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# Current Affairs (CONSOLIDATION)

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Drishti, 641, First Floor, Dr. Mukharjee Nagar, Delhi-110009  
Inquiry (English): 8010440440, Inquiry (Hindi): 8750187501  
Email: [help@groupdrishti.in](mailto:help@groupdrishti.in)

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# Polity and Governance

## Highlights

- ASHA Workers & Related Challenges
- IGNCAs Language Atlas
- Maharashtra Exempts Private Schools from RTE Quota Admissions
- Financial Devolution in India
- Tirupati Recognized for Waste Management Leadership
- Digital Public Infrastructure
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- Farmers Protest 2.0 and MSP
- What are the Challenges with the Legalisation of MSP?

## ASHA Workers & Related Challenges

### Why in News?

The recent **protest by Accredited Social Health Activist (ASHA) workers in Bengaluru** underscores persistent concerns surrounding their working conditions and pay, shedding light on challenges within India's rural healthcare system.

### Who are ASHA Workers and What are their Responsibilities?

- **Background:** In 2002, Chhattisgarh pioneered a revolutionary approach to community healthcare by appointing women as **Mitanins**, or community health workers.
  - Mitanins served as advocates for underprivileged communities, bridging the gap between **distant health systems** and local needs.

- Inspired by the success of Mitanins, the central government launched the ASHA program in 2005-06 under the **National Rural Health Mission** and expanded to urban areas with the introduction of the **National Urban Health Mission** in 2013.
- **About:** Selected from the village itself and accountable to it, the ASHA workers are trained to work as an **interface between the community and the public health system**.
  - They are primarily women residents of villages, aged between **25 to 45 years**, preferably literate up to 10th grade.
  - Typically, there is **1 ASHA for every 1000 people**. However, in tribal, hilly, and desert regions, this ratio may be adjusted to **one ASHA per habitation** based on workload.
- **Major Responsibilities:**
  - They serve as the first point of contact for health-related needs, especially for **women and children**.

Note:

- They receive **performance-based incentives** for promoting immunization, reproductive & child health services, and construction of household toilets.
- They counsel on **birth preparedness, safe delivery, breastfeeding, immunization, contraception**, and prevention of common infections.
- They facilitate community access to health services available at **Anganwadi/sub-centre/primary health centers**.
- They act as depot holders for essential provisions like **ORS, IFA tablets, contraceptives**, etc.

### What are the Challenges Faced by ASHA Workers?

- **Heavy Workload:** ASHAs are often burdened with multiple responsibilities, it sometimes becomes overwhelming, especially considering the vast scope of their duties.
  - Also, they themselves remain at risk of **anaemia, malnutrition and non-communicable diseases**.
- **Inadequate Compensation:** ASHAs, primarily relying on meager honorariums, face economic challenges aggravated by **delayed payments and out-of-pocket expenses**.
  - They lack basic support like social security benefits like leave, provident fund, gratuity, pension, medical assistance, life insurance and maternity benefits.
- **Lack of Adequate Recognition:** ASHAs' contributions are not always recognized or valued, leading to feelings of **underappreciation and frustration**.
- **Lack of Supportive Infrastructure:** ASHAs face challenges related to inadequate infrastructure, including **limited access to transportation, communication facilities, and medical supplies**. This hinders their ability to effectively carry out their duties.
- **Gender and Caste Discrimination:** ASHAs, who are predominantly women from marginalised communities, face discrimination based on gender and caste within the healthcare system.

## IGNCA's Language Atlas

### Why in News?

The **Indira Gandhi National Centre for Arts (IGNCA)**, an autonomous institution under the **Ministry of Culture**, is planning a **linguistic survey** across India. The aim is to

create a comprehensive 'Language Atlas' to showcase the linguistic diversity of the country.

### How Linguistically Diverse is India?

#### ➤ Historical Census Records:

- The **first and most exhaustive Linguistic Survey of India (LSI)** was carried out by **Sir George Abraham Grierson** and published in **1928**.
- The 1961 Census of India recorded 1,554 languages spoken in India.
  - The **Census of 1961 was the most detailed** with respect to linguistic data. In this Census, **even languages with a single speaker were included in the records**.
- Since **1971, languages spoken by fewer than 10,000 individuals have been omitted** from the Indian Census, leaving the native tongues of **1.2 million people unrecorded**.
  - This exclusion disproportionately impacts tribal communities, whose languages are frequently absent from official records.
- India now officially recognizes **22 languages listed in Schedule 8 of the Indian Constitution**.
  - 2011 Census data indicates that **97% of the population speaks one of these officially recognized languages**.
  - Additionally, there are **99 non-scheduled languages, according to the 2011 Census** and around 37.8 million people identify one of these languages as their mother tongue.
    - There are **121 languages which are spoken by 10,000 or more people in India**.

#### ➤ Multilingualism in India:

- India is one of the **most linguistically diverse countries in the world**, this diversity offers a **unique opportunity for Indians to be multilingual**, which means being able to use more than one language in communication.
  - According to the 2011 Census of India, **more than 25% of the population speaks two languages**, while about **7% speak three languages**.
  - Studies state that young Indians are more multilingual than their elder generation with about half the urban population aged 15 to 49 years speaking two languages.

Note:

### What are the Key Highlights of the Proposed Linguistic Survey?

- The survey will focus on enumerating the number of languages and dialects in India, including those that are extinct or on the verge of extinction.
- It aims to collect data at both the state and regional levels, with plans to digitally archive audio recordings of all languages spoken.
- It also proposes to **digitally archive the audio recordings** of all the languages spoken.
- Stakeholders in the survey include **Ministries of Culture, Education, Tribal Affairs**, and others, along with various language communities.

### What is the Importance of a Linguistic Survey?

- **Preservation of Cultural Heritage:**
  - Linguistic surveys help in identifying and documenting languages, dialects, and scripts, thereby preserving cultural heritage and linguistic diversity.
- **Policy Formulation:**
  - Data from linguistic surveys informs policymakers about the linguistic needs of different communities, facilitating the formulation of language-related policies in education, governance, and cultural affairs.
- **Education Planning:**
  - Knowledge about the languages spoken in different regions helps in designing educational programs that cater to diverse linguistic backgrounds, promoting inclusive education.
- **Community Empowerment:**
  - Linguistic surveys empower linguistic minorities and marginalised communities by recognizing and validating their languages, contributing to their socio-economic and cultural well-being.
- **Research and Documentation:**
  - Linguistic surveys serve as valuable resources for researchers, linguists, and anthropologists studying language evolution, dialectology, and language contact phenomena.
- **Promotion of Multilingualism:**
  - By raising awareness about the richness of linguistic diversity, linguistic surveys promote multilingualism and foster a sense of pride in one's language and cultural identity.

### What are the Constitutional Provisions Related to Language?

- **Eighth Schedule:**
  - The Eighth Schedule of the Indian Constitution lists the **official languages of India**. It includes **22 languages recognized as official languages**.
    - Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili and Dogri.
  - The Eighth Schedule also includes **six classical languages currently:**
    - Tamil (declared in 2004), Sanskrit (2005), Kannada (2008), Telugu (2008), Malayalam (2013), and Odia (2014).
      - Part XVII of the Indian Constitution deals with the official languages of India in **Articles 343 to 351**.
- **Language of The Union:**
  - **Article 120:** Deals with the language to be used in Parliament.
  - **Article 210:** Similar to Article 120 but applies to the State Legislature.
  - **Article 343:** Declares **Hindi in Devnagari script as the official language of the Union**.
  - **Article 344:** Establishes a Commission and Committee of Parliament on official language.
- **Regional Languages:**
  - **Article 345:** Allows the state legislature to adopt any official language for the state.
  - **Article 346:** Specifies the official language for communication between states and between states and the Union.
  - **Article 347:** Allows the President to recognize any language spoken by a section of the population of a state if demanded.
- **Special Directives:**
  - **Article 29:** It protects the **interests of minorities**. It states that any section of citizens with a **distinct language, script, or culture** has the right to preserve it.
    - The article ensures that no citizen can be denied admission to any educational institution funded by the State solely based on factors such as religion, race, caste, or language.

Note:



- **Article 350:** Ensures that every person has the **right to submit a representation for the redress of any grievance in any language** used in the Union or the State.
  - **Article 350A:** Directs States to provide adequate facilities for instruction in the **mother tongue at the primary stage of education to children** belonging to **linguistic minority groups**.
  - **Article 350B:** Establishes a **Special Officer for linguistic minorities** appointed by the President, tasked with investigating matters relating to safeguards provided for linguistic minorities under the Constitution.

### **What are the Major Challenges to Linguistic Diversity of India?**

- **Linguistic Hegemony:**
  - The **dominance of certain languages over others**, both politically and socially, poses a threat to linguistic diversity. Languages with greater political and economic power may overshadow minority languages, leading to their **decline and endangerment**.
  - One of the significant challenges to linguistic diversity in India is the perception of Hindi as a dominant language, leading to its imposition in non-Hindi speaking regions.
- **Identity Politics and Tensions:**
  - Linguistic diversity can sometimes fuel identity politics and tensions, leading to **conflicts between linguistic groups** over language policies and rights.
  - Attempts to impose or privilege certain languages may provoke resistance and **unrest among linguistic minorities, resulting in social discord**.
- **Lack of Preservation Efforts:**
  - Many indigenous and tribal languages face the **risk of extinction due to a lack of preservation efforts** and support from governments and institutions.
  - Without adequate documentation and revitalization efforts, these languages may disappear, resulting in the loss of cultural heritage and identity.
- **Inadequate Language Education Policies:**
  - Insufficient emphasis on promoting and preserving regional languages in education policies can lead to a **decline in proficiency and usage among younger generations**.

- The focus on a limited number of languages in educational institutions may neglect the linguistic diversity present in the country.
- **Urbanisation and Globalisation:**
  - Rapid urbanisation, globalisation, and the **influence of dominant cultures** can contribute to the erosion of indigenous languages and cultures.
  - As **younger generations shift towards dominant languages and cultures**, there is a risk of losing traditional knowledge, customs, and cultural practices associated with regional languages.
- **Limited Access to Resources in Minority Languages:**
  - Minority languages often **lack resources such as literature, media, and technology** in their respective languages.
  - This limited access to resources hampers the development and preservation of minority languages, making them vulnerable to extinction.

## **Maharashtra Exempts Private Schools from RTE Quota Admissions**

### **Why in News?**

The **Maharashtra school education department** recently issued a gazette notification **exempting private unaided schools** from the **mandatory 25% admission quota** for disadvantaged groups and weaker sections under certain conditions.

- As per **The Right Of Children To Free And Compulsory Education Act, 2009 (RTE Act)** (section 12.1(C)), unaided schools are obligated to ensure that 25% of Class 1 students admitted must belong to “weaker section and disadvantaged group in the neighbourhood”.

**Note:** With this move, Maharashtra joins Karnataka and Kerala in exempting private schools from RTE admissions, following **Karnataka’s 2018 rule** and **Kerala’s 2011 rules** which allow fee concession only if no government or aided schools are within walking distance, set at 1 km for Class 1 students.

### **What Exactly Does the New Rule State?**

- The new rule prohibits local authorities from identifying private unaided schools for 25% admission of disadvantaged groups and weaker sections under the

Note:

**Maharashtra Right of Children to Free and Compulsory Education Rules, 2013**, if the government or aided schools (which receive money from the govt) are **within one kilometre** radius of that school.

- Such private schools **no longer need to adhere to the 25% requirement**; instead, students in these areas will be given priority for admission to the government or aided schools.
- The notification states that if there are no aided schools in the area, private schools will be selected for **RTE** admissions and **reimbursed for fees**, with a new list of obligated schools to be prepared accordingly.

### **Why have States Introduced Such Exemptions?**

- **Karnataka's** state law minister stated in 2018 that the RTE's main aim is to offer education to all students, noting that the state's previous policy of permitting parents to enrol children in private schools near government schools had drastically **reduced government school enrollments**.
  - The Karnataka government's 2018 gazette notification is currently under **judicial scrutiny**.
- Private schools and teachers' organisations have noted that state governments **frequently fail to reimburse fees** for students admitted under this quota, as mandated by Section 12(2) of the RTE Act, which requires state governments to reimburse schools per-child expenses or the fee amount, whichever is lower.

### **What are the Likely Implications of this Exemption?**

- **Arguments Against:**
  - Experts have raised questions regarding the **state's authority** to amend **central law**, stating that the notification contradicts the RTE and should be avoided.
  - The Maharashtra government's amendment has been criticised on the ground that it is **unjustified** and emphasising the importance of **Section 12(1)(C)** in combating education inequality.
- **Arguments in Favour:**
  - Maharashtra govt has highlighted that states are empowered by **Section 38** of the **RTE Act** to **formulate rules** for its implementation, clarifying that the changes made were to the rules drafted in 2011 and 2013, **not the original law**.

- The **action does not contravene the RTE Act**, noting that **section 6** recommends government schools in unserved areas, making **section 12.1(C)** a temporary measure until such schools are established.
- The private unaided schools have welcomed the new rules arguing that the move will increase the number of students in government schools.

### **Are Minority Schools Exempted from Following RTE Quota Admission?**

- **Article 30** of the Constitution guarantees **minority communities** the right to establish and manage educational institutions to preserve their **unique culture, language, and script**.
  - Therefore, **in 2012**, an amendment to the RTE Act 2009 **exempted institutions** offering religious education from complying with the 25% reservation under the RTE Act.
- In 2014, the **Supreme Court** ruled in the **Pramati Educational & Cultural Trust vs Union Of India & Ors** that the RTE Act does not apply to minority schools.

### **What are the Significant Provisions of the RTE Act?**

- **Right to Free and Compulsory Elementary Education:**
  - **Children aged 6-14 years** are entitled to **free, compulsory education** in local schools, with enrollment in an age-appropriate class for those above 6 not in school.
    - **Aided schools** must also offer education for free, proportionate to their funding, but **not less than 25%**.
  - **Elementary education** is free until completion, and **no child can be held back**, expelled, or required to pass a board exam before finishing **elementary education**.
- **Curriculum and Recognition:**
  - An academic authority designated by the central or state government must develop the curriculum and evaluation procedure for elementary education.
  - All schools required to adhere to **pupil-teacher ratio norms** and meet prescribed standards before establishment or recognition
  - Teacher qualification to be ensured by the **Teacher Eligibility Test (TET)** conducted by the appropriate government.

Note:

- **Responsibilities of Schools and Teachers:**
  - Teachers are forbidden from giving **private tuition** or performing non-teaching tasks, except for census, disaster relief, and election duties.
  - Schools must establish **School Management Committees (SMCs)** consisting of local authority representatives, parents, guardians, and teachers to oversee the school's use of government funds and create a school development plan.
- **Grievance Redressal:**
  - The **National Commission for the Protection of Child Rights** reviews safeguards and investigates complaints, with powers akin to a **civil court**; the state government may also establish a **State Commission** for similar functions.

## Financial Devolution in India

### Why in News?

Several Indian states have claimed that they have not been receiving their fair share as per the present scheme of **tax devolution**. They argue that their states contribute more to the **national tax pool** than they receive in return.

### What is the Current Status of Tax Devolution in India?

- **About: Financial devolution** refers to the transfer of financial resources and decision-making powers from the central government to the states.
- **Constitutional Framework: Article 270** of the Constitution outlines the distribution of net tax proceeds between the Union government and the States.
  - The **Finance Commission (FC)**, constituted every five years, provides recommendations for the vertical distribution of funds from the central government's divisible **pool of taxes** (excluding cess and surcharge).
  - Additionally, it offers a formula for the horizontal allocation of these funds among individual states.
  - Apart from the share of taxes, States are also provided **grants-in-aid** as per the recommendation of the FC.
    - The **16<sup>th</sup> Finance Commission**, chaired by **Dr Arvind Panagariya**, has been tasked with making recommendations for the **period 2026-31**.
    - **Criteria for Devolution Among States:** Currently, the share of States from the divisible pool (vertical devolution) stands at **41%** as per the recommendation of the 15th FC.

**Table 1 :** The criteria for horizontal devolution among States over the last five FCs

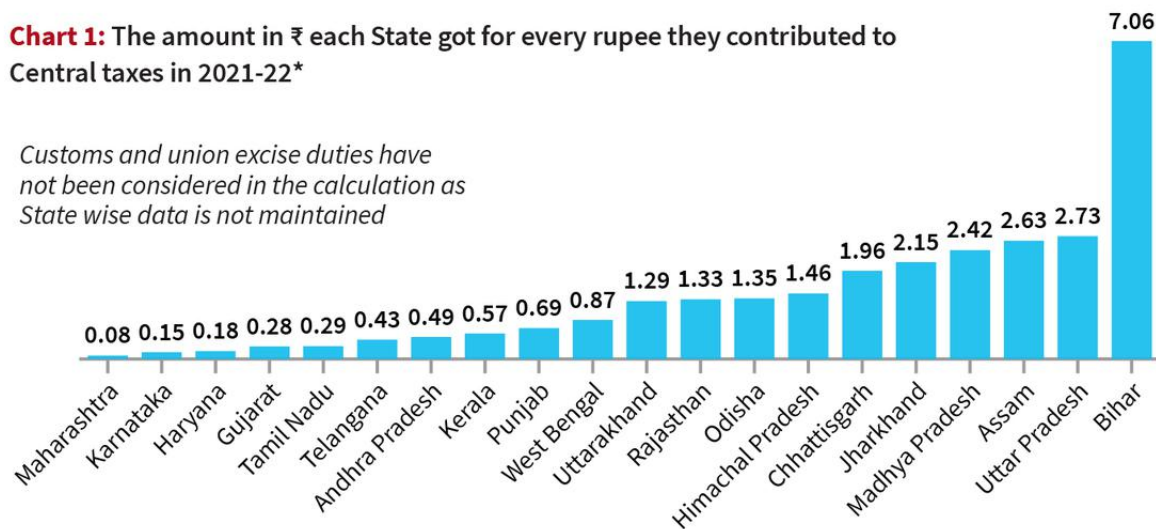
Criteria	11th FC 2000-05	12th FC 2005-10	13th FC 2010-15	14th FC 2015-20	15th FC 2021-26
Income Distance	62.5	50	47.5	50	45
Population (1971 Census)	10	25	25	17.5	-
Population (2011 Census)	-	-	-	10	15
Area	7.5	10	10	15	15
Forest cover	-	-	-	7.5	-
Forest and ecology	-	-	-	-	10
Infrastructure index	7.5	-	-	-	-
Fiscal discipline	7.5	7.5	17.5	-	-
Demographic performance	-	-	-	-	12.5
Tax effort	5	7.5	-	-	2.5
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Note:

➤ States Contribution Versus Devolution:

**Chart 1:** The amount in ₹ each State got for every rupee they contributed to Central taxes in 2021-22\*

*Customs and union excise duties have not been considered in the calculation as State wise data is not maintained*



➤ Concerns Regarding Tax Devolution:

- **Exclusion of Cess and Surcharge:** Concerns are raised regarding the exclusion of cess and surcharge from the divisible pool of tax revenue, leading to a reduction in states' share of tax revenue.
  - Cess and surcharge collected by the Union government is estimated at around **23% of its gross tax receipts for 2024-25**, which does not form part of the divisible pool and hence not shared with the States.
- **Inadequate Compensation for GST Implementation:** Some states feel that compensation for revenue losses during **GST implementation** is insufficient, urging for a fairer mechanism to address revenue shortfalls.
- **Lack of Flexibility in Fund Utilization:** Some States advocate for greater flexibility in utilizing devolved funds to address local priorities.

**Note:**

- **Income Distance:** Refers to the disparity between a state's income and the state with the highest per capita income.
  - States with lower per capita income receive a higher share to ensure equity among states.
- **Population:** Represents the population count based on the **2011 Census**. Previously, until the 14th Finance Commission, population from the **1971 Census** was considered, but this practice was discontinued in the 15th Finance Commission.

- **Forest and Ecology:** Considers the **proportion of dense forest area** in each state compared to the total dense forest area across all states.
- **Demographic Performance:** Introduced to **recognize states' efforts in population control**, with states exhibiting lower fertility ratios receiving higher scores.
- **Tax Effort:** Used to reward states demonstrating **higher efficiency in tax collection**.

## Tirupati Recognized for Waste Management Leadership

### Why in News?

Recently, the Ministry of Housing & Urban Affairs highlighted **Tirupati Municipal Corporation (MC), Andhra Pradesh** for its outstanding achievements in waste management and sanitation.

