**, concluding in France, while Garuda Shakti 2025 (mentioned in the list) was a joint Special Forces drill between the Indian Army (Parachute Regiment) and Indonesian Special Forces (Kopassus). The inadvertent mistake is regretted.

# Miscellaneous

## Asia Power Index



- India has secured **third ranking in the Asia Power Index 2025**, while the U.S. and China occupy the first and second spots.
- The Index is published annually by the **Australia-based think tank**, Lowy Institute and it assesses the ability of nations, particularly of those in the Asian continent, to influence their external environment.
- It evaluates the **power of 27 countries and territories across Asia**, based on 131 indicators across eight thematic measures, including Military Capability and Defence Networks, Economic Capability and Relationships, Diplomatic and Cultural Influence and Resilience and Future Resources.
- India kept its position at No.3 in 2025, surpassing Japan last year, with a comprehensive power score of **over 40 points, indicating it is a “major power”**.

## Project Mausam

- The **Archaeological Survey of India (ASI)** held a national workshop on **Project Mausam**.
- Launched in **2014** by the **Ministry of Culture**, Project Mausam is a **cultural-diplomacy and maritime heritage initiative** implemented by ASI with support from Indira Gandhi National Centre for the Arts (**IGNCA**) and **National Museum**.

- It documents the **diverse cultural, commercial, and religious interactions** across the Indian Ocean, covering **39 countries**, and aims to nominate key sites for **UNESCO World Heritage status**.
- The project also promotes **research on maritime routes** through international seminars and a **multidisciplinary approach**

## Pradhan Mantri Gram Sadak Yojana (PMGSY)

- The Centrally sponsored **PMGSY** marked **25 years in December 2025**, a milestone in rural infrastructure.
- Launched in **2000** by the **Ministry of Rural Development**, it provides **all-weather road connectivity** to previously unconnected villages, linking them to **markets, schools, and healthcare**.
- Currently in **Phase 4 (2024–29)**, PMGSY has sanctioned about **8.25 lakh roads**, with **95% completed**.
- It has **technology-driven monitoring** by using OMMAS (Online Management, Monitoring and Accounting System), e-MARG (electronic Maintenance of Rural Roads under PMGSY), GPS tracking, and a three-tier quality system to ensure accountability and durability

## Reservation for Agniveers in CAPFs

- The Union Home Ministry has increased reservation for ex-Agniveers in Group-C posts of Central Armed Police Forces (CAPFs) from 10% to 50%, exempting them from Physical Standard and Efficiency Tests, though they must still clear the written exam.
- The **Agnipath Scheme**, launched on 14 June 2022 and implemented from September 2022, is a short-term recruitment program for the Indian Army, Navy, and Air Force.
- Under this scheme, young recruits called **Agniveers** serve a four-year “tour of duty,” and will be recruited as **personnel below officer (PBOR) rank**.
- About 25% of Agniveers are retained** in regular service based on merit, while the rest exit with a service certificate, skills training, and a **Seva Nidhi** corpus of ₹11–12 lakh (tax-free).

- **Eligibility** is 17.5–21 years (relaxed to 23 for the 2022 batch), open to all genders and classes.
- Agniveers **receive** ₹30,000–40,000 per month plus **allowances**, life insurance, and compensation for death or disability, but no pension for those released.

**CAPFs in India** are **Central Armed Police Forces under the Ministry of Home Affairs** tasked with maintaining **internal security, border guarding, law and order, and counter-insurgency**. The seven CAPFs are: **BSF, CRPF, CISF, ITBP, SSB, Assam Rifles, and NSG**, each with specialized roles in **border security, critical infrastructure protection, internal security, and counter-terrorism**.

### Global Network of Learning Cities (GNLC)

- UNESCO has added **Riyadh, AlUla, and Riyadh Al-Khabra** to its **Global Network of Learning Cities (GNLC)** in 2025.
- Established in **2013**, the GNLC now includes **425 cities from 91 countries**, promoting **lifelong learning, inclusive education, and learning ecosystems** across families, communities, and workplaces.
- It encourages cities to develop **inclusive, accessible, and sustainable learning ecosystems** across **schools, workplaces, communities, and families**
- It supports **SDG 4 (Quality Education)** and **SDG 11 (Sustainable Cities)**.
- India's three GNLC cities, added in 2022, are **Warangal, Thrissur, and Nilambur**.