### What are the Achievements of Tirupati in Waste Management and Sanitation?

- **Swachh Survekshan 2023 Ranking:**
  - Tirupati Municipal Corporation secured the **8<sup>th</sup> spot among cleanest cities** with a population of over 1 lakh, demonstrating its commitment to cleanliness.
- **Garbage Free City (GFC) and Water Plus Rating:**
  - Achieved a **5-star Garbage Free City (GFC)** and **Water Plus(+)** rating.

Note:

**Note:**

- **Swachh Bharat Mission (Urban)** tests cities on cleanliness parameters using categories **Open Defecation Free (ODF)+, ODF++, and Water+**.
  - **ODF+:**
    - Focuses on toilets with water, hygiene, and maintenance. ODF+ cities ensure the **sustainability of the ODF status to maintain proper toilet facilities.**
  - **ODF++:**
    - Focuses on **toilets with sludge and septage management.** ODF++ cities ensure the safe collection, conveyance, treatment, and disposal of all faecal sludge and sewage.
  - **Water+:**
    - Water+ certification protocol evaluates, inter alia, that **no untreated used water or faecal sludge** is discharged into the **environment/ water bodies** and all used water (sewage & faecal sludge) is safely contained, transported, and treated, along with maximum reuse of treated used water.

**How Does Tirupati Handle Waste Management and Sanitation?**

- **Waste Generation Statistics:**
  - Tirupati (largest **Urban Local Body (ULB)** in Andhra Pradesh's Chittoor district) a city generating approximately 115 tonnes per day (TPD) of Wet Waste, 15 TPD of Food Waste, 61 TPD of Dry Waste & Recyclables, 1 TPD of Domestic Hazardous Waste, and 2 TPD of Plastic Waste, along with an additional 25 Tons per day of Construction and Demolition waste, has prioritised robust waste management.
  - All waste collected gets scientifically processed at the respective waste processing and management facilities.
- **Robust Waste Collection Infrastructure:**
  - Tirupati achieves **100% door-to-door waste collection**, covering every gate in the city.
    - Tirupati MC provides essential infrastructure such as Ghanta Gaddis and auto tippers, equipped with compartments for segregating different types of waste.
- **Technology Integration for Efficiency:**
  - Tirupati utilizes an **Online Waste Management**

**System (OWMS) with Radio Frequency Identification (RFID) technology** for real-time tracking of door-to-door waste collection, ensuring accountability and efficiency.

- **Waste Processing and Management Facilities:**
  - Tirupati focuses on **decentralized waste processing**, easing the burden on centralized plants and reducing transportation costs.
  - The city identifies and classifies bulk waste generators, streamlining waste management efforts.
- **Plastic Waste Management Initiatives:**
  - Tirupati manages its plastic waste at a dedicated Plastic Waste Management Facility, equipped to **handle low-grade plastic efficiently.**
    - The introduction of a Washing Plant and Agglomerator Machine enables Tirupati to **recycle plastic waste effectively, contributing to sustainable waste management practices.**
- **Organic Waste Management:**
  - Tirupati operates a **Bio-methanation Plant** that converts **organic waste into bio-methane gas and quality compost**, promoting sustainable agricultural practices and energy production.
    - The generated bio-gas is utilised for various applications such as cooking, energy, and vehicle fuel, contributing to the city's energy sustainability goals.
- **Construction and Demolition (C&D) Waste Management:**
  - Partnering with Pro Enviro Solutions, Tirupati establishes a facility to manage 20-25 TPD of C&D waste, **promoting circular economy principles.**
  - Processed materials from C&D waste are utilised for manufacturing and developmental works, fostering sustainability.

## Digital Public Infrastructure

### Why in News?

Recently, Nasscom and Arthur D. Little have jointly released a report titled-**Digital Public Infrastructure of India - Accelerating India's Digital Inclusion**, which stated that India's **Digital Public Infrastructures (DPIs)** are likely to propel India towards a USD 1 trillion digital economy by 2030.

Note:

### What is a DPI?

- **About:** DPI refers to blocks or platforms such as **digital identification, payment infrastructure and data exchange solutions** that help countries deliver essential services to their people, empowering citizens and improving lives by enabling digital inclusion.
- **DPI Ecosystem:** DPIs mediate the flow of people, money and information. These three sets become the foundation for developing an effective DPI ecosystem:
  - First, the flow of people through a digital ID System.
  - Second, the flow of money through a real-time fast payment system.
  - And third, the flow of personal information through a consent-based data sharing system to actualise the benefits of DPIs and to empower the citizen with a real ability to control data.
- **IndiaStack: It is a set of APIs** (Application programming interface) that allows governments, businesses, startups and developers to utilise an unique digital Infrastructure to solve India's hard problems towards presence-less, paperless, and cashless service delivery.
  - India, through India Stack, became the **first country to develop all three foundational DPIs, Digital identity (Aadhar), Real-time fast payment (UPI) and Account Aggregator** built on the **Data Empowerment Protection Architecture (DEPA)**.
    - DEPA creates a digital framework that allows users to share their data on their own terms through a third-party entity, who are known as Consent Managers.

### What are the Key Highlights of the Report?

- **Economic Impact:**
  - DPIs are projected to play a significant role in propelling India towards a USD 1 trillion digital economy by 2030, helping the country to become a **USD 8 trillion economy**.
  - DPIs are expected to enhance citizens' efficiency and promote social as well as **financial inclusion**.
- **Scalability and Reach:**
  - Mature DPIs like **Aadhaar, UPI, and FASTag** have already witnessed exponential adoption by 2022, and they are anticipated to further scale up over

the next 7-8 years, reaching even the remotest segments of the population.

- Mature DPIs have already generated a significant economic value equivalent to 0.9% of India's **GDP (Gross Domestic Product)**. By 2030, this value is projected to increase to ~2.9%-4.2% of GDP, considering both direct and indirect impacts.
  - The **Ayushman Bharat Digital Mission (ABDM)**, which aims to support India's digital health infrastructure, will drive much of the increase in value.
- **Global Leadership:**
  - **India is currently a global leader in developing DPIs**, utilising them to implement widespread adoption of digital payments, data-sharing infrastructures, and bolstering domestic businesses, spurred entrepreneurship in the country.
- **Government Support and IT Ecosystem:**
  - The success of DPIs is attributed to the relentless support by the government and enabled by the IT intellectual capital and startup ecosystem, creating a favourable environment for innovation and growth.
- **Evolution and Superior User Experience:**
  - Existing digital entities are expected to evolve to deliver superior user experiences, leveraging new age technologies such as AI, **Web 3**, and others.
  - **Aadhaar is expected to continue to be a major contributor** as its use cases expand to a broader range of services, further solidifying its role within India's digital infrastructure.
- **Foundation for Digital Revolution:**
  - The foundation of India's digital revolution has been strengthened by DPIs or India Stack, enhancing the country's ability to utilise digital technologies at a population scale to drive societal changes and economic growth.
  - DPIs form the cornerstone to shape the "**tech-ade**" and ultimately drive India's growth path, aiming for the "**India@47**" milestone.
- **Challenges and Suggestions:**
  - While DPI provides opportunities, challenges remain. These include the **lack of connections** between stakeholders, **no real-time data, limited language options**, and **little reach** beyond government services.

Note:

- The governments must provide policy support and regulatory clarity, and set up **task forces to drive adoption of DPI**. They must also look to **partner with startups and enterprises**.

### What are the Pillars of India's DPI Ecosystem?

- **Aadhaar:**
  - Aadhaar is a strategic policy tool for social and financial inclusion, public sector delivery reforms, managing fiscal budgets, increasing convenience and promoting hassle-free people-centric governance.
  - Aadhaar holders can voluntarily use their Aadhaar for private sector purposes, and private sector entities need not seek special permission for such usage.
- **DigiYatra:**
  - **DigiYatra** is a Biometric Enabled Seamless Travel (BEST) experience based on a **Facial Recognition System (FRS)**.
  - It envisages that **travellers pass through various checkpoints at the airport through paperless and contactless processing**, using facial features to establish their identity, that is linked to the boarding pass.
- **DigiLocker:**
  - **DigiLocker** has 150 million users, six billion stored documents, and done with a tiny budget of RS 50 crore over seven years.
  - The users can store their documents such as insurance, medical reports, PAN card, passport, marriage certificate, school certificate and other documents in the digital format.
- **UPI:**
  - Unified Payment Interface (UPI) has crossed 8 bn transactions per month and transacts a value of USD 180 billion a month.
  - UPI is currently the biggest among the **National Payments Corporation of India (NPCI)** operated systems including National Automated Clearing House (NACH), IMPS, **AePS**, Bharat Bill Payment System (BBPS), RuPay etc.

#### Note:

- DPIs align with core **UN Sustainable Development Goals** by providing citizen-centric solutions.
- India's interoperable and open-source DPIs are now being **adopted or considered by over 30 countries** to enhance social and financial inclusion.

### What are the Challenges of DPIs in India?

- **Lack of Access to Infrastructure:**
  - In many regions, especially rural and remote areas, there is **inadequate or no access to reliable internet connectivity** and digital infrastructure. **Limited access to electricity** and the absence of necessary digital hardware like computers and smartphones further exacerbate the problem.
- **Digital Divide:**
  - India faces a significant digital divide between urban and rural areas. While **urban centres generally have better access** to digital infrastructure and services, rural regions often lack reliable internet connectivity and **face technological disparities**.
- **Affordability:**
  - Even if digital infrastructure is available, the **cost of internet access and digital devices can be prohibitive** for many individuals and families, particularly in low-income communities.
- **Language and Content Barriers:**
  - The **dominance of content in a few major languages** can exclude non-English speakers or those who are not proficient in the predominant language. The lack of localised and relevant content can hinder access to vital information and services.
- **Physical and Cognitive Disabilities:**
  - **Persons with disabilities often face challenges** in accessing and using digital technologies due to limited accessibility features and design considerations in digital platforms.
- **Privacy and Security Concerns:**
  - Fear of **privacy breaches and data security issues** can deter individuals from embracing digital technologies, especially when it comes to sensitive personal information.

## Maratha Reservation Bill

### Why in News?

The **Maharashtra Assembly** recently passed the **Maharashtra State Reservation for Socially and Educationally Backward Classes Bill 2024**, setting aside **10% reservation for the Maratha community** in jobs and education under socially and educationally backward categories.

Note:

### What are the Highlights of the Maratha Reservation Bill?

- The Maharashtra State Reservation for Socially and Educationally Backward Classes Bill 2024, drafted based on a **Maharashtra State Backward Class Commission report**.
  - This report identified the **Marathas as socially and educationally backward**, justifying the need for reservation.
- The Bill specifies the **Maratha community as a Socially and Educationally Backward Class** under **Article 342A (3)** of the Indian Constitution. It provides reservation for this class under **Articles 15(4), 15(5), and 16(4)** of the Constitution.
  - Article 342A (3) states that every state or union territory can prepare and maintain a **list of socially and educationally backward classes (SEBCs)**. These lists can be different from the Central List.
  - Article 15(4) empowers the state to make special provisions for the **advancement of any SEBCs of citizens** or the Scheduled Castes and the Scheduled Tribes.
  - Article 15(5) enables the state to make provision for the **reservation of seats in admission to educational institutions** for the backward classes, the Scheduled Castes and the Scheduled Tribes, **except for minority educational institutions**.
  - Article 16(4) authorizes the state to make provision for the **reservation of appointments or posts** in favour of any backward class of citizens which, in the opinion of the state, is not adequately represented in the services under the state.
- The Bill ensures that the principle of **creamy layer is applicable**, restricting reservation to those **Marathas who are not in the creamy layer category**, thereby targeting the **most marginalized within the community**.
- The commission's report highlighted "**exceptional circumstances and extraordinary situations**" justifying reservations to the Maratha community above the 50% ceiling set by the **Supreme Court (Indira Sawhney judgement)** (1992).
  - Maharashtra currently has a reservation of **52%, including various categories such as SC, ST, OBC, Vimukt Jati, Nomadic Tribes, and others**. With the addition of 10% reservation for the **Marathas, the total reservation in the state will now reach 62%**.

### Background of the Maratha Reservation

- **Narayan Rane Committee:**
  - In 2014, a Narayan Rane-led committee **recommended 16% reservation for Marathas** ahead of elections, later challenged and stayed by the Bombay High Court.
- **Gaikwad Commission:**
  - In 2018, the Maharashtra government enacted the **Socially and Educationally Backward Class (SEBC) Act** based on the **Gaikwad Commission's findings, granting 16% reservation**.
    - The Bombay High Court reduced this to **12% in education and 13% in jobs**.
  - Subsequently, the Supreme Court struck down the quota entirely in May 2021, citing insufficient **empirical data to justify exceeding the 50% quota ceiling**.
    - In the **Indira Sawhney judgment** 1992, SC had categorically said **50% shall be the rule**, only in **certain exceptional and extraordinary situations** for bringing far-flung and remote areas' populations into mainstream said **50% rule can be relaxed**.
- **Maharashtra State Backward Class Commission:**
  - The Maharashtra State Backward Class Commission, led by Justice (retired) **Sunil B Shukre**, was established in December 2023 to reassess the Maratha reservation issue.
    - The Shukre commission notes that the population of Marathas in the state is 28%, while 84% of them are not advanced, adding that such a large backward community **cannot be added into the OBC bracket**.
    - The Commission cites **extreme poverty, agricultural income decline, and land holding partitions** as reasons for the Maratha community's plight. Additionally, it highlights that **94% of farmer suicides in the state are from the Maratha community**.
    - The Commission notes **inadequate representation in public services**, attributing it to the community's backwardness.
    - It recommends **separate reservations to increase Maratha representation** in government jobs and developed sectors.

Note:



## What are the Arguments in Favour and Against the Maratha Reservation Bill?

### ➤ Arguments in Favour:

#### ○ Socio-Economic Backwardness:

- The empirical data collected by the Shukre Commission underscores the socio-economic challenges faced by the Maratha community, justifying the need for a reservation to **uplift them from poverty and marginalisation**.
- The high percentage of farmer suicides among Marathas highlights the severity of their economic distress and the urgent need for targeted interventions to uplift the community.

#### ○ Representation:

- Marathas have historically been excluded from mainstream opportunities due to their backwardness. Reservation in government jobs and education can **enhance their representation and participation** in various sectors, contributing to inclusive development.

### ➤ Arguments Against Maratha Reservation:

#### ○ Legal Viability:

- Given the history of previous Maratha reservation attempts **facing legal challenges** and eventual setbacks in higher courts, doubts persist about the new Bill's ability to withstand judicial scrutiny, especially in light of the **Supreme Court's previous ruling striking down Maratha reservations** due to insufficient empirical data justifying quota **extension beyond the 50% ceiling**.

#### ○ The Kunbi Certificate Controversy:

- A draft notification proposing recognition of **"sage soyare" (extended relatives of Marathas with Kunbi lineage) as Kunbi**, eligible for OBC reservation, stirred controversy.
  - Opposition parties have raised questions about the viability of the new reservation and its potential impact on existing OBC reservations.

### ➤ Dissent within the Maratha Community:

- Some activists and leaders within the Maratha community expressed dissatisfaction with the separate reservation, preferring inclusion within the OBC category.

### ○ Need for Comprehensive Approach:

- While reservation may address immediate concerns, it may not effectively address the root causes of Maratha's backwardness. A holistic approach addressing issues like education, skill development, and infrastructure is essential for sustainable development.

## Way Forward

- Ensure that the Maratha Reservation Bill is **legally sound and withstands judicial scrutiny** by providing robust empirical data to justify the reservation beyond the 50% quota ceiling set by the Supreme Court.
- The government should adopt integrated policies that **combine reservation with targeted welfare programs, skill development initiatives, and infrastructure projects** to ensure holistic development for Marathas.
- Sustainable development initiatives addressing the **root causes of backwardness** should be prioritised over short-term considerations, aiming for **inclusive growth and social justice for all communities**.
- Promote social cohesion and inclusivity by fostering understanding and support for affirmative action measures aimed at addressing historical injustices and promoting equity.

## Electronic Voting Machine

### Why in News?

In recent years, there has been growing discussion and analysis surrounding the integrity and dependability of **Electronic Voting Machines (EVMs)** used during elections in India.

### What is an Electronic Voting Machine?

- **About:** EVM is a device used to record votes electronically. They were first used in **the Paravur Assembly Constituency of Kerala** in the year 1982.
  - Since 1998, the Election Commission has increasingly used EMVs instead of ballot boxes.
  - In 2003, all state elections and by-elections were held using EVMs.
    - Encouraged by this, **in 2004**, the Commission took a historic decision to **use only EVMs for the Lok Sabha elections**.
- **Development:** It has been devised and designed by the **Technical Experts Committee (TEC)** of the **Election**

Note:

**Commission** in collaboration with two Public Sector undertakings: **Bharat Electronics Ltd**, Bangalore (under Ministry of Defence ) and **Electronic Corporation of India Ltd**, Hyderabad (under Department of Atomic Energy).

- **Functionality:** It has two parts: a **Control Unit** and a **Balloting Unit** connected by a cable.
  - The Control Unit stays with the polling officer, while the Balloting Unit is in the voting booth.
  - The voter has to simply press the **blue button** on the Ballot Unit against the candidate and symbol of his choice and the vote is recorded.
- **Key Features:**
  - An EVM being used by ECI can record a maximum of **2,000 votes**.
  - They do not require electricity. They run on an ordinary battery assembled by
  - **Bharat Electronics Limited/Electronics Corporation of India Limited**.
  - The microchip used in EVMs is a **one-time programmable/masked chip**, which can neither be read nor overwritten.
    - Furthermore, the EVMs are stand-alone machines and there is **no operating system** used in these machines.
- **Benefits:**
  - **Accuracy:** EVMs eliminate the occurrence of 'Invalid Votes' seen frequently with **paper ballots**, ensuring a more accurate reflection of voter choice and reducing complaints and legal disputes.
  - **Efficiency:** EVMs streamline the voting process, **making it faster and more efficient**. They eliminate the need for manual counting, reducing the time required to declare election results.
  - **Transparency:** EVMs enhance transparency in the electoral process by providing a **clear and verifiable record of votes cast**. With features like VVPAT, voters can verify that their votes are recorded accurately.
  - **Cost-effectiveness:** EVMs offer cost savings in terms of **paper, printing, transportation, and storage**, as they eliminate the need for millions of printed ballot papers for each election cycle.
- **Concerns:**
  - **Lack of Transparency:** Some critics argue that the **inner workings of EVMs are not sufficiently transparent**, leading to doubts about the accuracy and fairness of the voting process.

- **Reliability:** Questions have been raised about the reliability of EVMs, including the possibility of **technical malfunctions** or errors that could affect the outcome of an election.
- **Trust Issues:** Despite security measures, there is still a lack of trust among some political parties and voters regarding the reliability and authenticity of EVMs, leading to calls for additional safeguards or alternative voting methods.

#### What is VVPAT?

- **About:** **Voter Verifiable Paper Audit Trail (VVPAT)** is an independent system attached with the EVM that allow the voters to verify that their votes are cast as intended.
  - It was introduced in the bye-election of the **Noksen Assembly Constituency** of Nagaland in 2013.
  - In the 2019 Lok Sabha elections, VVPATs were used in all the constituencies.
- **Functionality:** When a vote is cast, a slip is printed containing the serial number, name and symbol of the candidate and **remains exposed through a transparent window for 7 seconds**.
  - Thereafter, the printed slip automatically gets cut and falls in the sealed drop box of the VVPAT.
  - The machines can be accessed by polling officers only.
- **Related Supreme Court Ruling:** In a 2013 **Subramanian Swamy V/s ECI** case, the **Supreme Court** emphasised the necessity of implementing VVPAT in elections conducted through EVMs.
  - Presently, the **M3 Model** of ECI-EVM and VVPAT are used.

## Standing Committee Calls for Legal Education Reforms

### Why in News?

The **Parliamentary Standing Committee on Personnel, Public Grievances, Law, and Justice** recently submitted a report on **legal education in India**, proposing significant recommendations.

### What are the Major Recommendations of the Committee?

- **Restructuring Legal Education Regulation:** Proposed the creation of the **National Council for Legal Education**

Note:

and Research (NCLER) to oversee non-litigation aspects of legal education, limiting the **Bar Council of India's** regulatory powers.