### PM-WANI Scheme

- Parliament was told that as of **November 2025**, over **3.9 lakh PM-WANI Wi-Fi hotspots** have been deployed across India.
- The **Prime Minister's Wi-Fi Access Network Interface (PM-WANI)**, launched by the **Department of Telecommunications (DoT)** in **2020**, is a flagship initiative to **expand public Wi-Fi access across India**, with a focus on **rural and underserved areas**.

#### PM-WANI ecosystem:

- ➔ **Public Data Office (PDO):** A small shop or business sets up a Wi-Fi hotspot using a regular broadband connection from a licensed ISP. No separate license is required.

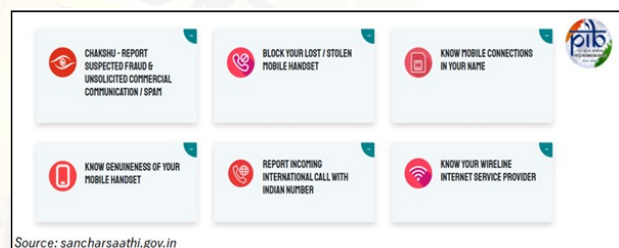
- ➔ **Public Data Office Aggregator (PDOA):** The PDO registers with a PDOA, which handles authentication, accounting, and management for multiple PDOs.

- ➔ **App Providers:** Users access the Wi-Fi through mobile apps or portals provided by App Providers, which connect them to the PDO network.

- ➔ **Central Registry:** All PDOs, PDOAs, and App Providers are recorded in the Central Registry (maintained by C-DoT) for transparency and regulation.

- PM-WANI Wi-Fi offers highly **affordable, low-cost internet** often with a small free introductory period (like the first 30 mins), followed by **paid plans** that are significantly cheaper than mobile data

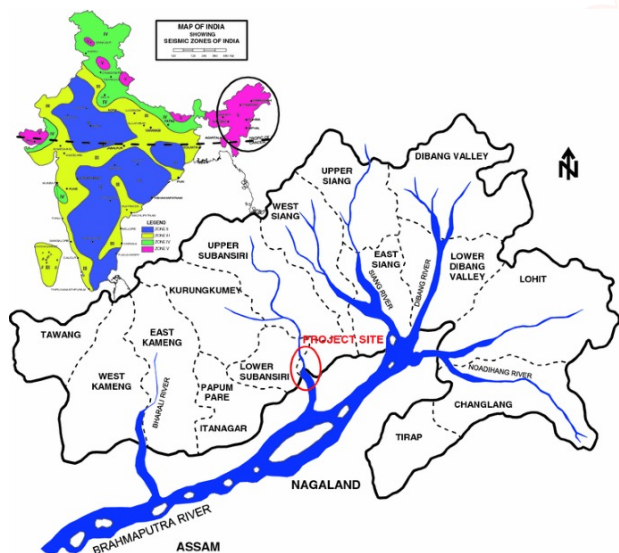
### Sanchar Saathi App



- The **Department of Telecommunications (DoT)** has mandated (later revoked) that all smartphones sold from March 2026 must come with the **Sanchar Saathi** app pre-installed.
- Launched as a **web portal in 2023** and as a **mobile app in January 2025**, it empowers users to **track, block, and trace lost or stolen phones via IMEI**, verify mobile connections in their name, and report suspicious or forged KYC entries.
- It includes features like **Chakshu** that help report fraud calls, SMS, WhatsApp messages, and digital scams, while the app also detects counterfeit devices and international spoofed calls.
- Voluntary and user-consent based, it complies with the **Digital Personal Data Protection Act 2023**, ensuring privacy, transparency, and individual control.