- **Enhancing Academic Resources:** Recruiting top researchers as faculty to bolster research capabilities within law schools.
  - Acknowledging the necessity for increased state funding to support law schools.
- **Integration of Global Curriculum:** Incorporating global curriculum into Indian law schools to foster international exchange programs for both students and faculty.
  - Exposing students to **diverse legal systems for a comprehensive legal education.**
- **Mandatory Inclusion of Interdisciplinary Subjects:** It suggests mandatory inclusion of subjects like **Law and Medicine, Sports Law, Energy Law, Tech Law/ Cyber Law, Commercial & Investment arbitration, Securities Law, Telecom laws, and banking laws** in undergraduate courses.
  - Collaboration between governments, universities, and BCI is essential for comprehensive curriculum development.
- **Emphasising Practical Training Programs:** Universities should collaborate with BCI to integrate practical training programs like **moot court competitions** into the curriculum.
  - These programs offer students opportunities to apply legal theory in simulated courtroom settings, **enhancing oral advocacy and critical thinking skills.**
- **Quality Assurance in Legal Education:** The Committee stresses the importance of **prioritising quality over quantity** in the recognition of new law colleges.
  - Urgent measures are needed to curb the proliferation of substandard law colleges in India.

**Note:** The origin of Legal education in India revolves around the **Vedic era** whereby the concept of **Dharma** was the source of legal structure. The **Chola judicial system** was the forerunner of the present Indian judicial system. The principle of **"All are equal before law"** or the present **'Rule of law'** was pursued in the Chola kingdom.

### **What is the Bar Council of India?**

- **About:** The Bar Council of India is a **statutory body** created by Parliament under the **Advocates Act, 1961** to regulate and represent the Indian bar.

### ➤ **Regulatory Functions:**

- Prescribing **standards of professional conduct** and etiquette for advocates.
- Establishing procedures for disciplinary actions.
- Setting standards for legal education in India and recognizing qualifying law degrees.

### ➤ **Other Responsibilities:**

- Protecting the **rights, privileges, and interests of advocates.**
- Organising **legal aid** for the underprivileged.
- Conducting elections for Bar Council members.
- To deal with and dispose of any matter which may be referred to it by a State Bar Council.

### ➤ **Recent Developments:**

- In 2023, **BCI allowed foreign lawyers** and law firms to practice in India but limited them to non-litigious activities like **corporate law and intellectual property matters.**
- They cannot handle property conveyancing or title investigations.
  - Indian lawyers in foreign firms face the same restrictions.

### **What is the Advocates Act, 1961?**

- **About:** The **Advocates Act of 1961** was enacted to revise and unify laws concerning legal practitioners and to establish the **Bar Council** and an **All-India Bar.**
  - This legislation replaced most of the provisions of the Legal Practitioners Act of 1879.
- **Recent Amendment:** The **Advocates (Amendment) Act, 2023**, modifies the Advocates Act, 1961, by addressing the issue of touting.
  - Touts are individuals who seek payment in exchange for securing legal business for lawyers.
  - According to the amended provisions, High Courts, district judges, session judges, district magistrates, and certain revenue officers are now **empowered to compile and publish lists of touts.**
    - The Court or judge may exclude from the premises of the Court any person whose name is included in the list of touts.

Note:

### What is the difference between a Lawyer and an Advocate?

- **Lawyer:** The lawyer is the person who is professionally qualified and holder of a degree in law from a reputed institution/college in India
  - Can include legal researchers, law firm associates, legal advisors, etc.
  - Does **not necessarily** have the **right to represent clients in court.**
- **Advocate:** Advocates are qualified legal professionals who have enrolled with a **State Bar Council** and passed the **All India Bar Examination (AIBE)**.
  - Holds the **right to represent clients in court**, plead their case, and argue on their behalf.
  - Equivalent to “**barrister**” in some other legal systems.
- Every advocate is a lawyer, but not every lawyer is an advocate.

## SC's Use of Article 142 in Chandigarh Mayoral Election

### Why in News?

Recently, the Chandigarh mayoral election garnered attention as the **Supreme Court of India** invoked **Article 142 of the Constitution** to overturn the election results.

### Why did the Supreme Court invoke Article 142?

- The Supreme Court invoked Article 142 to **ensure justice and uphold the sanctity of the electoral process** in the Chandigarh mayoral election.
  - The election was marred by **irregularities due to the illegal conduct of the presiding officer** who had announced the winner by invalidating eight votes cast in favour of his opponent, leading to an incorrect declaration of the winner.

### What is Article 142 of the Indian constitution?

- **Empowering the Supreme Court:**
  - Article 142 empowers the Supreme Court to pass any decree or order necessary for doing **complete justice** in any case or matter pending before it.
    - These decrees or orders are enforceable across India's territory, making them significant tools for judicial intervention.

### ➤ Transcending Legal Limitations:

- Article 142 allows the Supreme Court to go beyond the confines of existing laws or statutes to ensure justice for all parties involved.
  - It enables the Court to exercise functions beyond adjudication, including executive and legislative roles when required.
- Article 142 is supported by several other provisions, including **Article 32 (which ensures the right to constitutional remedies)**, **Article 141** (mandating that all courts within India must abide by the Supreme Court's decisions), and **Article 136** (which allows for the Special Leave Petition).
  - This collective framework is known by the term “**judicial activism**”. This concept has often led to the Supreme Court overriding parliamentary legislation to deliver “**complete justice**”.

### ➤ Intervening in Public Interest Matters:

- The provision empowers the Supreme Court to intervene in **cases involving public interest, human rights, constitutional values, or fundamental rights.**
- This reinforces the **Court's role as a guardian of the constitution** and ensures protection against violations or infringements.

### ➤ Judgments Clarifying the Scope of Powers under Article 142:

- **Union Carbide Corporation vs Union of India(1991):**
  - SC Ordered UCC to pay USD 470 million in **compensation for the victims of the Bhopal gas tragedy**, highlighting the wide scope of Article 142(1) and clarifying that its powers are of a different quality and **not subject to express statutory prohibitions.**
- **Supreme Court Bar Association vs Union of India (1998):**
  - The apex court emphasized that the powers under Article 142 are **supplementary and should not be used to override substantive laws.**
    - The court stated that these powers are curative in nature and should not be used to **ignore the rights of litigants or bypass statutory provisions.**
- **A. Jideranath vs Jubilee Hills Co-op House Building Society (2006):**
  - The SC emphasized that while exercising its power under Article 142, no injustice should be inflicted upon a person who is not a party to the case.

Note:

- **State of Karnataka vs Umadevi (2006):**
  - SC clarified that “complete justice” under Article 142 means **justice according to law and not sympathy**, and that the court will not grant relief that perpetuates illegality encroaching into the legislative domain.
- **Criticism:**
  - Risk of encroaching upon the **separation of powers**, **inviting criticism of judicial activism**.

- Critics argue that Article 142 grants the judiciary broad powers without sufficient accountability, potentially leading to **judicial overreach**. However, these powers are reserved for exceptional cases **where existing laws are inadequate**.
- Potential for disputes over the extent of the Court’s authority and its **interference with legislative or executive domains**.

Judicial Activism	Judicial Overreach
Defined as the judiciary’s active role in preserving the country’s legal and constitutional system and upholding citizens’ rights.	When the judiciary exceeds its legal authority or jurisdiction and interferes with legislative or executive functions.
Ensures laws comply with constitutional provision.	Undesirable in a democracy as it breaches the principle of separation of powers.
Promotes social change and protects vulnerable groups.	Can undermine democracy.
Legitimacy of Judicial Activism is often debated, depending on specific circumstances.	Generally considered illegitimate and harmful to democratic functioning.

## NeSDA Way Forward Report 2023

### Why in News?

Recently, the **Department of Administrative Reforms and Public Grievances (DARPG)** has released the ‘**Annual NeSDA Way Forward Report 2023**’, showing that Jammu & Kashmir dominated with 1,117 e-services mapped on the **NeSDA Way Forward Dashboard**.

- The report is based on the **National e-Governance Service Delivery Assessment (NeSDA) Framework**.
- This framework serves as a benchmarking exercise to assess states/Union Territories and Central Ministries regarding their delivery of e-services.

### What are the Key Highlights of the Annual NeSDA Way Forward Report 2023?

- **Total Mapped E-Services:**
  - By the end of December 2023, a total of **16,487 e-Services** were mapped on the NeSDA Way Forward Dashboard, showcasing the extent of digital service delivery across various sectors.
    - **In e-service delivery, Jammu & Kashmir is followed by Tamil Nadu** (1,101 e-services), Madhya Pradesh (1010), and Kerala (911).

- Apart from **Manipur, the bottom four states** are Lakshadweep (42), Ladakh (46), Sikkim (51) and Nagaland (64).
- Jammu & Kashmir’s commendable progress in e-governance, as evidenced by the provision of 1120 e-services and achieving 100% service delivery through their **unified e-UNNAT (Unified, Integrated, Accessible, and Transparent) platform**, has served as a source for replication and dissemination of e-services in Manipur.

### ➤ Major Highlights:

- Across States/UTs 16,487 Total e-services are provided across States/UTs Jammu and Kashmir provides the maximum (1117) number of e-services, across States/UTs.
  - Maximum e-services are provided in the sector – **Local Governance & Utility Services** .
  - **The tourism sector has achieved the highest saturation** for the provision of **all mandatory e-services in 23 out of 36 States/UTs**. This is **followed by Environment and Labour & Employment sector** in 20 out of 36 States/UTs
- **Mandatory Service:**
  - Rise in saturation of **Mandatory e-Services** from 48% in NeSDA 2019 to 69% in NeSDA 2021 to **76% in NeSDA Way Forward (2023)**.

Note:

### ➤ Challenges in e-Service Delivery:

- There are disparities among states, with **Manipur facing challenges in providing e-services compared to other regions**, indicating a need for concerted efforts to improve digital governance in lagging states.

### **What is the National e-Governance Service Delivery Assessment (NeSDA)?**

#### ➤ About:

- The Department of Administrative Reforms and Public Grievances (DARPG) formulated the NeSDA Framework **to assess** States/UTs and Central Ministries with regard to their **delivery of e-services as a benchmarking exercise**, covering seven sectors.

- **Seven sectors are-** Local Governance & Utility Services; Social Welfare including Health, Agriculture, Home & Security; Finance; Labour & Employment; Education; Environment; Tourism.

- It is released by the Ministry of **Personnel, Public Grievances and Pensions**.
- In this assessment, the service portals were evaluated alongside their parent Ministry/portal Departments in this project.

#### ➤ Categorisation of Portal:

- All Government portals that were evaluated were **divided into two main categories-**

- States/Union Territories/Central Ministry portal.
- State/Union Territory/ Central Ministry Services Portals.

#### ➤ Parameters:

- There were four main parameters of assessment: -
  - Accessibility.
  - Content Availability.
  - Ease of Use and Information Security.
  - Privacy for Central Ministry Portals.
- An additional three parameters were also used for the Central Ministry Services Portals -
  - End Service Delivery.
  - Integrated Service Delivery.
  - Status and Request tracking.

### Unified Services Delivery

- A unified service delivery portal seamlessly **integrates services across departments** to provide better governance and service availability.
- These help ensure that all citizen entitlements are available on the cloud, enhance the **ease of doing business**, and integrate a number of technologies for development activities.
- Unified and seamless delivery of services is a core tenet of the NeSDA framework and strengthening such portals will enhance the digital empowerment of citizens.

## UNIFIED SERVICE DELIVERY PORTAL

### Major Key Features in an Ideal Unified Service Delivery Portal



Note:

### What are the Government Initiatives to Promote E-Governance in India?

- [MyGov Initiative](#)
- [National Scholarships Portal \(NSP\)](#)
- [Darpan Portal](#)
- [DigiLocker](#)
- [National Center of Geo-informatics](#)
- [National e-Governance Plan](#)

## Right to Maintenance of Muslim Women

### Why in News?

Recently, the [Supreme Court \(SC\)](#) has decided to examine if a divorced Muslim woman is entitled to a claim of maintenance under **Section 125 of the Criminal Procedure Code (CrPC)** against her former husband — reigniting the debate on whether secular laws should be given precedence over distinct personal laws.

- The dispute arose after a Muslim man challenged a Telangana [High Court](#) direction to pay interim maintenance to his former wife.
- He contended that maintenance in this case will instead be governed by the provisions of the [Muslim Women \(Protection of Rights on Divorce\) Act, 1986 \(1986 Act\)](#), prevailing over **Section 125 of the CrPC**.

### How has the Muslim Women Act, 1986 Evolved?

- **Pre-1986: Maintenance under Section 125 of CrPC:**
  - Before the enactment of the [Muslim Women \(Protection of Rights on Divorce\) Act, 1986](#), Muslim women could seek maintenance under **Section 125 of the Code of Criminal Procedure (CrPC)** like women from other communities.
  - This was affirmed by the Supreme Court's decision in the case of [Mohd. Ahmad Khan v. Shah Bano Begum, 1985](#).
- **1986 Act:**
  - In response to the Shah Bano case, the Indian Parliament enacted the Muslim Women (Protection of Rights on Divorce) Act, providing a specific mechanism for divorced Muslim women to **claim maintenance**.

- It restricted the maintenance period to **the iddat period and tied the amount to the mahr or dowry** given to the woman.
  - **Iddat is a period, usually of three months**, which a woman must observe after the death of her husband or a divorce before she can remarry.
- **Danial Latifi v. Union Of India Case, 2001:**
  - The Supreme Court upheld the constitutional validity of the 1986 Act but extended the right of a Muslim woman to get maintenance till she re-marries. It, however, reduced the period of maintenance to the completion of iddat.
- **2009:**
  - In 2009, the SC reiterated that divorced Muslim women could claim maintenance under **Section 125 of the CrPC**, even beyond the iddat period, as long as they do not remarry.
  - This affirmed the principle that the **CrPC provision applies irrespective of religion**.
- **2019:**
  - The Patna High Court **emphasised that divorced Muslim women** have the option to seek maintenance under both Section 125 of the CrPC and the 1986 Act.
  - This underscores the **concurrent applicability of both laws** and ensures that Muslim women are not deprived of their rights under either provision.
- **Current Case:**
  - The current case involves an appeal by the Appellant, whose former wife approached a family court in Hyderabad, alleging that he had given her triple talaq and **claimed monthly maintenance under Section 125 of the CrPC**.
  - The husband argued that the provisions of the **Muslim Women Act, 1986**, being a special law, would prevail over Section 125 of the CrPC.
    - He contended that relief cannot be sought before the family court as the **1986 Act gives jurisdiction to the First-Class Magistrate** to decide the issue of mahr and other subsistence.
    - He highlighted that the wife did not file any affidavit before the magistrate stating **her preference for the CrPC provisions over the 1986 Act**, as required by Section 5 of the latter.

Note:

### The Muslim Women (Protection of Rights on Marriage) Act 2019

- A Muslim woman who is divorced by her husband by pronouncing talaq can seek maintenance allowance under **the Muslim Women (Protection of Rights on Marriage) Act 2019**.
  - The Act declares any pronouncement of talaq by a Muslim husband upon his wife, by words, either spoken or written or in electronic form or in any other manner whatsoever, to be void and illegal.
  - The Act entitles a divorced Muslim woman to receive from her husband such amount of subsistence allowance, for her and dependent children, as may be determined by the Magistrate.
  - The Act is a special law that overrides the provisions of **Section 125 of the Code of Criminal Procedure, 1973**, which deals with the maintenance of wives, children and parents.
    - However, a divorced **Muslim woman can choose to not be governed by the Act and opt for other remedies** available under any other law or custom.

### What are the Supreme Court's Observations Regarding the Case?

- **Interpretation of Section 3 of the 1986 Act:**
  - The court pointed out that **Section 3 of the 1986 Act** contains a **non-obstante clause** (notwithstanding anything contained in any other law for the time being in force), indicating that it does not bar alternative remedies under other **laws such as Section 125 of the CrPC**.
- **Amicus Curiae Submission:**
  - The amicus curiae, concurred with the court's observation and emphasised the need for an authoritative pronouncement on whether the **1986 Act supersedes the right under Section 125 of the CrPC**.
    - An **amicus curiae** is a person or entity who is not a party to the case but offers expertise or information to assist the court in making its decision.
- **Constitutional Principles:**
  - The judges highlighted that the 1986 Act must be interpreted to ensure that divorced Muslim women are entitled to all maintenance rights available to other divorced women in the country.

- They emphasised that treating Muslim divorced women less favourably would violate **constitutional principles, including Articles 14, 15, and 21**.

### Legislative Intent:

- Dismissing the petitioner's argument that the 1986 Act intended to debar Muslim women from seeking relief under Section 125 of the CrPC, the court asserted that if such was the legislative intent, it would have been explicitly stated in the Act.
- The absence of such explicit language implies that there is **no restriction on Muslim women from seeking relief under Section 125**.

### What are the Related Prior Judicial Precedents?

- In the judgments such as **Arshiya Rizvi v. State of U.P. Case, 2022**, **Razia v. State of U.P. Case, 2022**, and **Shakila Khatun v. State of U.P. Case, 2023**, the Allahabad High Court has reaffirmed a divorced Muslim woman's right to claim maintenance under Section 125 of the CrPC even after the completion of the **iddat period as long as she does not marry**.
- In **Mujeeb Rahiman v. Thasleena Case, 2022**, a single judge of the Kerala High Court observed that a divorced Muslim woman can seek maintenance under Section 125 of the CrPC until she obtains relief under Section 3 of the 1986 Act.
  - Such an order will remain in force until the amount payable under Section 3 is paid.
- In **Noushad Flourish v. Akhila Noushad, Case 2023**, the Kerala High Court ruled that a Muslim wife who effected her divorce by the pronouncement of **khula** (divorce at the instance of, and with the consent of the wife) cannot claim maintenance from her husband under Section 125 of the CrPC.
  - When the wife effects divorce by khula to get her released from the husband, the same, in fact, is akin to the refusal of the wife to live with her husband, as provided under Section 125(4) of CrPC

## National Commission for Scheduled Castes

### Why in News?

Recently, the Ministry of Social Justice & Empowerment submitted the **Annual Report 2022-23 of the National Commission of Schedule Caste (NCSC)** to the President of India.

Note:



- The reports contain various recommendations on the issues entrusted to the Commission regarding the protection of Constitutional Safeguards of the **Scheduled Castes (SCs)** as enshrined in the Constitution of India.
- As per the mandate given to the **NCSC under Article 338** of the Constitution of India, it is the duty of the Commission to present to the President annually & at other times as the Commission may deem fit, report upon the working of the Constitutional Safeguards of the SCs.

### **What is the National Commission for Scheduled Castes (NCSCs)?**

- **About:**
  - The NCSC is a **Constitutional Body** established with a view to provide safeguards against the exploitation of Scheduled Castes and to promote and protect their social, educational, economic and cultural interests.
- **History:**
  - **Special Officer:**
    - Initially, the constitution provided for the appointment of a Special Officer under **Article 338**. The special officer was designated as the Commissioner for Scheduled Castes and Scheduled Tribes.
  - 65<sup>th</sup> Constitutional Amendment Act, 1990:
    - It amended **Article 338 of the Constitution** and replaced the one-member system with a multi-member National Commission for Scheduled Castes (SC) and Scheduled Tribes(ST).
  - **89th Constitutional Amendment Act, 2003:**
    - Article 338 was amended, and the erstwhile National Commission for SC and ST was replaced by two separate Commissions from the year 2004 which were:
      - **National Commission for Scheduled Castes (NCSC)** under **Article 338**.
      - **National Commission for Scheduled Tribes (NCST)** under **Article 338A**.
- **Composition:**
  - The NCSC comprises a **Chairperson, a Vice-Chairperson, and three additional Members**.
  - These positions are filled through the President's appointment, indicated by a warrant under his hand and seal.

- Their conditions of service and tenure of office are also determined by the President.

#### ➤ **Functions:**

- To investigate and monitor all matters relating to the constitutional and other legal safeguards for the SCs and to evaluate their working;
- To inquire into specific complaints concerning the deprivation of rights and safeguards of the SCs;
- To participate and advise on the planning process of socio-economic development of the SCs and to evaluate the progress of their development under the Union or a state;
- To present to the President, annually and at such other times as it may deem fit, reports upon the working of those safeguards;
- To make recommendations as to the measures that should be taken by the Union or a state for the effective implementation of those safeguards and other measures for the protection, welfare and socio-economic development of the SCs.
- Till 2018, the commission was also required to discharge similar functions with regard to the **other backward classes (OBCs)**. It was relieved from this responsibility by the **102nd Amendment Act, 2018**.

#### ➤ **Power of NCSC:**

- The Commission is vested with the **power to regulate its own procedure**.
  - The Commission, while investigating any matter or inquiring into any complaint, **has all the powers of a civil court** trying a suit and in particular in respect of the following matters:
    - **summoning** and enforcing the attendance of any person and examining him on oath;
    - receiving evidence on affidavits; and
    - requisitioning any public record from any court or office.
  - The Central and state governments are required to consult the Commission on all major policy matters affecting the SCs.

### **What are the other Constitutional Provisions for the Upliftment of the SCs?**

- **Article 15:** The article specifically addresses the issue of discrimination based on caste, emphasising the protection and upliftment of SCs.

Note:

- **Article 17:** Article abolishes **Untouchability** and prohibits its practice in any form. It seeks to eliminate social discrimination and promote the equality and dignity of all individuals.
- **Article 46:** Article directs the State to promote the educational and economic interests of Scheduled Castes and other weaker sections of society and protect them from social injustice and all forms of exploitation.
- **Article 243D (4):** The provision mandates the reservation of seats for SCs in **Panchayats (local self-government institutions)** in proportion to their population in the area.
- **Article 243T (4):** The provision ensures the reservation of seats for SCs in **Municipalities (urban local bodies)** in proportion to their population in the area.
- **Article 330 and Article 332** provide for the reservation of seats in favour of the Scheduled Castes and the Scheduled Tribes in the Lok Sabha and in the legislative assemblies of the States (respectively).

## Bail Under UAPA

### Why in News?

Recently, the **Supreme Court** denied bail to an accused involved in an alleged Khalistan module, stating that the principle of ‘**bail is rule, jail is the exception**’ is not applicable under the **Unlawful Activities Prevention Act (UAPA)**.

### How the Provision of Bail Evolved under UAPA?

- **2008:** The **UAPA Amendment Act, 2008** introduced **Section 43D (5)**, which required a Court to deny bail if there were **reasonable grounds to believe that the case against the accused was prima facie true**.
  - It requires the accused to convince the court that it is unreasonable to consider the accusations as prima facie true.
  - By shifting this burden onto the accused, the fundamental principle of criminal law, which presumes innocence until proven guilty, is **altered within the framework of the UAPA**.
- **2016:** In the **Angela Harish Sontakke v State of Maharashtra**, the judiciary granted bail despite Section 43D (5)'s stringent provisions, considering the **extended period of custody and the likelihood of a swift trial**, emphasising the need for balance between the alleged offence and the accused's time in jail.

- **2019:** The **National Investigation Agency v Zahoor Amhad Shah Watali judgment** provided a narrow interpretation of Section 43D (5), stating the court must accept the NIA's version of events without delving into the merits of the case, thus making bail harder to secure after charges are framed by the NIA.
- **2021:** In **Union of India v K.A. Najeer**, the Supreme Court highlighted the possibility of granting bail based on the violation of **Article 21** rights due to prolonged incarceration (being imprisoned or detained).
  - The **State of NCT of Delhi v Devangana Kalita case** saw the Delhi High Court separating evidence from NIA inferences, leading to bail granted on the basis of the NIA's failure to establish a prima facie case.
- **2023:** The Supreme Court, in the **Vernon Gonsalves v State of Maharashtra case**, diverged from the previous Watali ruling on the “**prima facie true**” test for granting bail, emphasising the need for **evidence analysis**.
  - However, in the recent case, a two-judge bench denied the bail exclusively following the **Watali precedent**, overlooking the Gonsalves ruling.
  - The conflicting interpretations by different benches raise questions about the consistency and application of bail provisions under UAPA.

### What is UAPA?

- **Background:** On **17<sup>th</sup> June 1966**, the President had promulgated the Unlawful Activities (Prevention) Ordinance “to provide for the more effective prevention of unlawful activities of individuals and associations”.
  - The introduction of the stringent measure sparked uproar in Parliament, resulting in the government retracting it.
  - Subsequently, the **Unlawful Activities (Prevention) Act of 1967**, which differed from the ordinance, was enacted instead.
- **About:** UAPA is a law that aims to prevent unlawful activities and deal with terrorism. It is also known as the “**Anti-Terror law**”.
  - Unlawful activities are defined as **actions supporting or inciting the cession or secession of any part of India**, or actions questioning or disrespecting its sovereignty and territorial integrity.
  - The **National Investigation Agency (NIA)** is empowered by the UAPA to investigate and prosecute cases nationwide.

Note:

- **Amendments:**
  - It underwent multiple amendments, in **2004, 2008, 2012 and most recently in 2019**, expanding provisions related to **terrorist financing, cyber-terrorism, individual designation, and property seizure.**
- **Related Concern:**
  - **Low Conviction Rate:** Under the UAPA, 4,690 persons were arrested between 2018 and 2020, but only **3% were convicted.**
  - **Subjective Interpretation:** The broad definition of unlawful activities allows for subjective interpretations, **making it vulnerable to potential misuse against specific groups** or individuals based on their identity or ideology.
  - **Limited Judicial Review:** The 2019 amendment empowers the government to **designate individuals as terrorists** without any **judicial review**, raising concerns about due process of law and the potential for arbitrary designations.

## Using Green Hydrogen in the Steel Sector

### Why in News?

Recently, the Ministry of New and Renewable Energy has issued guidelines, named “Scheme Guidelines for Implementation of Pilot Projects for use of **Green Hydrogen in the Steel Sector under the “National Green Hydrogen Mission”**”.

- It aims to replace fossil fuels and fossil fuel-based feedstock with **Green Hydrogen** and its derivatives.
- The Scheme will be implemented till FY 2029-30.

### What are the Key Highlights of the Guidelines?

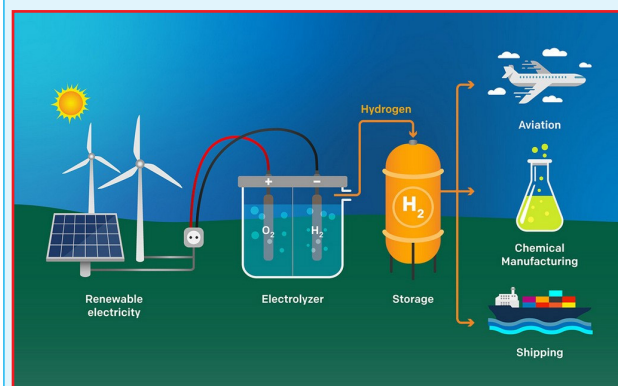
- **Thrust Areas:**
  - Three areas have been identified as thrust areas for the pilot projects in the steel sector. These are:
    - Use of **Hydrogen in Direct Reduced Ironmaking process**
    - Use of Hydrogen in Blast Furnace
    - Substitution of **fossil fuels with Green Hydrogen** in a gradual manner.
  - The scheme will also support **pilot projects involving any other innovative use of hydrogen for reducing carbon emissions in Iron and Steel Production.**

- **Blending Approach:**
  - Steel plants are **encouraged to begin by blending a small percentage of green hydrogen** in their processes and gradually increase the blending proportion as **cost economics** improves and technology advances.
- **Incorporation in New Plants:**
  - Upcoming steel plants are expected to be capable of **operating with green hydrogen** to participate in future **global low-carbon steel markets.**
  - The scheme also supports **greenfield projects aiming at 100% green steel.**

### What is Green Hydrogen?

#### ➤ About:

- Hydrogen is a key industrial fuel that has a variety of applications including the production of ammonia (a key fertilizer), steel, refineries and electricity.
- Hydrogen is the **most abundant element** in the universe. But pure, or the elemental hydrogen, is very scarce. It almost always exists in compounds like with oxygen to form H<sub>2</sub>O or water.
- But when electric current is passed through water, it splits it into elemental oxygen and hydrogen through electrolysis. And **if the electricity used for this process comes from a renewable source like wind or solar then the hydrogen thus produced is referred to as green hydrogen.**
- Colors attached to hydrogen indicate the source of electricity used to derive the hydrogen molecule. For instance, if coal is used, it is referred to as brown hydrogen.



#### ➤ Need for Producing Green Hydrogen:

- Hydrogen is a great source of energy because of its high energy content per unit of weight, which is why it is used as rocket fuel.

Note:

- Green hydrogen, in particular, is one of the cleanest sources of energy, with close to zero emissions. It can be used in fuel cells for cars or in energy-guzzling industries like fertilizers and steel manufacturing.
- Countries across the world are working on building green hydrogen capacity, as it can ensure energy security and also help in cutting carbon emissions.
- Green hydrogen has become a global buzzword, especially as the world is facing its biggest-ever energy crisis and the threat of climate change is turning into a reality.

➤ **Initiatives Related to Renewable Energy:**

- [Jawaharlal Nehru National Solar Mission \(JNNSM\)](#).
- [International Solar Alliance](#)
- [PM- KUSUM](#)
- [National Wind-Solar Hybrid Policy](#)
- [Rooftop Solar Scheme](#)

### **What are the Challenges in Adopting Green Hydrogen in Steel Plants?**

➤ **Technological Adaptation:**

- Transitioning from traditional steelmaking processes to hydrogen-based methods requires significant technological adaptation. Existing steel plants may need to **undergo substantial modifications** or even complete redesign to accommodate hydrogen as a primary reducing agent.

➤ **Infrastructure Requirements:**

- The production, storage, and transportation of hydrogen necessitate significant infrastructure development. Establishing hydrogen production facilities, storage tanks, and distribution networks adds complexity and cost to steel plant operations.

➤ **Cost Implications:**

- Adopting hydrogen-based processes may incur higher initial capital costs compared to conventional methods. Investment in new equipment, infrastructure, and technology, as well as ongoing operational expenses, can pose financial challenges for steel producers, especially in the face of fluctuating market conditions.

➤ **Supply Chain Constraints:**

- Ensuring a reliable supply chain of hydrogen,

including sourcing raw materials and maintaining consistent production levels, is crucial for uninterrupted steel plant operations. Dependence on external suppliers and potential supply chain disruptions may present logistical challenges.

➤ **Carbon Capture and Storage (CCS):**

- Although hydrogen-based steel production offers the potential for significant carbon emissions reductions, capturing and storing CO<sub>2</sub> emissions generated during the process remains a challenge.
- Developing cost-effective CCS technologies compatible with steel plant operations is critical for achieving net-zero emissions targets.

### **What are the Efforts to Promote Green Steel Production?**

➤ **International Collaborations:**

- At the **28<sup>th</sup> Conference of Parties to the United Nations Framework Convention on Climate Change**, India announced its partnership with Sweden under the **LEAD-IT initiative** which had a focus on industrial **Decarbonisation**, specially the steel sector.

- Swedish company SSAB was the first globally to produce **steel through hydrogen back in 2018**.

- Yet another Swedish company, H2-Green Steel, is also planning to roll out its first batch of green steel using hydrogen by 2025.

- Similar initiatives are being taken by **Nippon Steel in Japan and other competitors in France and Germany**.

➤ **Domestic Companies:**

- Domestically, companies like Tata Steel and ArcelorMittal Nippon Steel India have started taking initiatives towards using hydrogen.

- In January 2024, ArcelorMittal Nippon Steel India signed a memorandum of understanding (MoU) with the Maharashtra government, proposing to establish a 6 million tonnes per annum **green steel plant in Maharashtra** that plans to use hydrogen instead of coal.

➤ **Government Schemes:**

- **Perform, Achieve and Trade (PAT) Scheme:**

- **PAT Scheme** incentivizes the steel industry to reduce energy consumption.

- **Pradhan Mantri Urja Ganga Project** to promote the manufacturing of **Green steel**.

Note:

- **Steel Scrap Recycling Policy, 2019:**
  - **Steel Scrap Recycling Policy, 2019** enhances the availability of domestically generated scrap to reduce the consumption of coal in steel making.

## Supreme Court Invalidates Electoral Bonds Scheme

### Why in News?

In a landmark decision, a five-judge Constitution Bench of the **Supreme Court (SC) of India** unanimously struck down the **Electoral Bond Scheme (EBS)** and associated amendments as unconstitutional, sparking significant ramifications for political financing in India.

- The SC asserted that the EBS violated the **fundamental right to information** guaranteed under **Article 19(1)(a) of the Constitution**.

### What is the SC Ruling on the Electoral Bond Scheme?

- The SC declared the EBS and the amendments made to the **Finance Act, 2017**, the **Representation of the People Act (RPA), 1951**, the **Income Tax Act, 1961**, and the **Companies Act, 2013**, as unconstitutional.
  - Before these amendments, political parties were subject to stringent requirements, including declaration of contributions above **Rs 20,000 and a cap on corporate donations**.
- **Restoration of Status Quo by SC:**
  - The SC's judgement reinstated the legal framework before the Finance Act, 2017, in several statutes crucial to political party funding.
  - Representation of the People Act, 1951:
    - Section 29C mandated political parties to **disclose donations exceeding Rs 20,000**, balancing the **right to information with donor privacy**.
    - **Finance Act, 2017 Intervention:**
      - Introduced an exception exempting donations via Electoral Bonds from **disclosure requirements**.
    - **SC Verdict:**
      - Struck down the amendment, emphasising the **importance of transparency and privacy balance**.

- **Companies Act, 2013:**
  - Section 182 **restricted corporate donations, imposing a cap** (7.5% of the average profits of the preceding three fiscal years) and disclosure requirements.
  - **Finance Act, 2017 Intervention:**
    - Removed the cap and disclosure obligations for corporate donations.
  - **SC Verdict:**
    - Nullified the amendment, citing concerns about **unchecked corporate influence on elections**.
- **Income-tax Act, 1961:**
  - Section 13A(b) mandated the maintenance of records for contributions above Rs 20,000.
  - **Finance Act, 2017 Intervention:**
    - Exempted Electoral Bond contributions from record-keeping requirements.
  - **SC Verdict:**
    - Struck down the amendment, upholding **voters' right to information**.
- **Proportionality Test:**
  - The SC applied the **proportionality test** to examine whether the scheme violated the **right to information of the voters** and the transparency of the electoral process.
  - The proportionality test serves as a crucial judicial standard to evaluate the balance between **state action and individual fundamental rights**.
    - The Constitution protects **fundamental rights outlined in Part III**, including the right to **free speech (Article 19(1))**. Any interference with these rights must comply with "**reasonable restrictions**" specified in **Article 19(2)**, assessed through the proportionality test.
      - Article 19(2) allows the **government to impose reasonable restrictions on freedom of speech and expression**.
  - These restrictions can be in the interests of the sovereignty and integrity of India, the security of the State, friendly relations with Foreign States, public order, decency or morality or in relation to contempt of court, defamation or incitement to an offence.
  - The proportionality test gained prominence in the **K.S. Puttaswamy v. Union of India, 2017** ruling, affirming privacy as a fundamental right.

Note:

- Upheld in the **Aadhaar Act ruling of 2018**, the proportionality test ensures that state actions do not **disproportionately infringe upon fundamental rights** while pursuing legitimate government interests.
- **Government's Argument and State Interests:**
  - The government argued that **curbing black money** and **protecting donor anonymity** are legitimate state interests.
    - Donor anonymity was presented as essential for upholding the **right to privacy of donors, a fundamental right**.
  - The government contended that the right to information doesn't extend to seeking information that is not in the state's possession or knowledge.
- **SC Stance:**
  - The Court dismissed donor anonymity as a legitimate state aim, **prioritising the voters' right to information** under Article 19(1)(a) of the Constitution over anonymity.
    - It emphasised the crucial role of the right to information in fostering participatory democracy and holding the government accountable.
  - SC applied the concept of the **"double proportionality" test**. This approach involves balancing competing fundamental rights here, the **right to information and the right to privacy**.
    - SC highlighted that the proportionality test applies when rights clash with state action. But for balancing both rights, the court goes further, ensuring the **state chooses the least restrictive methods for both rights** and avoids disproportionate impacts.
    - SC highlighted the availability of **less intrusive methods**, such as the **electoral trusts scheme**, to achieve the state's objectives effectively.
- **Directions Issued:**
  - The State Bank of India (SBI) has been ordered to immediately stop the issuance of any further electoral bonds and furnish details of such bonds purchased by political parties since 12<sup>th</sup> April 2019, to the **Election Commission of India (ECI)**. Such details must include the date of purchase of each bond, the name of the purchaser of the bond and

the denomination of the bond purchased.

- The ECI shall subsequently publish all such information shared by the SBI on its official website by 13th March 2024.
- Electoral bonds within the validity period but not encashed by political parties must be returned, **with refunds issued to purchasers by the issuing bank**.

### What are Electoral Bonds?

#### ➤ About:

- Electoral bonds, the scheme introduced in 2018 allowing anonymous funding to political parties.
  - These bonds function as financial instruments, akin to promissory notes or bearer bonds, specifically designed for contributions to political parties.
- The EBS was first announced in the 2017 Budget Session. It was later notified in January 2018 as a source of political funding through amendments to the **Finance Act of 2017**, the **Representation of the People Act of 1951**, the **Income Tax Act of 1961**, and the **Companies Act of 2013**, to enable the Electoral Bonds Scheme.
  - The amendments allowed electoral bonds to cut through many of the **restrictions on political party** funding by completely doing away with the **donation limit for companies** and removing the requirements to declare and maintain a record of donations through electoral bonds.

#### ➤ Donations Through Electoral Bonds:

- Electoral bonds are issued by the **State Bank of India (SBI) and its designated branches** and are sold in multiple denominations of Rs 1,000, Rs 10,000, Rs 1 lakh, Rs 10 lakh, and Rs 1 crore.
- Donors can purchase electoral bonds through a **Know Your Customer (KYC)- compliant account** and subsequently transfer the funds to political parties.
- Donors, whether individuals or companies, can purchase these bonds, and the **identities of the donors remain confidential, both to the bank and the recipient political parties**.
- Donations made via electoral bonds **enjoyed 100% tax exemption** under the scheme.
- Notably, there is **no limit on the number of electoral bonds** that a person or company can purchase.

Note:

- **Eligibility to Receive Funds via Electoral Bonds:**
  - Only political parties registered under **Section 29A of the RPA, 1951**, and which **secured not less than 1% of the votes polled** in the last elections to the Lok Sabha or a state legislative assembly, are eligible to receive electoral bonds.

### ***What are the Recommendations on Funding of Political Parties?***

- **Indrajit Gupta Committee on State Funding of Elections, 1998:**
  - Endorsed **state funding of elections to establish a fair playing field** for parties with less financial resources.
  - **Recommended limitations:**
    - State funds to be allocated only to **national and state parties** with allotted symbols, not independent candidates.
    - Initially, **state funding should be provided in kind**, offering certain facilities to recognised political parties and their candidates.
    - Acknowledged economic constraints, advocating **partial rather than full state funding**.
- **Election Commission's Recommendations:**
  - The 2004 report of the Election Commission emphasised the **necessity for political parties to publish their accounts annually**, allowing scrutiny by the general public and concerned entities.
    - Audited accounts, ensuring accuracy, should be made public, with auditing performed by **Comptroller and Auditor General-approved firms**.
- **Law Commission, 1999:**
  - Described **total state funding of elections as "desirable"** under the condition that **political parties are prohibited from receiving funds from other sources**.
  - The Law Commission's 1999 report proposed amending the **RPA, 1951, introducing section 78A for maintenance, audit, and publication of political party accounts**, with penalties for non-compliance.

### ***How does Global Political Funding Differ from India?***

- **Emphasis on Parties vs. Candidates:**
  - **Global Example:**
    - In the United States, political funding often

centres around **individual candidates**, with extensive fundraising efforts directed towards supporting their campaigns.

- **India's Context:**
  - Conversely, **India and other parliamentary systems** prioritise funding frames centred on **political parties**, where donations are channelled to support party activities and campaigns collectively.
- **Donations Regulation:**
  - **Global Practice:**
    - Many jurisdictions impose **bans or limits on certain donors**, such as foreign entities or corporations, to prevent undue influence in political funding.
    - For instance, US federal law imposes varying contribution limits based on the type of donor.
      - Conversely, countries like the UK do not set contribution limits but instead opt for **expenditure limits as a method of regulation**.
  - **India's Context:**
    - India regulates donations but lacks specific limits on individual contributions. This contrast raises concerns about the potential influence of large donors in Indian politics.
- **Expenditure Limits:**
  - **Global Norms:**
    - Expenditure caps are common in global funding frameworks to mitigate financial dominance and ensure a level playing field for candidates or parties.
      - Jurisdictions like the UK enforce expenditure limits on political parties, such as the restriction of not spending more than **30,000 Euros (approximately Rs 30 lakh) per seat**.
  - **India's Context:**
    - India's regulatory landscape **lacks legal expenditure limits on parties**, allowing them to spend freely on campaigns, potentially distorting electoral outcomes.
- **Public Financing:**
  - **Global Trend:**
    - Many countries **offer public funding for political parties** based on various criteria.
    - For example, in Germany, parties receive funds based on factors like past election performance,

Note:

membership fees, and private donations. Additionally, political party foundations receive state funding.