Product	Place	Description	Image
<b>Ambasamudram Choppu Saman</b>	Tamil Nadu	Handcrafted wooden miniature kitchen toys traditionally used in <b>Navaratri Golu displays</b> .	
<b>Thooyamalli Rice Variety</b>	Tamil Nadu	A fragrant, <b>low-glycemic</b> traditional rice rich in minerals and suitable for diabetic diets.	
<b>Namakkal Makkal Pathirangal</b>	Tamil Nadu	Traditional <b>soapstone cookware (kalchatti)</b> used in South Indian kitchens since ancient times.	 3. Namakkal makkal pathirangal (soapstone cookware)
<b>Kavindapadi Nattu Sakkarai</b>	Erode district, Tamil Nadu	A distinctive jaggery powder made by slowly <b>evaporating sugarcane juice</b> sourced from Lower Bhavani canal-fed fields.	
<b>Woraiyur Cotton Sari</b>	Tiruchirappalli, Tamil Nadu	A traditional cotton sari woven on <b>korvai looms</b> (traditional South Indian handloom technique for weaving Kanchipuram silk sarees) to create a seamless border and body.	
<b>Darjeeling Mandarin Orange</b>	West Bengal	A fragrant and flavourful orange variety, locally called <b>suntala</b> , a major cash crop of the region.	
<b>Ponduru Khadi</b>	Andhra Pradesh	A khadi from woven using <b>pesticide-free short-staple Punasa</b> and hill cotton, uniquely ginned with fish jawbones and admired by Mahatma Gandhi.	

### Subansiri Lower Hydroelectric Project



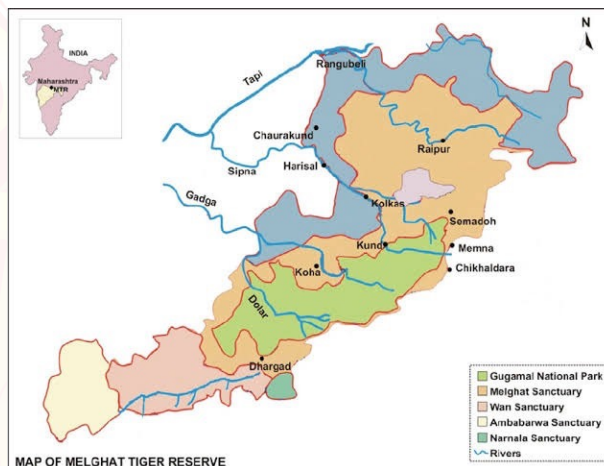
- India launched Unit-2 (250 MW) of the Subansiri Lower Hydroelectric Project (SLHEP), a 2,000 MW **run-of-the-river project** on the Subansiri River at the **Assam-Arunachal Pradesh** border, implemented by NHPCL Limited.
- Once fully commissioned, it **will be India's largest hydropower project**, supplying power to 16 states, providing free power to Arunachal Pradesh and Assam, and allocating 1,000 MW to the North-East.
- The project features a **116-metre concrete gravity dam (largest in NE India)**, flood management via reservoir storage of 1,365 million cubic metres, India's **heaviest hydro generator rotors**, largest stators, inlet valves, and the first use of the Rotec Tower Belt system.
- While the project was **officially launched in 2003**, delays occurred due to engineering issues, landslides and protests.

### Melghat Tiger Reserve

- The **Bombay Natural History Society (BNHS)** and **Maharashtra Forest Department** recently tagged **15 long-billed vultures** at **Melghat Tiger Reserve** in Amaravati, Maharashtra.
- Established as a **wildlife sanctuary in 1967** and the **first tiger reserve in Maharashtra (1974)**, Melghat lies in the **Gavilgarh Hills** of the Satpura range.

- It is a catchment for **five Tapti tributaries** and home to tribal communities like the **Korkus and Gonds**.

- The reserve features **dry deciduous forests** with teak, bamboo, and mahua, and supports fauna including **tigers, leopards, gaur, sloth bears, sambar, deer, wild boar**, and diverse birds and reptiles.



### Majuli Island



- In an effort to revive the **nearly defunct Royal Bird Sanctuary** at Majuli island, the **Charaichung Festival** has been organised in the island district for the second time.
- Majuli, the **world's largest river island in Assam** (421 sq km), lies between the Brahmaputra and Subansiri rivers and is home to the Mishing, Deori, and Sonowal Kachari tribes.
- Primarily dependent on **rice cultivation**, it grows unique **varieties** like Komal Saul and Bao Dhan.