- Seattle, US, has experimented with “**democracy vouchers**,” where eligible voters receive vouchers to donate to their chosen candidates.

○ **Indian Context:**

- **India’s public financing mechanisms are limited**, with initiatives like the Electoral Bonds Scheme raising concerns over transparency and accountability.

➤ **Balancing Transparency and Anonymity:**

○ **International Practices:**

- Many jurisdictions aim to balance transparency and anonymity by **allowing small donors to remain anonymous while requiring disclosures for large donations**.
- For instance, in the UK, parties must report donations exceeding 7,500 pounds in a calendar year, while in Germany, the limit is 10,000 Euros.

- The rationale behind this approach is that **small donors are less likely to wield significant influence** and are more vulnerable to victimisation, while **large donors are more prone to engage in quid pro quo arrangements**.

○ **Indian Context:**

- In contrast, India lacks donation limits on individuals and legal expenditure caps on parties, allowing unrestricted spending on campaigns.

➤ **Chilean Experiment:**

- The Chilean experiment aimed to **achieve anonymity** in party funding to prevent quid pro quo arrangements.
- Under this system donors could transfer money to the **Electoral Service**, which would then forward it to the party without revealing the donor’s identity.
- However, **coordination between donors and parties undermined the system’s effectiveness**, as revealed by scandals in 2014-15.



Note:



# Economic Scenario

## Highlights

- Government Securities
- Bitcoin Halving
- Journey of Spices in India
- Eased FDI Policy for Space Sector
- Lab-Grown Diamonds
- Private Investments in India's Nuclear Energy
- Horticulture Sector in India
- Scheme for Sustainable & Inclusive Development of Natural Rubber Sector
- Promoting Local Fintech Players
- India's Industrial Sector
- Global Pulses Conference
- Potential of Lakshadweep
- Data Exclusivity in Trade Talks with EFTA
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- India's Renewable Energy Vision: IREDA
- Bilateral Investment Treaties
- RBI Imposes Restrictions on Paytm Payments Bank
- Farmers Protest 2.0 and MSP
- What are the Challenges with the Legalisation of MSP?
- Uyghur Forced Labor

## DIGITAL PAYMENT SYSTEMS IN INDIA

A digital or electronic payment refers to transferring money from one payment account to another using a digital device or channel (bank transfers, mobile money, QR codes etc.)

### Payment Systems by NPCI

National Payment Corporation of India (NPCI) is an umbrella entity for retail payment (Payment and Settlement Systems Act, 2007).

#### Immediate Payment Service (IMPS)

- ⌚ For retail customer
- ⌚ **Limit:** ₹1-5 lacs (Fees+GST)
- ⌚ 24/7 (Instant Settlement)
- ⌚ **Provider:** Banks, PPI, Mobile Wallet Companies

#### Unified Payment Interface (UPI)

- ⌚ Technology for digital payment apps based on IMPS
- ⌚ Push and Pull Transaction
- ⌚ Also adopted by other countries like France, UAE, Singapore
- ⌚ **UPI-Lite+NFC:** For offline payment
- ⌚ **BHIM-UPI:** Money transfer app

### RBI's Centralised Payment System (CPS)

#### Real Time Gross Settlement (RTGS)

- ⌚ For high value transactions
- ⌚ **Lower Limit:** ₹2 Lacs (No Upper ceiling) (No fees)
- ⌚ 24/7 (Instant Settlement)
- ⌚ Provided by banking & non-banking entities

#### Lightweight Payment and Settlement System (LPSS)

- ⌚ RBI's emergency alternative to NEFT/RTGS
- ⌚ Temporary, portable solution



#### Rupay Card Payment Gateway (RuPay)

- ⌚ **Works in 3 Channels:** ATM, Point of Sale Device, Online Portals
- ⌚ Given free with PMJDY
- ⌚ Adopted in foreign countries as well (e.g. Mauritius)

#### Miscellaneous Initiatives

- ⌚ Bharat Bill Payment System (BBPS) & Unified Presentment Management System (UPMS)
- ⌚ National Electronic Toll Collection (NETC)
- ⌚ PAI Chatbot
- ⌚ Bharat QR
- ⌚ e-RUPI
- ⌚ Aadhaar Payment Bridge (APB) System
- ⌚ Aadhaar enabled Payment System (AePS)

#### National Electronic Fund Transfer (NEFT)

- ⌚ For mid-range transactions
- ⌚ No limit imposed by RBI (No fees)
- ⌚ 24/7 (Settles net amount between banks @ 30 minutes intervals)
- ⌚ Provided by banking & non-banking entities

#### Digital Payment Regulatory Bodies

- ⌚ Digital Transactions Ombudsman
- ⌚ Board for Regulation & Supervision of Payment & Settlements Systems (BPSS)



Note:

## Government Securities

### Why in News?

The government has completed **Government Securities (G-Sec)** borrowing for the **current fiscal 2023-24** and it expects a dividend from the **Reserve Bank of India (RBI)** in Financial Year 25 (FR 25), similar to FY 24.

- The government's approach to borrowing remains cautious, focusing on prudent fiscal management and ensuring borrowing aligns with the actual needs.
- The completion of G-Sec borrowing, coupled with expectations for dividend income from the RBI, reflects efforts to maintain fiscal stability and meet expenditure targets.

### What are the Rules Under Which RBI Transfers its Surplus to the Government?

- The RBI transfers its surplus to the government in accordance with **Section 47 (Allocation of Surplus Profits) of the Reserve Bank of India Act, 1934.**
  - A technical **committee** of the RBI Board **headed by Y H Malegam (2013)**, which reviewed the adequacy of reserves and surplus distribution policy, recommended a higher transfer to the government.
- According to this section, after making provisions for **reserves and retained earnings**, the **RBI transfers the surplus to the government.**
- The amount transferred is determined based on various factors, **including the RBI's income from sources** such as interest on holdings of domestic and foreign securities, fees and commissions from its services, profits from foreign exchange transactions, and returns from subsidiaries and associates.
  - On the expenditure side, the **RBI incurs costs such as printing of currency notes**, payment of interest on deposits and borrowings, salaries and pensions of staff, operational expenses of offices and branches, as well as provisions for **contingencies and depreciation.**

### What are Government Securities (G-Sec)?

- **About:**
  - A G-Sec is a tradable instrument issued by the **Central Government or the State Governments.**
  - A G-Sec is a type of **debt instrument** issued by the government to borrow money from the public to finance its **Fiscal Deficit.**

- A debt instrument is a financial instrument that represents a **contractual obligation by the issuer to pay the holder a fixed amount of money**, known as principal or face value, on a specified date.

- It acknowledges the **Government's debt obligation.**

- Such securities are **short-term** (usually called treasury bills, with original maturities of less than one year- presently issued in three tenors, namely, 91-day, 182 days and 364 days) **or long-term** (usually called **Government bonds or dated securities** with original maturity of one year or more).

- In India, the Central Government issues both, **treasury bills and bonds or dated securities** while the **State Governments issue only bonds or dated securities**, which are called the **State Development Loans (SDLs).**

- **G-Secs carry practically no risk of default** and, hence, are called **risk-free gilt-edged instruments.**

- Gilt-edged securities are **high-grade investment bonds offered by governments** and large corporations as a means of borrowing funds.

### ➤ Types of G-Sec:

- **Treasury Bills (T-bills):**

- Treasury bills are **zero coupon securities and pay no interest.** Instead, they are **issued at a discount and redeemed at the face value** at maturity.

- **Cash Management Bills (CMBs):**

- In 2010, the Government of India, in consultation with RBI introduced a **new short-term instrument, known as CMBs**, to meet the temporary mismatches in the cash flow of the Government of India.

- The CMBs have the generic character of T-bills but are issued for maturities of less than 91 days.

- **Dated G-Secs:**

- Dated G-Secs are securities that **carry a fixed or floating coupon rate (interest rate)** which is paid on the face value, on a half-yearly basis. Generally, the tenor of dated securities ranges **from 5 years to 40 years.**

- **State Development Loans (SDLs):**

- State Governments also **raise loans from the market** which are called SDLs. SDLs are **dated**

Note:

securities issued through normal auctions similar to the auctions conducted for dated securities issued by the Central Government.

➤ **Issue Mechanism:**

- The RBI conducts **Open Market Operations (OMOs)** for sale or purchase of G-secs to adjust money supply conditions.
  - The RBI sells g-secs to remove liquidity from the market and buys back g-secs to infuse liquidity into the market.
- These operations are **often conducted on a day-to-day basis** in a manner that balances inflation while helping banks continue to lend.
- RBI carries out the OMO through commercial banks and does not directly deal with the public.
- The RBI uses **OMO along with other monetary policy tools** such as **repo rate, cash reserve ratio and statutory liquidity ratio** to adjust the quantum and price of money in the system.

**Retail Sale and Purchase of T Bills**

- **Method of Purchase:** Retail investors can open an online **Retail Direct Gilt (RDG) Account with the Reserve Bank of India (RBI)** to directly purchase T-bills. Additionally, they can place bids via select banks and registered primary agents.
- **Portal for Purchase:** The **Retail Direct Gilt (RDG)** platform provided by RBI facilitates the purchase of T-bills for retail investors.
- **Rules Regarding Purchase and Sale:** Retail investors must adhere to certain rules and regulations when buying and selling T-bills. This includes meeting the **minimum investment amount requirement (INR 10,000 per lot for various durations)** and ensuring compliance with RBI guidelines.
- **Participation in Primary Market:** Retail investors can **participate in the primary market** by placing bids for T-bills through the designated channels mentioned earlier. This allows them to directly purchase newly issued T-bills from the RBI on behalf of the Government of India.
- **Participation in Secondary Market:** Retail investors can **also participate in the secondary market for T-bills through their demat accounts**. In the secondary market, investors can buy and sell T-bills before their maturity dates, providing liquidity and opportunities for trading

## Bitcoin Halving

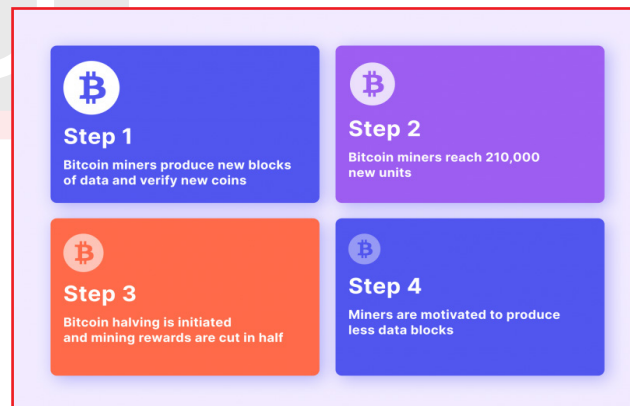
### Why in News?

In April 2024, the anticipated Bitcoin (BTC) halving is poised to take place, with potentially profound implications for the cryptocurrency's market value.

### What is Bitcoin Halving?

➤ **About:**

- A bitcoin halving is an event where the **reward for mining new blocks is halved**, meaning miners **receive 50% fewer bitcoins** for verifying transactions.
- Bitcoin halvings are scheduled to occur **once every 210,000 blocks – roughly every four years** – until the maximum supply of 21 million bitcoins has been generated by the network.
- Bitcoin halvings are important events for traders because they reduce the number of new bitcoins being generated by the network. This **limits the supply of new coins**, so **prices could rise if demand remains strong**.



➤ **Impact:**

- The BTC halving reduces the rate at which new bitcoins are created, decreasing the available supply. This scarcity tends to **drive up prices over time due to increased demand**.
- Bitcoin mining becomes less profitable immediately after the halving since miners receive half the reward for validating transactions. This could lead to consolidation in the **mining industry and potentially push out less efficient miners**.

### What is Bitcoin?

➤ **About:**

- Bitcoin is a type of digital currency that enables

Note:

instant payments to anyone. Bitcoin was introduced in 2009. Bitcoin is based on an open-source protocol and is not issued by any central authority.

➤ **History:**

- The origin of Bitcoin is unclear, as is who founded it. A person, or a group of people, who went by the identity of Satoshi Nakamoto are said to have conceptualised an accounting system in the aftermath of the 2008 financial crisis.

➤ **Use:**

- Originally, Bitcoin was intended to provide an alternative to **fiat money** and become a universally accepted medium of exchange directly between two involved parties.

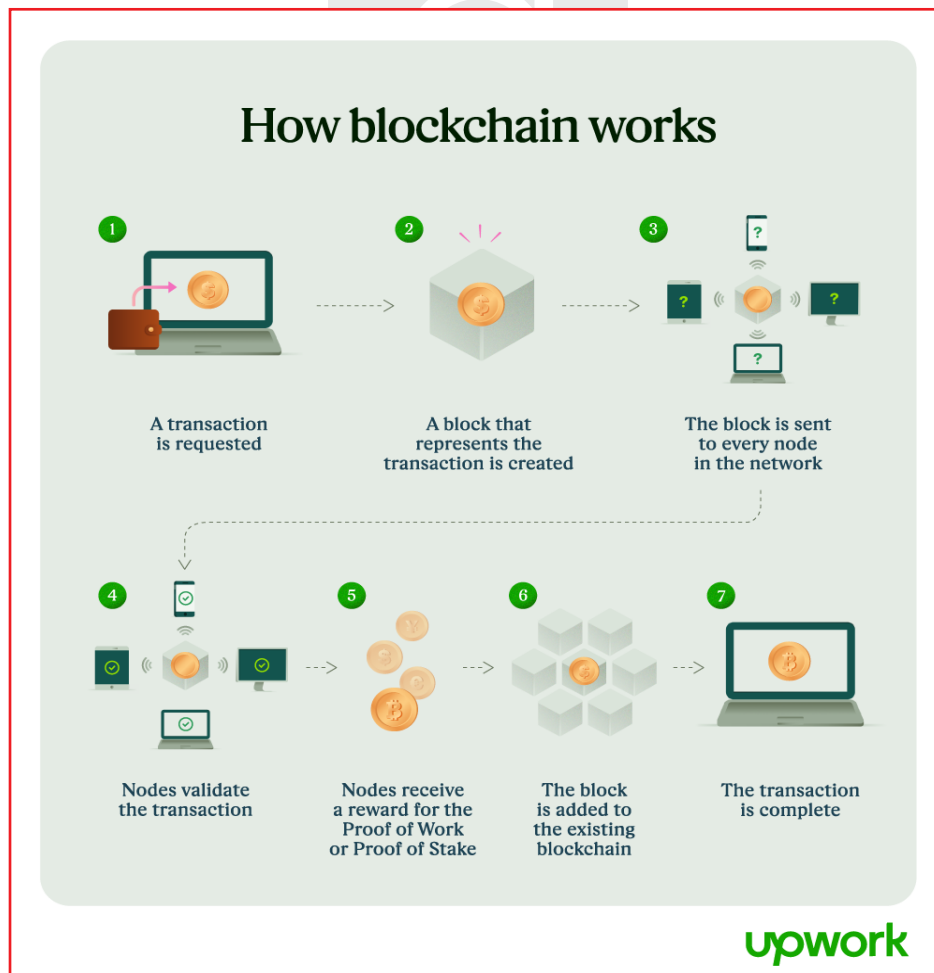
➤ **Record of Bitcoins:**

- All the transactions ever made are contained in a publicly available, open ledger, although in an anonymous and an encrypted form called a blockchain.

- Transactions can be denominated in sub-units of Bitcoin.
  - Satoshi is the smallest fraction of a Bitcoin.

○ **Blockchain Technology:**

- Blockchain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network.
  - An asset can be tangible (a house, car, cash, land) or intangible (intellectual property, patents, copyrights, branding).
- A simple analogy for understanding blockchain technology is a Google Doc.
- When one creates a document and shares it with a group of people, the document is distributed instead of copied or transferred.
- This creates a decentralized distribution chain that gives everyone access to the document at the same time.



Note:

### India and Cryptocurrency

- Cryptocurrencies in India fall under the **virtual digital assets (VDAs)** category and are subject to taxation.
  - The profits generated from cryptocurrency trading are taxed at a rate of 30%, with an additional 4% cess (**Union budget 2022-23**).
- In 2022, the RBI launched its own **Central Bank Digital Currency (CBDC)** known as e-Rupee which is based on blockchain technology.

## Journey of Spices in India

### Why in News?

The history of spices in India reflects a fascinating journey of **cultural exchange**, **economic prosperity**, and the integration of Indian flavours into the global culinary landscape.



Note:

### What is the History of Indian Spices?

- **Ancient Origins:**
  - The use of spices in India can be traced back to ancient times, with evidence dating as far back as the **Indus Valley Civilization**.
  - Spices were used for culinary and medicinal purposes even in these early civilizations.
- **Trade Routes:**
  - India's strategic location on ancient trade routes, including the **Silk Road**, facilitated the exchange of spices with other civilizations.
  - Spices like black pepper, cardamom, and cinnamon were highly **sought after, contributing to India's economic prosperity**.
- **Ayurvedic Influence:**
  - Spices have been integral to **traditional Indian medicine, Ayurveda**, for centuries. Many spices were believed to **possess medicinal properties** and were used to treat various ailments.
- **Arab and Persian Influence:**
  - During the mediaeval period, Arab and Persian traders played a crucial role in further disseminating Indian spices to the West.
  - The spice trade flourished, and **spices became luxury commodities in Europe**.
- **European Spice Trade:**
  - In the **15<sup>th</sup> century, European powers**, particularly the Portuguese, Dutch, and later the British, sought direct access to India's spice-producing regions.
  - This led to the exploration and establishment of maritime trade routes, contributing to the **Age of Exploration**.
- **Colonial Control:**
  - **European colonial powers** aimed to control the spice trade, leading to the establishment of trading posts and colonies in India. Competition for dominance in spice-producing regions, especially in Kerala, was fierce among the Portuguese, Dutch, and British.
- **Monopoly of the British East India Company:**
  - The **British East India Company** played a significant role in monopolising the spice trade during the colonial period.
  - They controlled spice production, distribution, and trade routes, impacting the livelihoods of local spice farmers.

- **Spice Plantations:**
  - The British introduced large-scale **spice plantations in India**, particularly in regions like Kerala and Karnataka, focusing on spices like black pepper, cardamom, and cinnamon for export.
- **Post-Independence Revival:**
  - After gaining independence in 1947, India continued to be a **major player in the global spice market**. Government policies supported spice cultivation, and India remained a significant exporter of various spices.
- **Diverse Spice Production:**
  - Today, India is known for producing a wide variety of spices due to its diverse climate and geography. Spices like black pepper, cardamom, cinnamon, cloves, turmeric, cumin, and coriander are cultivated in different regions of the country.
- **Global Influence:**
  - Indian spices have not only shaped the country's culinary traditions but have also left a significant impact on global cuisine. The use of Indian spices is widespread in international cooking, **contributing to the globalization of culinary practices**.

### What is the Scenario of the Indian Spice Market?

- **Production:**
  - India is the **world's largest spice producer**. It is also the largest consumer and exporter of spices.
  - The production of different spices has been growing rapidly over the last few years.
  - Production in **2021-22 stood at 10.87 million tonnes**. During 2022-23, the export of spices from India stood at USD 3.73 billion from USD 3.46 billion in 2021-22.
    - During **2021-22, the single largest spice exported from India was chilli** followed by spice oils and oleoresins, mint products, cumin, and turmeric.
- **Exports:**
  - India is the largest exporter of spice and spice items. During 2022-23, the country exported spices worth USD 3.73 billion.
  - India exported 1.53 million tonnes of spices. From 2017-18 to 2021-22, the total **export quantity from India grew at a CAGR of 10.47%**.

Note:



### ➤ Varieties:

- India produces about **75 of the 109 varieties** which are listed by the **International Organization for Standardization (ISO)**.
- The most **produced and exported spices** are pepper, cardamom, chilli, ginger, turmeric, coriander, cumin, celery, fennel, fenugreek, garlic, nutmeg & mace, curry powder, spice oils and oleoresins. Out of these spices, **chilli, cumin, turmeric, ginger and coriander make up about 76% of the total production**.
  - The largest spice-producing states in India are Madhya Pradesh, Rajasthan, Gujarat, Andhra Pradesh, Telangana, Karnataka, Maharashtra, Assam, Orissa, Uttar Pradesh, West Bengal, Tamil Nadu and Kerala.