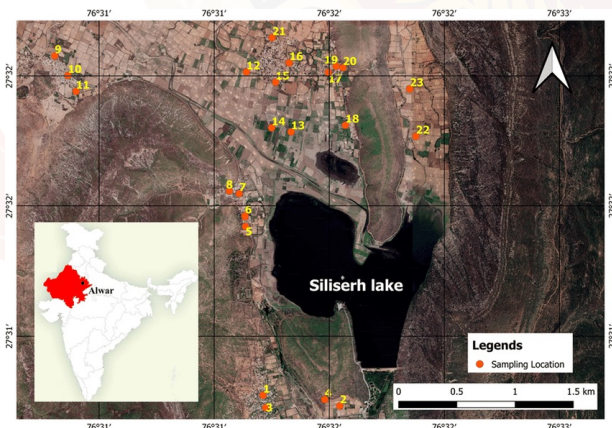
- Majuli is also the hub of Assamese **neo-Vaishnavite** culture, initiated in the 16th century by **Srimanta Sankardeva** and **Madhavdeva**, with **Satras** (monastic institutions) preserving Sattriya dance, literature, bhaona (theatre), mask-making, and boat-making.

## Tigris River



- The **Tigris River**, a **1,900 km-long river in southwest Asia**, is facing a severe crisis due to **shrinking flows, heavy pollution, and upstream water controls**, raising fears that parts of it may dry up.
- Originating in **eastern Turkey**, it flows through **Syria and Iraq**, joins the **Euphrates in southeastern Iraq** to form the **Shatt al-Arab**, and finally empties into the **Persian Gulf**.

## India Ramsar List update



- India has added **Siliserh Lake (Rajasthan)** and **Kopra Jalashay (Chhattisgarh)** to the **Ramsar list**, raising the total to **96 wetlands**.

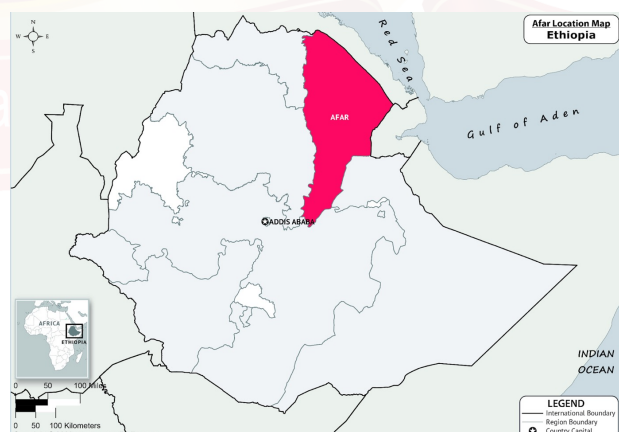
- **Siliserh Lake**, a **man-made wetland in Alwar district**, lies in the **buffer zone of Sariska Tiger Reserve** and was built in **1845 by Maharaja Vinay Singh** by damming a Ruparel River tributary to supply **drinking water to Alwar**.
- It supports **water supply, tourism, and recreation**, but faces pressures from **agriculture and urban expansion**, with restoration efforts underway.
- **Kopra Jalashay, Chhattisgarh** is a reservoir-type wetland in the **upper Mahanadi catchment** near **Bilaspur**, built mainly for irrigation.
- It supports over **60 migratory bird species** but faces threats from siltation, invasive species, and intensive agriculture.

## Guinea-Bissau



- **Guinea-Bissau**, a small West African country with capital **Bissau**, recently came under **military rule**.
- It borders **Senegal and Guinea**, has an **Atlantic coastline**, a **tropical climate**, major rivers like **Geba, Corubal, and Cacheu**, and includes the **Bijagós archipelago**.

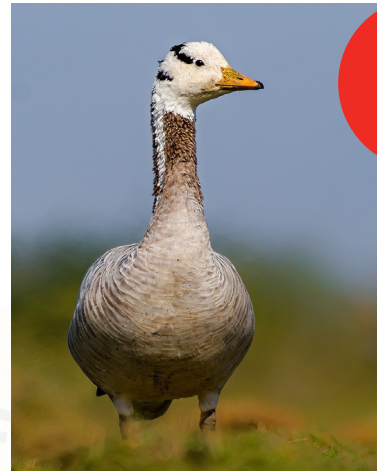
## Afar Region



- Scientists predict that Africa's Afar region could become Earth's next ocean basin.
- It is the **northeastern part of Ethiopia, where the Red Sea meets the Gulf of Aden.**
- It is **also known as the Danakil depression**, forms the northern part of the region and is largely desert scrubland with shallow salty lakes and long chains of volcanoes and the **Awash River valley forms the southern part of the area.**
- It is **situated at a unique triple junction where the Red Sea, Gulf of Aden, and East African Rift converge** and the region's landscape is marked by deep rift valleys, volcanic plateaus, and extensive fissures, reflecting the dynamic forces reshaping the Earth's crust.
- It offers scientists a **rare opportunity to observe the processes of continental break-up and ocean genesis in action.**