### **What are the Government Initiatives to Promote Spices?**

#### ➤ Export Development and Promotion of Spices:

- This initiative by the **Spices Board of India** aims to support the exporter to adopt high-tech processing technologies and upgrade the existing level of technology for the development of industry and to meet the changing food safety standards of the importing countries.
- The **Spices Board of India** is set up for the development and global promotion of Indian spices.
  - It acts as a **link between Indian exporters and importers abroad**. The main activities of the board involve promotion, maintenance and monitoring of quality, financial and material support to growers, infrastructure facilitation and research.

#### ➤ Spices Parks:

- Spices Board has **launched eight crop-specific Spices Parks** in key production/market centres intending to facilitate the farmers to get an improved price realisation and wider reach for their produce.
- The purpose of the park is to have an integrated operation for cultivation, post-harvesting, processing, value-addition, packaging and storage of spices and spice products.

#### ➤ Spice Complex Sikkim:

- The Spices Board submitted a project proposal to the state's cell for setting up a **Spice Complex in**

**Sikkim** seeking financial assistance for facilitating and demonstrating common processing and value addition in spices to help farmers and other stakeholders in the state.

#### ➤ **Codex Committee on Spices and Culinary Herbs (CCSCH):**

- The CCSCCH is a subsidiary body of the Codex Alimentarius Commission, which is a joint initiative of the **Food and Agriculture Organization (FAO)** and the **World Health Organization (WHO)**.
  - The **Codex Alimentarius Commission** is responsible for setting international food standards to ensure the safety, quality, and fairness of food trade. **India is its member since 1964**.

## **Eased FDI Policy for Space Sector**

Recently, the Union Cabinet approved **amendments in the Foreign Direct Investment (FDI) policy pertaining to the space industry**.

- This development comes in alignment with the **Indian Space Policy 2023**, which seeks to unlock the nation's potential in the space domain through enhanced private participation.

### **What are the Recent Amendments in FDI Policy for the Space Sector?**

- **100% FDI Allowed:** Under the amended policy, **100% FDI is permitted in the space sector, aiming to attract potential investors to Indian space companies**.
- **Liberalised Entry Routes:** The entry routes for various space activities are as follows:
  - **Up to 74% under Automatic Route:** Satellites-Manufacturing & Operation, Satellite Data Products, Ground Segment & User Segment.
    - Beyond 74%, the government route applies.
  - **Up to 49% under Automatic Route:** Launch Vehicles, associated systems or subsystems, Creation of Spaceports.
    - Beyond 49%, the government route applies.
  - **Up to 100% under Automatic Route:** Manufacturing of components and systems/sub-systems for satellites, ground segment, and user segment.

Note:

### What are the Major Developments in the Space Sector in India?

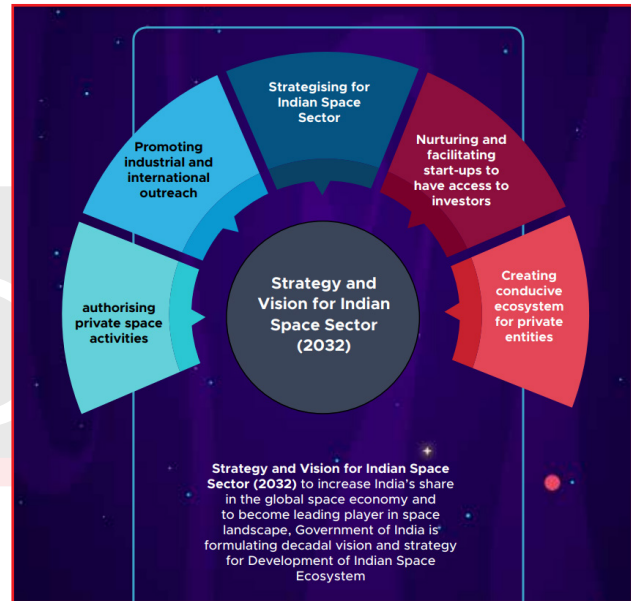
- **About:**
  - India constitutes **2-3% of the global space economy (US: 40%, UK: 7%)** and is expected to enhance its share to more than **10% by 2030**.
    - **ISRO** is one of the **six largest space agencies** in the world.
- **Recent Major Successful Missions:**
  - **Aditya L1**
  - **Chandrayaan 3**
  - **Mars Orbiter Mission (Mangalyaan)**
- **Advancements in Launch Vehicles:**
  - **GSLV Mark III**
  - **Small Satellite Launch Vehicle (SSLV)**
  - **PSLV**
- **Missions for International Clients**
  - **TeLEOS-2 (2023)**: Singaporean Earth observation satellite
  - **PSLV-C51 (2021)**: Launched Brazil's Amazonia-1 satellite and 18 smaller satellites.
- **Other Key Developments:**
  - **NavIC**
  - **Bhuvan**
  - Number of Space Start-Ups have gone up (189 in 2023)

### What are the Key Features of Indian Space Policy 2023?

- **Transition of ISRO's Role:** ISRO to transition out from manufacturing operational space systems and **concentrate on research and development** in advanced technologies.
- **Private Participation Encouragement:**
  - Non-government entities (NGEs) permitted to **offer national and international space-based communication services** through self-owned, procured, or leased satellite systems.
  - NGEs encouraged to manufacture and operate space transportation systems, including **launch vehicles, shuttles, and develop reusable, recoverable, and reconfigurable technologies and systems** for space transportation.
  - NGEs permitted to engage in the **commercial recovery of asteroid resources** or space resources.

- Entitled to possess, own, transport, use, and sell obtained resources in accordance with applicable laws.

- **Industry Collaboration and Commercialisation:** **Indian National Space Promotion and Authorisation Centre (IN-SPaC)** mandated to promote, handhold, guide, and authorise space activities autonomously.
  - **NewSpace India Limited (NSIL)** is tasked with **commercialising space technologies and platforms**, manufacturing, leasing, or procuring space components, and servicing space-based needs on commercial principles.



### What is Foreign Direct Investment?

- **About:** FDI is an investment made by a foreign entity into a business or corporation in another country.
  - FDI can be in the form of equity instruments, or it can be a controlling ownership stake in a business.
- **FDI in India:**
  - In India, FDI is defined as an investment made by a person who is not a resident of India. This can be in the form of:
    - An investment in an unlisted Indian company
    - An investment in **10% or more of the post-issue paid-up equity capital** of a listed Indian company.
  - Total FDI inflows in India in FY 22-23 is **USD 70.97 billion**.
  - According to the **Reserve Bank of India**, The **United States** was the largest source of FDI in India in 2022-23.

Note:



- It was followed by Mauritius, the United Kingdom and Singapore.
- Also, during 2022-23, market value of FDI in India increased by **6.9% in rupee terms**, primarily due to the rise in FDI in unlisted companies.
- **Routes of FDI in India:**
  - **Automatic Route:** Under the Automatic Route, the non-resident investor or the Indian company does not require any approval from the Government of India for the investment.
  - **Government Route:** Prior to investment, approval from the Government of India is required.
    - Proposals for FDI under this route are considered by the respective Administrative Ministry/ Department.
- **FDI Prohibited Sectors in India:**
  - **Gambling and Betting**
  - **Chit Funds**
  - **Nidhi Company**
  - **Trading in Transferable Development Rights (TDR)**
  - **Real Estate Business**
  - **Manufacturing of Tobacco Products**
  - **Sectors Not Open to Private Sector Investment:** Includes atomic energy and railway operations (except for permitted activities under the Consolidated FDI policy).
  - **Lottery Business:** Including government or private lotteries, and online lotteries.

## Lab-Grown Diamonds

### Why in News?

**Lab-grown diamonds** (LGDs), also known as synthetic diamonds have emerged as a disruptive force in the traditional diamond market.




- These gems are created in laboratories using advanced techniques, mimicking the natural processes that form **diamonds deep within the Earth**.

### What are Laboratory-Grown Diamonds?

- **About:**
  - LGDs are manufactured in laboratories, as opposed to naturally occurring diamonds. However, the chemical composition and other physical and optical properties of the two are the same.

- Naturally occurring diamonds take millions of years to form; they are created when carbon deposits buried within the earth are exposed to extreme heat and pressure.
- **Manufacturing:**
  - They are mostly manufactured through two processes, **High Pressure High Temperature (HPHT) method** or **Chemical Vapour Deposition (CVD) method**.
  - Both HPHT and CVD methods of growing diamonds artificially begin with a seed, a slice of another diamond.
    - In the HPHT method, the seed, along with **pure graphite carbon, is exposed to temperatures around 1,500 degrees Celsius** and extremely high pressure.
    - In the CVD method, the **seed is heated to around 800 degrees Celsius** inside a sealed chamber filled with a carbon-rich gas. The gas sticks to the seed, gradually building the diamond.
- **Applications:**
  - They are used for industrial purposes in machines and tools and their hardness and extra strength make them **ideal for use as cutters**.
  - Pure synthetic diamonds are used **in electronics as a heat spreader** for high-power laser diodes, laser arrays and high-power transistors.
  - They are also used for **luxurious and aesthetic purposes**.
- **Significance:**
  - The **environmental footprint** of a diamond grown in a laboratory **is much lesser** than that of a naturally occurring diamond.
  - According to a report by Diamond Foundry, an environmentally conscious LGD manufacturer, **it takes ten times more energy to extract a natural diamond** from the earth than it takes in creating one above the ground.
  - **Open-pit mining**, one of the most common methods of mining naturally occurring diamonds, **involves moving tonnes of earth and rock to extract these precious stones**.

Note:

Growth Process	Typical Growth Morphology
Natural	 <p><b>Shape:</b> Octahedron <b>Growth:</b> 8 directions</p>
High Pressure, High Temperature (HPHT)	 <p><b>Shape:</b> Cuboctahedron <b>Growth:</b> 14 directions</p>
Chemical Vapor Deposition (CVD)	 <p><b>Shape:</b> Cube <b>Growth:</b> 1 direction</p>

### What is the Scenario of Lab-Grown Diamonds in India?

- **Surat: The Hub of Diamond Cutting and Polishing**
  - **Surat** plays a pivotal role in the global diamond trade. Approximately **90% of the world's diamonds are cut and polished in Surat.**
- **The Rise of Lab-Grown Diamond Exports from India**
  - Between 2019 and 2022, lab-grown diamond exports **from India tripled in value.**
  - Export volumes rose by **25% between April and October 2023**, up from 15% in the same period a year earlier.
  - Lab-grown diamonds are gaining popularity globally due to their **affordability and ethical appeal.**
    - Lab-grown diamonds are called "**blood-free diamonds**" because they guarantee no violence and no human rights abuse.
- **Market Share and Industry Impact:**
  - The global market share of lab-grown gems surged from **3.5% in 2018 to 18.5% in 2023.**
    - Industry analysts predict that this share will likely exceed 20% in the year 2024-25.
      - This growth has added pressure to an industry already grappling with geopolitical challenges and **declining demand for natural diamonds.**

**Note:** Major Diamond Producing Countries: Russia, Botswana, Canada, South Africa, and the Democratic Republic of the Congo.

- **Russia is the world's largest producer** of rough diamonds, mining nearly 42 million carats in 2022.

### What are the Ethical Concerns Related to Natural Diamonds?

- **Blood Diamonds (Conflict Diamonds):**
  - Some **natural diamonds are mined in conflict zones.** Such diamonds are called blood diamonds or **conflict diamonds.**
  - The profits generated from selling these diamonds are used for unethical reasons. They are used to **finance armed conflicts.** These diamonds are also associated with **human rights abuses.** It has led to the suffering of countless individuals in affected areas..
- **Exploitation and Labour Conditions:**
  - In some cases, workers in natural diamond mines endure poor working conditions, **low wages, and a lack of job security.**
  - This exploitation is a social issue that has attracted significant attention.
  - **Child labor is a concern in some regions** where diamonds are mined.
- **Environmental Impact:**
  - Natural diamond mining is notorious for its environmental consequences.
  - Large-scale open-pit mines can result in **deforestation, soil erosion, and much more.**
  - These practices also result in the release of harmful chemicals into local ecosystems. This not only affects the environment but also the **livelihoods of nearby communities.**
    - **Man-made diamonds are considered more environmentally friendly** because they significantly reduce the need for destructive mining practices.
- **Money Laundering and Corruption:**
  - The diamond trade has been linked to **money laundering and corruption**, which undermines social and economic development in diamond-producing countries. Combating these issues requires greater transparency, accountability, and anti-corruption measures.

Note:

### What is the Kimberley Process Certification Scheme (KPCS)?

#### ➤ About:

- The Kimberley Process Certification Scheme (KPCS) is an important global initiative established in 2003 to **prevent the trade of conflict diamonds from infiltrating the mainstream rough diamond market**.
- The KPCS ensures that rough diamonds in the legitimate supply chain are **KP (Kimberley Process)-compliant**.
- It is enforced individually by **KP Participant countries**.
- Through the KPCS, States implement safeguards on shipments of rough diamonds and certify them as “conflict-free”.
- The KPCS was established by the **United Nations General Assembly** Resolution 55/56 following recommendations in the **Fowler Report**.

#### ➤ Key Facts about the KPCS:

- There are **59 participants representing 85 countries** around the world participating in the KP.
- The KP observers include the **World Diamond Council**, representing the diamond industry.
- Since 2003, India has been actively participating in the KPCS process and is a member of almost all Working Groups of KP (except the Working Group on Artisanal and Alluvial Production (WGAAP)).
  - The **Department of Commerce is the nodal Department**, and
  - Gem & Jewellery Export Promotion Council (GJEPC) is designated as the KPCS Importing and Exporting Authority in India.
    - GJEPC is responsible for issuing KP Certificates and is also the custodian of KP Certificates received in the country.

### What are the Government Initiatives to Promote Lab-Grown Diamond?

#### ➤ Five-Year Research Grant:

- In the **Union Budget 2023-24**, the government announced a five-year research grant for one of the **Indian Institutes of Technology (IITs)**. The grant aims to encourage the indigenous production of LGD machinery, seeds, and recipes.

- The project has been assigned to **IIT Madras**, and an **India Centre for Lab-Grown Diamond (InCent-LGD)** is proposed to be established there.

- The goal is to provide technical assistance to industries and entrepreneurs, promote indigenous manufacturing of both **Chemical Vapour Deposition (CVD)** and **High Pressure and High Temperature (HPHT)** systems, and expand the LGD business.

#### ➤ Customs Duty Reduction:

- The government has **reduced the customs duty on lab-grown diamond seeds** to lower the cost of production and encourage the growth of lab-grown diamonds. This reduction aims to reduce import dependency and foster domestic production.
  - The **duty on seeds for rough LGDs has been reduced from 5% to nil**.

#### ➤ New Tariff for Synthetic Diamonds:

- The government has taken a significant step by proposing the creation of new tariff lines. These lines will aid in better identification of various products, including synthetic diamonds.
- The primary objectives behind this move are to facilitate trade and provide clarity regarding the eligibility for concessional import duty. By creating specific tariff lines, the government aims to streamline processes and enhance transparency in trade-related matters.

## Private Investments in India's Nuclear Energy

### Why in News?

India is set to revolutionise its **nuclear energy sector** by **inviting private companies to invest approximately USD 26 billion**, marking a significant shift in its energy policy.

- This move aims to boost **electricity generation from non-carbon-emitting sources** and aligns with India's ambitious targets for **renewable energy adoption**.

### How does Private Investment Initiative Align with India's Energy Goals?

- India aims to increase its **non-fossil fuels-based electric generation capacity to 50% by 2030**, up from the **current 42%**.

Note:

- The infusion of private investment in nuclear power generation will contribute significantly to achieving this target, bolstering the country's transition to **cleaner energy sources**.
  - The government is negotiating with leading firms such as Reliance Industries, Tata Power, Adani Power, and Vedanta Ltd. for investments of about Rs 440 billion (\$5.3 billion) each in the nuclear energy sector.
- The government aims to add **11,000 megawatts (MW) of new nuclear power generation capacity by 2040** through this investment.
- This initiative is expected to **diversify India's energy mix**, reduce dependence on fossil fuels, and enhance energy security in the long run.

#### India's Energy Goals

- **Net zero emissions:** India aims to achieve net zero emissions **by 2070**.
- **Renewable energy:** India aims to get 50% of its electricity from renewable energy sources by 2030.
- **Non-fossil fuel energy:** India aims to achieve a non-fossil fuel energy capacity of 500 GW by 2030.
- **Green hydrogen:** India aims to produce 5 million tonnes of **green hydrogen** by 2030.
- **CO<sub>2</sub> emissions:** India aims to reduce **CO<sub>2</sub> emissions** by 1 billion tons by 2030.

#### How will the Investment Plan be Implemented?

- Private companies will be responsible for making investments in nuclear plants, acquiring land, and water, and undertaking construction activities.
- However, the rights to build, operate, and manage the nuclear stations, as well as fuel management, will remain with the **state-run Nuclear Power Corporation of India Ltd. (NPCIL)** as per legal provisions.
- Private companies are anticipated to **generate revenue from electricity sales**, while **NPCIL will operate the projects for a fee**.

#### Note:

- The Consolidated **Foreign Direct Investment (FDI) policy** of India **prohibits foreign investment in the atomic energy sector**.
  - In contrast, there is **no restriction on FDI in the industry for manufacturing nuclear equipment and parts for nuclear power plants and other related facilities**.

- The subject of '**nuclear energy**' is governed by **India's Atomic Energy Act 1962**, and the Government of India plays a pivotal role in the development, operation, and decommissioning of nuclear facilities.
- Recently, a **NITI Aayog (National Institution for Transforming India)** panel recommended to the Government of India to allow FDI into India's atomic sector.

#### What are the Key Highlights of India's Nuclear Power Sector?

##### ➤ Current Energy Landscape:

- India's total installed power capacity presently stands at 428 GW, expected to double to 810 GW by 2030.
  - Nuclear power contributes approx 3% to India's energy mix.

##### ➤ Current Nuclear Power Scenario:

- India operates **22 nuclear power reactors** with a total capacity of 6.8 GW, contributing approximately 3% to the nation's energy mix.
- An additional 11 nuclear power plants are under construction, aiming to add 8,700 MW of capacity.
  - This includes a **Prototype Fast Breeder Reactor (PFBR)** and four **Pressurized Water Reactors (PWRs)** based on Russian technology.
- The government has also sanctioned ten **indigenous Pressurized Heavy Water Reactors (PHWRs)** of 700 MW each, aiming for significant capacity expansion by 2031.