## Species in News

### Bar-headed Goose



LEAST CONCERN LC

- A **bar-headed goose (Anser indicus)** in eastern India was tracked using a GSM-GPS transmitter, revealing its migration route and flight patterns, showing they soar 5,000–9,000 m over the Himalayas.
- **Bar-headed geese (Anser indicus)** are **native to Central Asia**. They breed in countries like **Mongolia, China, Kazakhstan, and parts of Russia**.
- During winter, they **migrate south to India, Nepal, Bangladesh, and Myanmar**.
- Males and females look similar and form **monogamous pairs**.
- They feed on **grasses, aquatic plants, tubers, grains, and sometimes insects or small fish**.
- Their **haemoglobin has high oxygen affinity**, helping them survive in **low-oxygen conditions**.

### Anopheles stephensi





**FORTUNE IAS ACADEMY**

*New*  
**PRELIMS CUM MAINS BATCH**

**STARTS ON MARCH 04, 2026**



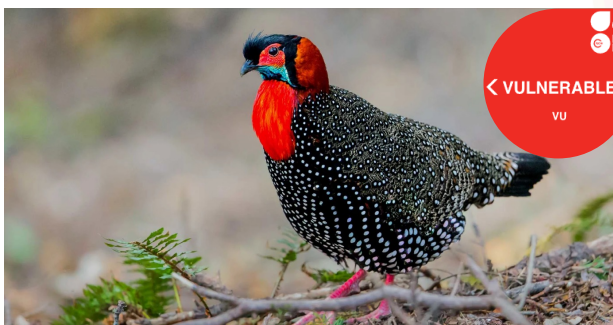
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- India's **malaria elimination** goal for 2030 faces a threat from the invasive **urban mosquito Anopheles stephensi**, which spreads **Plasmodium falciparum** and **P. vivax**.
- Thriving in cities, it **breeds in artificial containers** like tanks, construction sites, and tires, **tolerates high salinity and extreme temperatures**, and persists year-round.
- **Native** to South Asia and the Arabian Peninsula, it has now spread to parts of Africa, prompting WHO to launch initiatives against it.

- Its sighting underscores the **island's rich biodiversity, high endemism (up to 24% in some groups), and ecological sensitivity**.
- **IUCN Status:** Not yet officially assessed



## Western Tragopan



- The **captive-breeding programme** at **Sarahan Pheasantry, Himachal Pradesh**, has successfully stabilised the **Western Tragopan (Tragopan melanocephalus)**, the state bird and a **vulnerable, endemic pheasant** of the north-western Himalayas.
- Once found across **J&K, Himachal Pradesh, and Uttarakhand**, it now survives in **fragmented high-altitude forests (2,400–3,600 m)** like the Great Himalayan National Park and Kazinag-Limber forests.
- Males are **colourful with crimson breast and facial wattles**, females are camouflaged, and breeding occurs in **May–June**.
- Ground-dwelling and shy, they feed on **plants and insects** and act as **indicators of forest health**.

## Great Nicobar Crake

- A **Great Nicobar Crake**, possibly a **new Rallina species**, has been photographed on **Great Nicobar Island**, marking only the **third record in over a decade**.
- This medium-sized, elusive water crake inhabits **dense rainforest undergrowth near wetlands**, with **rufescent plumage** and a **stout pale green bill with reddish tip**.

## African Penguins



- A study found that over 60,000 **African penguins (Spheniscus demersus)** starved between 2004–2011 after sardine stocks collapsed.
- Also called the **jackass penguin** for its donkey-like call, it **lives along the rocky coasts** of South Africa and Namibia in large colonies.
- **Excellent swimmers** (up to 12 mph), they breed in burrows dug into guano to avoid heat.
- They have a black stripe, unique chest spots, and pink glands above their eyes that intensify with heat.
- Their **diet** includes sardines, anchovies, small crustaceans, and squid.
- **Threats** include food scarcity, climate change, habitat loss, oil spills, predators, and human disturbance..