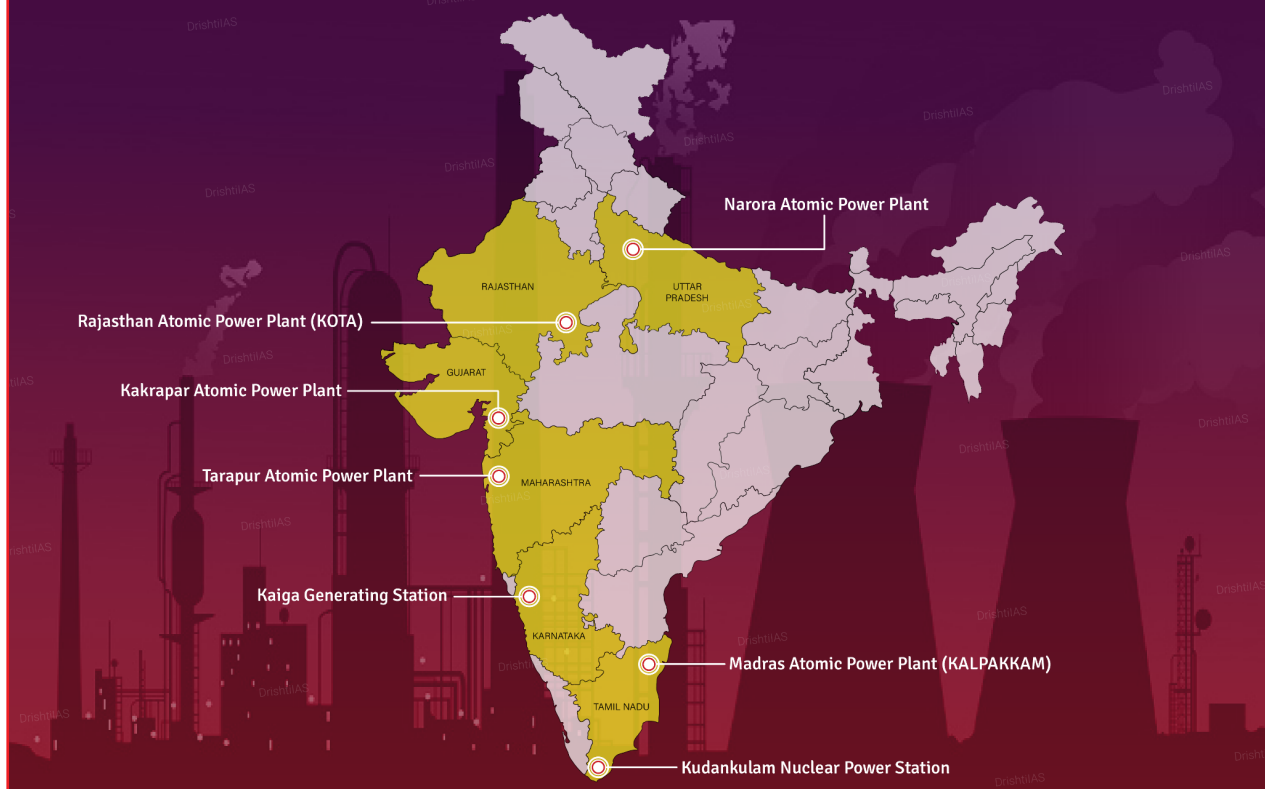
##### ➤ Key Players and Regulatory Environment:

###### ○ Key Players:

- The **Department of Atomic Energy (DAE)**, the **Nuclear Power Corporation of India (NPCIL)**, and the **National Thermal Power Corporation (NTPC)** are the key organizations that play a pivotal role in the nuclear energy sector in India.
  - All three are under the control of the Union government.
  - NPCIL is the owner and operator of all nuclear power plants (except the **PFBR variants**, owned by The **Indira Gandhi Centre for Atomic Research (IGCAR)**, DEA) and the primary contact for all nuclear business in India.
  - **NTPC is a major producer of electricity from coal and accounts for 70GW capacity** and is seeking to adopt nuclear reactors as part of its strategy to phase out old coal plants.

Note:

# Operational Nuclear Power Plants in India



## FACTS

- Presently, India has 22 nuclear power reactors operating in 6 states, with an installed capacity of 6780 MegaWatt electric (MWe).
- Activities concerning the establishment and utilization of nuclear facilities and use of radioactive sources are carried out in India in accordance with the Atomic Energy Act, 1962.
- Atomic Energy Regulatory Board (AERB) regulates nuclear & radiation facilities and activities.
- **Newest & Largest Nuclear Power Plant:** Kudankulam Power Plant, Tamil Nadu.
- **First & Oldest Nuclear Power Plant:** Tarapur Power Plant, Maharashtra.



### ○ Regulatory Oversight:

- The **Atomic Energy Regulatory Board (AERB)** oversees **nuclear safety and regulatory processes**, including site selection, construction, operation, and decommissioning.
  - AERB's responsibilities extend to nuclear applications in various sectors.

### ➤ Nuclear Liability and Insurance:

- India ratified the Convention on **Supplementary Compensation for Nuclear Damage (CSC)** in 2016, establishing a global compensation regime for nuclear accidents.

- The **Civil Liability for Nuclear Damage Act (CLND), 2010**, sets liabilities for operators and mandates insurance to cover potential damages.

- The **Indian Nuclear Insurance Pool (INIP)**, backed by **General Insurance Corporation of India (GIC-Re)** and other insurers, provides USD 15 billion in coverage to protect suppliers against liability claims.

### ➤ Challenges:

#### ○ Safety and Security Standards:

- India's nuclear power plants have been criticized for their **low safety and security standards**, especially in the **event of natural or man-made disasters**.

Note:

- They have also been **accused of radioactive contamination, climate change and leakage**, which affected the health of the workers, and environment.
  - For example, the **Kudankulam Nuclear Power Plant in Tamil Nadu** and the **Kaiga Nuclear Power Plant in Karnataka** faced these issues.
- **Nuclear Waste Management:**
  - India has not developed a **comprehensive and long-term plan for managing and disposing of its nuclear waste**. It also lacks adequate storage and transportation facilities for its radioactive materials.
- **Land Acquisition:**
  - Securing land for nuclear power plants poses significant hurdles, leading to delays in projects such as Kudankulam (Tamil Nadu) and Kovvada (Andhra Pradesh).
- **Lack of Public Funding:**
  - Unlike **fossil fuels and renewables**, nuclear power has not received substantial subsidies, making it less competitive in the energy market.
- **Opportunities for Expansion:**
  - India aims to increase nuclear power's share from 3% to 9-10% of its energy mix.
  - The nuclear sector offers opportunities for **foreign and private companies, especially** in non-nuclear parts of power plants and in the construction and services sector.
  - **Small Modular Reactors (SMRs)** present a promising avenue for cost-saving and reducing construction time, with the potential for technology sharing and partnerships.
  - Nuclear energy could support the production of **green hydrogen and the decarbonization** of the transportation sector, providing a clean power source for electric vehicles and hydrogen fuel cells.
  - With the phasing out of old coal plants, nuclear power will play a crucial role in meeting India's rising energy demands and achieving its clean energy goals.

## Horticulture Sector in India

### Why in News?

In recent years, India has witnessed a significant shift in dietary preferences, with a growing emphasis on **nutrition security** rather than mere **calorie intake**.

- To meet the evolving dietary needs of a burgeoning population, **horticulture farming** is experiencing a notable upsurge across the nation.

### What is Horticulture Farming?

- **Horticulture** is the branch of agriculture concerned with intensively cultured plants directly used by humans for **food, medicinal purposes and aesthetic gratification**.
- It is the cultivation, production and sale of **vegetables, fruits, flowers, herbs, ornamental or exotic plants**.
- The term Horticulture is derived from the Latin words **hortus (garden)** and **cultūra (cultivation)**.
- **L.H. Bailey** is considered the **Father of American Horticulture** and **M.H. Marigowda** is considered the **Father of Indian Horticulture**.
- **Classification:**
  - **Pomology:** Planting, harvesting, storing, processing, and marketing of fruit and nut crops.
  - **Olericulture:** Producing and marketing vegetables.
  - **Arboriculture:** Study, selection and care of individual trees, shrubs or other perennial woody plants.
  - **Ornamental Horticulture:** It has two subparts:
    - **Floriculture:** Production, use and marketing of **floral crops**.
    - **Landscape Horticulture:** Production and marketing of plants used to beautify the outdoor environment.

### What is the State of Horticulture Sector in India?

- India is the **2<sup>nd</sup> largest producer** of **fruits and vegetables**.
- The Indian horticulture sector contributes about **33%** to the agriculture **Gross Value Added (GVA)** making a very significant contribution to the Indian economy.
- India is currently producing about **320.48 million tons of horticulture produce** which has surpassed the **food grain production**, that too from much less area (25.66 million Ha. for horticulture against 127.6 M. ha. for food grains).
- Productivity of horticulture crops is much higher compared to productivity of food grains (12.49 tones/ha against 2.23 tones/ha.).
- Productivity of horticulture crops has increased by about **38.5%** between **2004-05 and 2021-22**.

Note:

- According to the **Food and Agricultural Organisation (FAO)**, India leads in the production of certain vegetables (ginger and okra) and fruits (banana, mangoes and papaya).
- In terms of export, **India is ranked 14th in vegetables and 23rd in fruits**, and its share in the **global horticultural market is a mere 1%**.
  - Around **15-20% of the fruits and vegetables in India are wasted** along the supply chain or at consumer level, contributing to **greenhouse gas emissions (GHGs)**.

### ***What are the Challenges Faced by the Horticulture Sector in India?***

- **Climate Change Vulnerability:**
  - **Erratic Weather Patterns:** Shifts in temperature, rainfall, and unpredictable weather events pose a significant challenge to horticultural crops, leading to **reduced yields and crop losses**.
  - **Extreme Events:** Increasing frequency and intensity of droughts, floods, and cyclones **disrupt horticultural production** and affect **crop quality**.
- **Water Management Issues:**
  - **Water Scarcity:** Limited access to irrigation water, coupled with **inefficient water management practices**, hampers the growth of horticultural crops, especially in water-stressed regions.
  - **Overexploitation of Water Resources:** Unsustainable groundwater extraction and inefficient irrigation techniques lead to depletion of water resources, exacerbating water scarcity issues.
- **Pests and Diseases:**
  - **Pesticide Resistance:** Increasing resistance of pests and diseases to conventional pesticides necessitates the development and **adoption of integrated pest management (IPM) practices**.
  - **Invasive Species:** Introduction and spread of **invasive pests (e.g. Desert locusts)** and diseases pose a threat to horticultural crops, requiring vigilant monitoring and management strategies.
- **Post-Harvest Losses and Infrastructure Constraints:**
  - **Inadequate Storage Facilities:** Lack of proper storage infrastructure results in post-harvest losses, reducing the shelf life and market value of horticultural produce.

- **Cold Chain and Transportation Challenges:** Insufficient cold chain facilities and inadequate transportation networks lead to spoilage and wastage of perishable horticultural commodities.

### ***How can the Horticulture Sector be Improved?***

- **Adoption of Climate-Smart Practices:**
  - Promote the **adoption of climate-resilient crop varieties** and sustainable farming practices to mitigate the adverse impacts of climate change on horticulture.
  - Invest in research and development of **drought-tolerant and heat-resistant crop varieties** suitable for changing climatic conditions.
- **Efficient Water Management:**
  - Encourage the use of **drip irrigation, rainwater harvesting**, and efficient water-saving technologies to optimise water use efficiency in horticulture.
  - Implement water management strategies such as **water pricing mechanisms** and watershed management initiatives to address water scarcity issues.
- **Integrated Pest and Disease Management:**
  - Promote the adoption of **Integrated Pest and Disease Management (IPM)** practices, emphasising biological control, cultural practices, and judicious use of pesticides.
  - **Strengthen surveillance** and early detection systems to monitor and manage pest and disease outbreaks effectively.
- **Investment in Infrastructure and Value Chain Development:**
  - Upgrade and expand **cold storage facilities, packhouses, and transportation networks** to **reduce post-harvest losses** and improve market access for horticultural farmers.
  - Facilitate **public-private partnerships** and investment in infrastructure development to enhance the efficiency and competitiveness of the horticultural value chain.
- **Capacity Building and Knowledge Transfer:**
  - Provide training and extension services to horticultural farmers on modern farming techniques, good agricultural practices, and market-oriented production.

Note:

- Foster collaboration between research institutions, universities, and agricultural extension agencies to disseminate best practices and technological innovations in horticulture.

### **What are the Government Initiatives to Improve Horticulture?**

#### ➤ **Mission for Integrated Development of Horticulture (MIDH):**

- **About:**
  - **MIDH** is a Centrally Sponsored Scheme for the holistic growth of the horticulture sector covering fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa and bamboo.
  - **Nodal Ministry:** The Ministry of Agriculture and Farmers Welfare is implementing MIDH (since 2014-15) under **Green Revolution - Krishonnati Yojana**.
  - **Funding Pattern:** 60%/40% contribution of Union and states (except states in North East and Himalayas)
    - For North Eastern States and Himalayan States, the Union government contributes 90%.

#### ○ **MIDH Sub-Schemes:**

- **National Horticulture Mission (NHM):** It is being implemented by State Horticulture Missions (SHM) in selected districts of 18 States and 6 Union Territories.
- **Horticulture Mission for North East & Himalayan States (HMNEH):** HMNEH is being implemented for the overall development of Horticulture in North East and Himalayan states.
- **Central Institute for Horticulture (CIH):** CIH was established at Medi Zip Hima, Nagaland in 2006-07 for providing technical backstopping through capacity building and training of farmers and Field functionaries in the North Eastern Region.

#### ➤ **Horticulture Cluster Development Programme:**

- **About:**
  - It is a **central sector programme** aimed at growing and developing identified horticulture clusters to make them globally competitive.
    - Horticulture cluster is a regional/geographical concentration of targeted horticulture crops.

- **Implementation:** By the **National Horticulture Board (NHB)** of the Ministry of Agriculture and Farmers' Welfare. The ministry has identified **55 horticulture clusters**.

#### ○ **Objectives:**

- The CDP aims to improve exports of targeted crops by about 20% and create cluster-specific brands to enhance the competitiveness of cluster crops.
- To address all major issues related to the Indian horticulture sector including pre-production, production, post-harvest management, logistics, marketing and branding.
- To leverage geographical specialisation and promote integrated and market-led development of horticulture clusters.
- To converge with other initiatives of the Government such as the **Agriculture Infrastructure Fund**.

## **Scheme for Sustainable & Inclusive Development of Natural Rubber Sector**

### **Why in News?**

The financial assistance for the Rubber sector under the '**Sustainable & Inclusive Development of Natural Rubber Sector (SIDNRS)**' has been increased by 23% from Rs 576.41 crore to Rs 708.69 crore for the next 2 financial years (2024-25 and 2025-26).

- The government has also announced plans to set up three nodal **Rubber Training Institutes** in the Northeast to promote the development of rubber-based industries in the region.
- It will also promote the formation of **Rubber Producers Societies (RPS)** for the empowerment of rubber growers.

### **What is Sustainable & Inclusive Development of Natural Rubber Sector (SIDNRS) Scheme?**

#### ➤ **About:**

- The SIDNRS scheme is an initiative by the Government of India to promote the sustainable and inclusive development of the natural rubber sector in India.

Note:



- The SIDNRS scheme was launched in the **FY 2017-18**.

- It is implemented by the **Rubber Board**, a statutory body under the **Ministry of Commerce and Industry**.

➤ **Objectives of the Scheme:**

- To improve the **productivity and quality of natural rubber** production.
- To promote the **adoption of sustainable rubber production** practices.
- To improve the **income and livelihoods of rubber growers**.
- To create employment opportunities in the rubber sector.
- To promote the development of the rubber-based industry.

➤ **Components of the scheme:**

- **Subsidy for Replanting Old and Uneconomic Rubber Trees:** Financial assistance provided to rubber growers for replanting old and uneconomic rubber trees with high-yielding and disease-resistant varieties.
- **Promotion of Intercropping:** Financial assistance provided to rubber growers for intercropping rubber with other crops such as pineapple, banana, and cocoa. Intercropping helps to improve soil fertility, conserve moisture, and provide additional income to rubber growers.
- **Support for Capacity Building:** Training and extension services provided to rubber growers on best practices in rubber production, processing, and marketing.
- **Development of Infrastructure:** Financial assistance provided for the development of infrastructure facilities such as roads, water harvesting structures, and processing units in rubber-growing areas.
- **Promotion of Rubber-Based Industries:** Financial assistance provided for the establishment and expansion of rubber-based industries such as tire manufacturing, footwear manufacturing, and latex processing units.

**What are the Key Facts Related to Natural Rubber?**

➤ **About Natural Rubber:**

- Natural rubber is a versatile and essential raw material derived from the latex or milky sap of

certain plant species, primarily the rubber tree, scientifically known as *Hevea brasiliensis*.

- This latex contains a complex mixture of organic compounds, with the primary component being a polymer called **polyisoprene**.

- It was introduced to tropical Asia and Africa by the British Government during the **later part of the 19<sup>th</sup> century**.

➤ **Growing Conditions:**

- Tropical climate with annual rainfall of 200 – 450 cm is suited for cultivation.
- It requires deep and lateritic fertile soil with an acidic pH of 4.5 to 6.0 and highly deficient in available phosphorus.
- Minimum and maximum temperature should range **from 25°C to 34°C** and **80% relative humidity** is ideal for cultivation.
  - Regions prone to heavy winds should be avoided.
    - Bright sunshine amounts to about 2000 hours per annum at the rate of 6 hours per day through all the months.

➤ **Rubber Production and Consumption:**

- India is currently the **world's 6th largest producer of natural rubber** while it also remains the second biggest consumer of the material globally (**after China**).
- **Thailand is the world's leading natural rubber producing country** (accounting for approximately 35% of global natural rubber production in 2022).
- In South Asia, India holds the **4th-largest position** following Thailand, Indonesia and Vietnam.
- About 40% of India's total natural rubber consumption is currently met through imports.

➤ **Rubber Distribution:**

- As of now, India has approximately 8.5 lakh hectares of rubber plantations.
- Major rubber producing states include: **Kerala, Tamil Nadu, Tripura, Assam**.
  - The lion's share of this rubber farming, nearly 5 lakh hectares, is concentrated in the southern states of Kerala and the Kanyakumari district of Tamil Nadu.
  - Additionally, Tripura contributes around 1 lakh hectares to the rubber production landscape

Note:

### ➤ Major Applications:

- **Automobiles:** Rubber is a key component in tire production due to its excellent grip and wear resistance. Used in seals, gaskets, hoses, and various components for vehicles.
  - The main use of natural rubber is in automobiles. **Nearly 65% of natural rubber** is consumed by the automobile industry.
- **Footwear:** Commonly used in shoe soles for its cushioning and slip-resistant properties.
- **Industrial Products:** Found in conveyor belts, hoses, and machinery components.
- **Medical Devices:** Used in gloves, syringe plungers, and medical equipment.
- **Consumer Goods:** Used in products like balloons, erasers, and household gloves.
- **Sporting Goods:** Found in items like tennis balls, golf balls, and protective gear.

#### What is the Rubber Board?

- The Rubber Board is a **statutory organisation** constituted under Section (4) of the **Rubber Act, 1947** and functions under the administrative control of the **Ministry of Commerce and Industry**.
- The Board is headed by a Chairman appointed by the Central Government and has 28 members representing various interests of the natural rubber industry.
  - The Board's **headquarters** is located at **Kottayam in Kerala**.
- The Board is responsible for the development of the rubber industry in the country by assisting and encouraging research, development, extension and training activities related to rubber.

## Promoting Local Fintech Players

### Why in News?

In a recent report presented to Parliament, the **Standing Committee on Communications and Information Technology** raised concerns regarding the dominance of **foreign-owned fintech apps in India's digital payments ecosystem**.

- Fintech is the use of digital platforms to provide financial services.

### What are the Key Highlights of the Report?

#### ➤ Emphasis on Effective Regulation:

- The Committee in its report emphasised that **digital payment apps must be effectively regulated** as the use of digital platforms to make payments in India is on the rise.
- It noted that it will be more 'feasible' for regulatory bodies such as the **Reserve Bank of India (RBI)** and the **National Payments Corporation of India (NPCI)** to **control local apps**, as compared with foreign apps, which operate in multiple jurisdictions.

#### ➤ Dominance of Foreign-Owned Fintech Companies:

- Fintech companies owned by foreign entities, such as PhonePe and Google Pay, dominate the Indian fintech sector, with substantial market shares.
  - **Market share:** PhonePe (46.91%) > Google Pay (36.39%) > BHIM UPI (0.22%) (till Oct-Nov 2023).

#### ➤ NPCI's Volume Cap Regulation:

- The Committee's recommendations are also largely in tune with the NPCI issuing a 30% volume cap on transactions facilitated using **Unified Payments Interface (UPI)**, back in November 2020.
  - The cap restricts individual third-party apps like PhonePe and Amazon Pay from **exceeding 30% of total UPI transactions over three months**.
  - Apps exceeding the cap were given a two-year phased compliance period (Dec 2022- Dec 2024).
- The purpose of the cap is to **mitigate risks and safeguard the UPI ecosystem during its expansion**.
- NPCI emphasized the importance of enhancing consumer outreach by banks and non-banks to foster UPI growth and achieve market equilibrium.

#### ➤ Fraud Concerns:

- The Committee highlights concerns about **fintech platforms being exploited for money laundering**, citing instances like the Abu Dhabi-based app Pyppl being administered by Chinese investment scamsters.
- The **fraud-to-sales (F2S) ratio has largely remained around 0.0015%** despite the rise in volume of the payment mode in the last five years.
  - The percentage of users affected by UPI frauds stood at 0.0189%.
  - A **F2S** is a volume-based percentage that measures the **number of fraudulent transactions** a business processes in a given month **compared to their monthly sales volume**.

Note:

### What is Fintech?

#### ➤ About:

- Fintech, or financial technology, is the use of digital platforms, software, and services to provide or **facilitate financial services**, such as payments, lending, insurance, wealth management, and more.