## Industrial Hemp



- **Himachal Pradesh** has legalised regulated **industrial hemp** cultivation under the 'Green to Gold' initiative to promote **bio-economy-led growth**.
- Industrial hemp is a **non-intoxicating Cannabis sativa** variety with **THC <0.3%**, unlike marijuana where **THC is the psychoactive component**.
- Native to **Central and South Asia**, it is now legally cultivated in parts of **Europe, North America and Asia** under regulated THC limits.
- Due to being **lightweight, rigid, resistant and sound-dampening**, it has applications in **construction, paper & packaging, pharmaceuticals & wellness, and cosmetics & personal care**.

## Opium Poppy



- A recent United Nations Office on Drugs and Crime (**UNODC**) **report** notes a **17% rise in opium poppy cultivation in Myanmar**.
- It is largely driven by conflict, economic stress, and higher opium prices.
- The **opium poppy (Papaver somniferum)** is an annual plant that yields narcotics like **morphine, codeine, and heroin**, while its **non-narcotic seeds** are widely used in food products.
- In India, **legal cultivation is strictly regulated** under NDPS Act, 1985; permitted only in **notified tracts of Madhya Pradesh, Rajasthan, and Uttar Pradesh** by licensed farmers (Central Bureau of Narcotics issues licenses).
- India is the **only country in the world that legally produces and exports opium gum** for medical and scientific purposes under the terms of the **1961 Single Convention on Narcotic Drugs**.



## Online WORKING PROFESSIONALS BATCH

STARTS ON **JANUARY 15<sup>TH</sup>, 2026**



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## Keywords

1. **Pax Silica Initiative:** It is a **U.S.-led strategic effort** to build a secure, resilient, and innovation-driven **global supply chain** for silicon, semiconductors, and AI technology, reducing reliance on potential adversaries. The **countries included** are the United States, Japan, South Korea, Singapore, the Netherlands, the United Kingdom, Israel, the United Arab Emirates and Australia.
2. **World Summit on Disaster Management:** It was a global conference held in Dehradun, Uttarakhand (India) jointly organized by the **Government of Uttarakhand**, the Uttarakhand Council for Science & Technology (UCOST), and the Himalayan Academy of Science & Technology (HAST). It became an international platform to discuss strategies for disaster risk reduction focusing on **five core thematic areas: Earth, Water, Air, Fire, and Space**
3. **Kessler Syndrome:** it is a scenario where **high object density in Low Earth Orbit (LEO)** triggers **collisions** that create a cascading chain reaction of space debris, making Earth's orbit increasingly hazardous. Proposed by **NASA scientist Donald Kessler** in 1978, it warns that fast-moving debris can severely damage satellites, GPS, and space missions.
4. **Dark Stores:** They are **retail outlets or warehouses** that cater exclusively to online orders and are not open to walk-in customers. They are **strategically located to enable fast delivery**, often within urban areas, allowing e-commerce and grocery companies to fulfill orders quickly.
5. **Ghost Pairing:** It is a social engineering attack where **fraudsters trick victims into scanning a QR code or sharing a numeric code** to secretly link the victim's messaging account, such as WhatsApp, to the attacker's device. Once paired, the attacker **gains silent, ongoing access** to the victim's chats, media, and contacts **as an invisible "ghost" device**, without needing passwords, OTPs, or SIM swaps..
6. **Chillai-Kalan:** It is the harshest **40-day winter period in Kashmir**, lasting from December 21 to January 29, marked by heavy snowfall and freezing temperatures. Chillai-Kalan is followed by two shorter cold spells: **Chillai-Khurd** ("forty small days") lasting from January 30 to February 18, and **Chillai-Bachha** ("forty baby days") from February 19 to February 28.
7. **Q-day:** It is the **future day** when a powerful **quantum computer can break today's common encryption methods** (like RSA) using advanced algorithms. This would suddenly make much of the world's stored digital data—like bank details and secret messages—**vulnerable to decryption**, even if it was encrypted years earlier. **Google's new Quantum Echoes experiment** using the 65-qubit Willow processor has sparked global debate on whether it accelerates the arrival of Q-day
8. **Agentic AI:** It refers to **advanced artificial intelligence systems that operate autonomously**, using **reasoning, planning, and tool integration** to pursue complex goals, make decisions, and execute multi-step tasks with minimal human oversight. **Unlike generative AI**, which primarily creates content like text or images in response to prompts, agentic AI proactively acts in **dynamic environments, iterating and adapting** to achieve objectives independently.
9. **Mephedrone:** It is a synthetic **stimulant drug** (also called **meow meow** or **M-CAT**) chemically related to cathinone, producing effects similar to **amphetamines and MDMA**. It is **illegal in India** under the NDPS Act and is associated with effects like euphoria, stimulation, empathy, and increased energy while also causing addiction and other health problem
10. **Green Tug Transition Programme (GTTP):** A **green tug** is a small, powerful boat (tugboat) that assists larger ships in ports or harbors while using environmentally friendly technology like **electric or hybrid engines**, cleaner fuels, or energy-efficient designs to reduce pollution and carbon emissions. The GTTP, launched by the **Ministry of Ports, Shipping and Waterways (MoPSW)**, aims to induct **50 green tugs by 2030**.



# കേരളം പറയുന്നു IAS നേടാൻ ഭാഗ്യമല്ല FORTUNE ആണ് വേണ്ടത്



**NANDANA G P**  
AIR 47  
PCM



**SONNET JOSE**  
AIR 54  
PCM



**REENU ANNA MATHEW**  
AIR 81  
Sociology Test Series



**DEVIKA PRIYADERSINI**  
AIR 95  
IMP



**KRISHNA C**  
AIR 139  
MTS, IMP



**AMAL P V**  
AIR 158  
PSIR, PTS, MTS, IMP



**ALEX ABRAHAM P J**  
AIR 165  
MTS, IMP



**RAJATH R**  
AIR 169  
PCM Working Professional,  
Sociology



**GOPIKA B**  
AIR 185  
MTS, IMP



**SOWMYA KRISHNAN**  
AIR 196  
PCM, Malayalam  
Optional



**VINEETH LOHIDAKSHAN**  
AIR 211  
MTS, PTS PRO, IMP



**HEMANTH SANKAR P**  
AIR 223  
PCM



**AKSHAY DILEEP**  
AIR 246  
MTS, PTS PRO,  
Sociology



**NINIYA THOMAS**  
AIR 254  
Open Mock MTS



**LAKSHMIPRIYA P**  
AIR 297  
MTS, IMP



**LAKSHMI MENON V**  
AIR 310  
MTS, Sociology, IMP



**MANJIMA P**  
AIR 321  
PCM, Sociology



**ADITYA NARAYAN H**  
AIR 357  
PTS, MTS, Sociology,  
IMP



**SWATHY S**  
AIR 377  
PCM, Malayalam  
Optional



**MICHAEL JOM**  
AIR 415  
Sociology, IMP



**NADIYA ABDUL RASHEED**  
AIR 429  
PTS, MTS



**NAJMA A SALAM**  
AIR 442  
MTS, Malayalam Optional,  
IMP



**ADARSH C S**  
AIR 457  
IMP



**ANAND PYARELAL**  
AIR 484  
MTS, IMP



**GREESHMA K B**  
AIR 559  
IMP



**OORMILA J S**  
AIR 563  
PCM, Sociology



**HEMA V**  
AIR 569  
MTS, Sociology, IMP



**AKSHAY RAJ P**  
AIR 641  
MTS, IMP



**VAISAKH C R**  
AIR 656  
IMP



**ANJALI P**  
AIR 702  
PCM, Malayalam  
Optional



**NESRIN P FASIM**  
AIR 703  
IMP



**AJAY R RAJ**  
AIR 730  
IMP



**YEDU K RAJAN**  
AIR 785  
IMP



**GANGA GOPI**  
AIR 786  
PCM



**PRANAV P MANANGATH**  
AIR 800  
PCM



**ADHIL SHUKOOR**  
AIR 822  
IMP



**KIRAN G**  
AIR 835  
IMP



**NISA UNNIRAJAN**  
AIR 1000  
PCM



**SAGAR MOHANDAS**  
AIR 1003  
IMP

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