#### ➤ Importance:

- **Fintech is important for India because it can help in:**
  - Expanding the **access and inclusion of financial services** to the large **unbanked and underbanked population** in India, especially in rural and remote areas.
  - Enhancing the efficiency and convenience of financial transactions, by **reducing the cost, time, and friction** involved in traditional methods.
  - Fostering the innovation and growth of the Indian economy, by creating **new opportunities and markets for entrepreneurs**, startups, and consumers.

#### ➤ Segments and Trends of the Fintech Sector in India:

- Major segments under Fintech include **Payments, Digital Lending, InsurTech, WealthTech**.
  - Digital payments, which enable the transfer of money or value through online or mobile platforms, such as **UPI, wallets, cards, and QR codes**.
  - **Digital lending**, which provides loans or credit to individuals or businesses through online or mobile platforms, using alternative data sources and algorithms.
  - **Insurtech**, which applies technology to improve the distribution, delivery, and management of insurance products and services.
  - **Wealthtech**, which offers online or mobile platforms for investment, wealth management, and financial advisory services

- India is amongst the **fastest growing Fintech markets in the world**. It is home to over 7,000 fintech start-ups.

- The Indian FinTech industry's market size is USD 50 Bn in 2021 and is estimated at ~ USD 150 Bn by 2025.

#### ➤ Key Regulatory Bodies for Fintech in India:

- **Reserve Bank of India (RBI):**
  - Regulates banks, **NBFCs**, PSPs, and credit bureaus.

- Responsible for regulating India's money market and foreign exchange market.
- Oversees fintech sectors like Digital Payments, Digital Lending, and Digital or **neo-banks**.

#### ○ **Securities and Exchange Board of India (SEBI):**

- Regulates securities markets and intermediaries such as **stockbrokers and investment advisors**.
- Services like stockbroking and investment advisory fall under its jurisdiction.

#### ○ **Insurance Regulatory and Development Authority of India (IRDAI):**

- Regulates insurers, corporate agents, web aggregators for insurance, and third-party agents for insurance.
- Ensures compliance and integrity in the insurance sector.

### What are the Challenges Faced by Local Fintech Players?

#### ➤ Fierce Competition:

- The Indian fintech space is highly competitive, with numerous local and foreign players vying for market share. This intense competition can make it difficult for local players to stand out and **acquire a significant user base**.
  - Local players often **face competition from established global fintech giants** with vast resources and experience. These giants can leverage their brand recognition and technological prowess to attract customers and gain a competitive edge.

#### ➤ Regulatory Hurdles:

- The Indian regulatory landscape for fintech is **constantly evolving**, making it **challenging for local players to keep up with compliance requirements**.
  - Navigating these complexities can be time-consuming and resource-intensive, especially for smaller startups.
- Growing concerns around **data privacy and security** pose challenges for local players. They need to invest in **robust data security measures** and ensure compliance with data privacy regulations like the **Personal Data Protection to gain user trust**.

#### ➤ Financial Constraints:

- Compared to their foreign counterparts, local players often have **limited access to funding, hindering their ability to invest** in new technologies, expand their reach, and compete effectively.

Note:

- While instant payments like **UPI** have revolutionised the Indian market, their **minimal transaction fees can limit revenue generation for local players**, especially those solely relying on this segment.
  - McKinsey's report (2023) suggests that instant payments in India may contribute **less than 10% of future revenue growth**.
    - This projection is due to the **absence of fees charged for transactions** made through the UPI, while **UPI imposes minimal transaction fees**, it **still generates more revenue compared to fee-less cash transactions**.
  - Paperless transactions enhance security and accessibility to digital commerce, compared to costly cash management.
- **Technological Limitations:**
    - Rapid technological advancements in the global fintech landscape can be challenging for local players to keep pace with. They need to continuously invest in **research and development to stay competitive** and offer innovative solutions.
      - Lack of access to advanced technological infrastructure, such as robust internet connectivity in rural areas, can **hinder the reach and inclusivity** of local fintech solutions.
  - **Customer Trust and Behaviour:**
    - Establishing trust with users, **especially in rural areas**, can be challenging due to concerns about **digital literacy, data security, and potential scams**. Local players need to **invest in user education and build trust** through transparent practices.

## DIGITAL PAYMENT SYSTEMS IN INDIA

*A digital or electronic payment refers to transferring money from one payment account to another using a digital device or channel (bank transfers, mobile money, QR codes etc.)*

### Payment Systems by NPCI

National Payment Corporation of India (NPCI) is an umbrella entity for retail payment (Payment and Settlement Systems Act, 2007).

#### Immediate Payment Service (IMPS)


- ⌚ For retail customer
- ⌚ **Limit:** ₹1-5 lacs (Fees+GST)
- ⌚ 24/7 (Instant Settlement)
- ⌚ **Provider:** Banks, PPI, Mobile Wallet Companies

#### Rupay Card Payment Gateway (RuPay)

- ⌚ **Works in 3 Channels:** ATM, Point of Sale Device, Online Portals
- ⌚ Given free with PMJDY
- ⌚ Adopted in foreign countries as well (e.g. Mauritius)

#### Unified Payment Interface (UPI)

- ⌚ Technology for digital payment apps based on IMPS
- ⌚ Push and Pull Transaction
- ⌚ Also adopted by other countries like France, UAE, Singapore
- ⌚ **UPI-Lite+NFC:** For offline payment
- ⌚ **BHIM-UPI:** Money transfer app



### RBI's Centralised Payment System (CPS)

#### Real Time Gross Settlement (RTGS)


- ⌚ For high value transactions
- ⌚ **Lower Limit:** ₹2 Lacs (No Upper ceiling) (No fees)
- ⌚ 24/7 (Instant Settlement)
- ⌚ Provided by banking & non-banking entities

#### National Electronic Fund Transfer (NEFT)

- ⌚ For mid-range transactions
- ⌚ No limit imposed by RBI (No fees)
- ⌚ 24/7 (Settles net amount between banks @ 30 minutes intervals)
- ⌚ Provided by banking & non-banking entities

#### Lightweight Payment and Settlement System (LPSS)

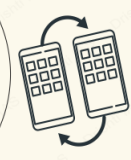
- ⌚ RBI's emergency alternative to NEFT/RTGS
- ⌚ Temporary, portable solution



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#### Digital Payment Regulatory Bodies

- ⌚ Digital Transactions Ombudsman
- ⌚ Board for Regulation & Supervision of Payment & Settlements Systems (BPSS)



Note:

## India's Industrial Sector

### Why in News?

Despite a swift **post-pandemic recovery**, India experiences 'premature deindustrialization', exacerbating inequality as benefits of rapid growth favour a small minority, widening existing disparities.

### What is Premature Deindustrialization?

- **Premature Deindustrialization** refers to a phenomenon wherein the growth of an economy's manufacturing sector begins to slow down prematurely in its path towards development.
  - This concept was popularized in 2015 by Turkish Economist **Dani Rodrik**.
- Economists typically view economic development as a **transition from agriculture to manufacturing and then to services**.
  - However, some economies may experience premature shifts to the services sector, **hindering manufacturing growth**.

### What is the Current Status of India's Industrial Sector?

- **Status:** Historically, India's **industrialization progress has been inadequate**, with manufacturing consistently contributing less than 20% to output and **employment**, except during **2003-2008** (Industrial growth during 2003–08 called as the 'Dream Run').
  - Despite **LPG Reforms in 1991** aiming for labour-intensive industrialization, this trend persisted.
- **Factors Responsible for Stagnant Industrialization in India:**
  - **Inadequate Research and Development (R&D) Investment:** It limits innovation and technological advancement in Indian industries, hampering their competitiveness globally.
  - **Corruption and Red Tape:** Rampant corruption and bureaucratic inefficiencies in obtaining permits, licences, and clearances create bottlenecks and **add to the cost of doing business**, deterring investment in the industrial sector.
  - **Informal Economy Dominance:** Competition from the **informal economy**, which operates outside regulatory frameworks and often evades taxes, creates an uneven playing field for formal industrial enterprises, impacting their growth prospects.

- **Skill Mismatch:** Discrepancies between the **skills demanded by industries and those possessed by the workforce** contribute to underemployment and inefficiencies in the industrial sector.
  - As per the **Skill India Report**, only **5% of the Indian population is formally skilled** compared to 68% in the UK, and 75% in Germany.
- **Supply Chain Vulnerabilities and Resilience:** Dependency on **imported raw materials makes Indian industries vulnerable to global supply chain disruptions**, requiring strategies to strengthen domestic supply chains and promote local manufacturing.
- **Approach to Boost Industrial Sector:** India needs an unconventional approach.
  - Prioritising **high-skill services**, particularly in **information technology (IT)**, to stimulate manufacturing growth.
  - This contradicts the traditional view that service growth relies on a strong manufacturing base.

### What are the Arguments in Favour of and Against the Service Sector Stimulating Manufacturing Growth?

- **Arguments in Favour:**
  - **Increased Consumer Demand:** A thriving **service sector** creates **jobs and disposable income**, leading to increased consumer demand for goods, potentially benefiting manufacturers.
    - For example, the demand for infrastructure development in the service sector (such as **transportation, communication, and IT**) can drive the demand for manufactured goods like **vehicles, machinery, and electronics**.
  - **Supply Chain Integration:** Services like **logistics, distribution, and supply chain management** play a crucial role in connecting manufacturers with consumers.
    - A robust service sector can enhance the efficiency of supply chains, reducing costs and improving the competitiveness of the manufacturing sector.
  - **Complementary Expertise:** Service industries can offer specialised expertise that manufacturers lack, such as **design and branding**.
    - Services can provide manufacturers with valuable data insights on **customer preferences, market trends, and supply chain performance**.

Note:

- This data can be used to optimise production, pricing, and marketing strategies.
- **Arguments Against:**
  - **Deepening Inequality:** The service sector **demands highly skilled workers**, which India struggles to supply adequately.
    - This creates a **stark divide between college graduates and others**, leading to greater inequality in earnings compared to manufacturing-led growth.
    - The **Gini index** of inequality for regular wages in the services sector was 44 compared to 35 for manufacturing, highlighting this disparity.
  - **Limited Direct Linkages:** While the service sector may create indirect demand for manufactured goods, the **direct linkages** between services and manufacturing are still limited.
  - **Neglect of Basic Industries:** Prioritising the service sector may lead to neglect of critical infrastructure for **basic small-scale industries** essential for manufacturing growth for countries like India, impeding long-term competitiveness and resilience.

### **What are the Recent Government Initiatives for the Growth of the Industrial Sector in India?**

- **Production-Linked Incentive (PLI)**
- **PM Gati Shakti- National Master Plan**
- **Bharatmala and Sagarmala Project**
- **Start-up India**
- **Make in India 2.0**
- **Atmanirbhar Bharat Campaign**
- **Special Economic Zones**

## **Global Pulses Conference**

### **Why in News?**

- The recent **Global Pulses Conference**, an annual gathering of pulses producers, processors, and traders, was recently jointly organised by the **Global Pulse Confederation** and the **National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED)**.
- India is aiming to **achieve self-sufficiency in pulses by 2027**, focusing on expanding cultivation and supplying new varieties of seeds.

### **What is the Global Pulses Conference?**

- The **Global Pulses Conference** is the industry's largest global event, bringing together key players from more than 50 countries.
  - Global Pulses Conference also known as **Global Pulse Confederation (GPC) Pulse Conference**.
- It represents all segments of the pulse industry value chain from growers, researchers, logistics suppliers, traders, exporters and importers to government bodies, multilateral organisations, processors, canners and consumers.
  - Its membership includes **24 national associations** and **over 500 private sector members**.
- It is based in **Dubai** and licensed by the **Dubai Multi Commodity Centre (DMCC)**.

### **What is the Status of Pulse Production in India?**

- **About:** India is the **largest producer (25% of global production), consumer (27% of world consumption) and importer (14%)** of pulses in the world.
  - Pulses account for around 20% of the area under food grains and contribute around 7-10% of the total foodgrains production in the country.
- **Top Pulses Producing States:** Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh and Karnataka.
- **Main Varieties:** Pulses are grown throughout the agricultural year.
  - **Rabi Pulses (contribute over 60%):** Gram (chickpea), Chana (Bengal gram), Masoor (lentil), Arhar (pigeon pea).
  - **Kharif Pulses:** Moong (green gram), Urad (black gram), Tur (arhar dal).
    - Rabi crops require **mild cold climate during sowing period**, during vegetative to pod development- cold climate and during maturity/ harvesting - warm climate.
    - Kharif pulse crops require a warm climate throughout their life from sowing to harvesting.
- **Major Export Destinations (2022-23):** Bangladesh, China, United Arab Emirates, USA and Nepal.
- **Significance:**
  - **Nutritional Powerhouses:** Pulses are rich in **protein, fibre, vitamins, and minerals**, providing essential nutrients for human diets.
  - **Soil Enrichment:** They fix **nitrogen** in the soil, improving fertility and reducing the need for synthetic fertilisers due to their **leguminous nature**.

Note:



- **Climate Smart Crop:** Pulses are drought-tolerant (water-efficient) crops and have a **lower carbon footprint** compared to many other crops, contributing to sustainability.
- **Crop Health and Rotation:** Including pulses in crop rotations enhances soil structure, reduces **disease cycles, and suppresses weeds**, promoting healthier agricultural systems.
- **Related Concern:**
  - **Yield Gap:** **Lower productivity** of pulses in India compared to other major producers, causing dependence on imports to meet demand.
    - Farmers experience **reduced earnings due to lower pulse yields per acre**, despite the higher **minimum support price (MSP)**.
  - **Lack of Focus:** Historical emphasis on rice and wheat cultivation led to insufficient R&D and infrastructure for pulses.
  - **High Import Dependence:** India needs to import certain pulses despite being the largest producer to meet its domestic demand, impacting self-sufficiency.

➤ **Related Government Initiatives:**

- **National Food Security Mission (NFSM)-Pulses**
- **Pradhan Mantri Annadata Aay SanraksHan Abhiyan (PM-AASHA) Scheme**
- **Price Stabilization Fund**
- **Dedicated Portal for Tur Dal Procurement:** Through which farmers can register and sell their produce to NAFED and National Cooperative Consumers' Federation of India Ltd. (NCCF) at a minimum support price or market price.

**What is NAFED?**

- **National Agricultural Cooperative Marketing Federation of India Ltd.** was established on the auspicious day of Gandhi Jayanti on **2<sup>nd</sup> October 1958**.
  - It is registered under the **Multi State Co-operative Societies Act**.
- It is an apex organisation of marketing cooperatives for agricultural produce in India.
  - It is currently one of the largest procurers of agricultural products like **onions, pulses, and oilseeds**.

Note:



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## Potential of Lakshadweep

### Why in News?

Lakshadweep, India's smallest Union Territory (UT), due to its proximity to international shipping routes, has the potential to become a logistics hub and a remarkable tourist destination of India.

### What are the Tourism and Logistics Potential of Lakshadweep?

#### ➤ Tourism:

- Lakshadweep's pristine beaches, **Coral Reefs**, and clear waters present a **remarkable tourist destination**.
- With proper infrastructure development and sustainable tourism practices, Lakshadweep **could become a premier tourist hotspot**.

#### ➤ Trade and Logistics:

- Situated near international shipping routes, Lakshadweep holds the potential to become a strategic logistics hub. Its proximity to **coastal Karnataka, particularly Mangaluru (a Major Port)**, offers opportunities for trade partnerships and cargo handling.
  - Many Islands of Lakshadweep are closer to Mangaluru. Many Lakshadweep residents rely on supplies from Mangaluru for their daily living. This **business link is centuries-old**.
- With the proposed development of port connectivity and infrastructure, Lakshadweep **could facilitate smoother trade operations**, benefiting both local businesses and the broader regional economy.

#### ➤ Regional Growth:

- The development initiatives for Lakshadweep, as outlined in the **Interim Budget 2024-25** proposal, not only benefit the islands but also contribute to regional growth, particularly for areas like Mangaluru.
  - The Union Finance Minister while presenting the Budget stated that projects for port connectivity, tourism infrastructure, and amenities will be taken on Indian islands including Lakshadweep to address zeal for domestic tourism.

- Enhanced connectivity, coupled with the establishment of cruise routes, could boost tourism and economic activities in both Lakshadweep and its neighbouring regions.

#### ➤ Ecological Significance:

- Lakshadweep's **designation as a restricted area** underscores its ecological significance. Suggestions to anchor cruise vessels at sea instead of building large infrastructure on the islands demonstrate a **commitment to sustainable practices**.

### What are the Key Facts About Lakshadweep?

#### ➤ About:

- India's **smallest Union Territory, Lakshadweep** is an archipelago consisting of 36 islands with an area of 32 sq km.
- It is a uni-district Union Territory and comprises 12 atolls, three reefs, five submerged banks, and ten inhabited islands.
- All Islands are 220 to 440 km away from the coastal city of Kochi in Kerala, in the emerald **Arabian Sea**.
- It is directly under the control of the Centre through an administrator.

#### ➤ There are three main groups of islands:

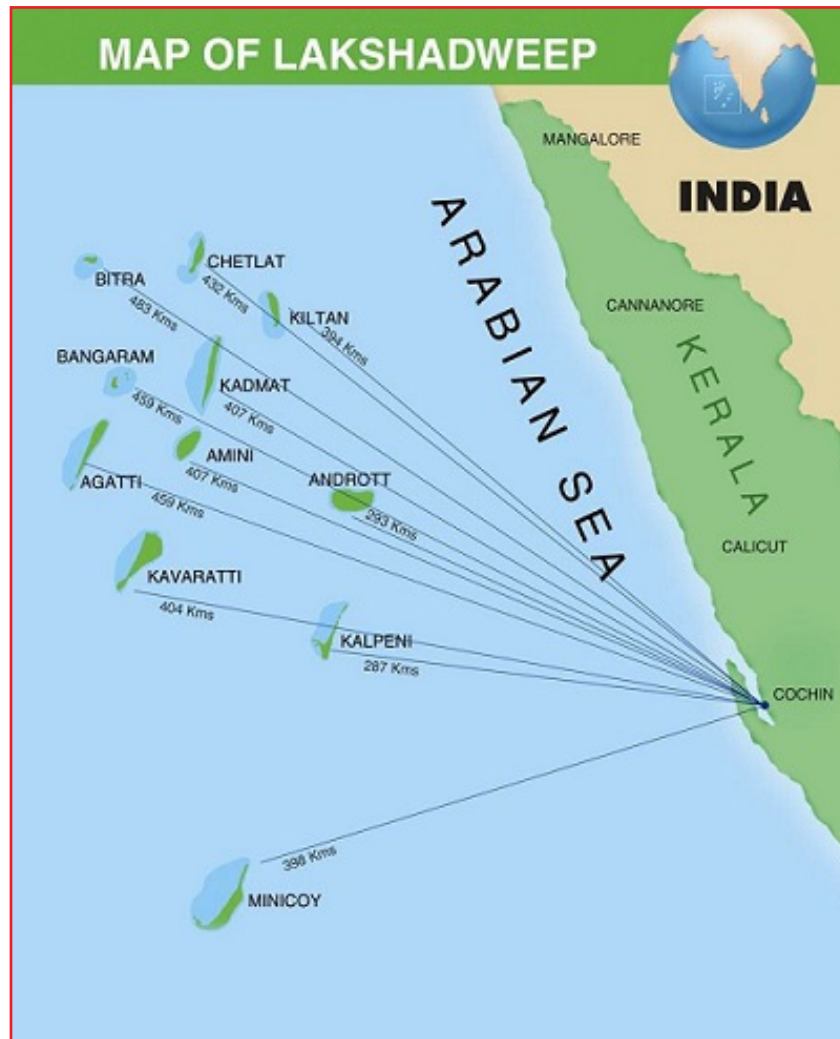
- Amindivi Islands (Northernmost Islands)
- Laccadive Islands
- Minicoy Island (southernmost island)
  - All are tiny islands of **Coral origin (Atoll) and are surrounded by fringing reefs**.
  - **The Capital is Kavaratti** and it is also the principal town of the Union Territory.

#### ➤ Organic Agricultural Area: The entire Lakshadweep group of islands has been declared as an **organic agricultural** area under the **Participatory Guarantee System (PGS) of India**.

#### ➤ Blue Flag Certification: The **Blue Flag Certification** has been accorded to two new beaches of Lakshadweep- **Minicoy Thundi Beach and Kadmat Beach**.

Note:





### What are the Concerns Related to Development in Lakshadweep?

#### ➤ Environmental Impact:

- The delicate ecosystem of the islands, including coral reefs and marine life, is vulnerable to damage from construction, pollution, and increased human activity.
- Sustainable development practices and stringent environmental regulations are necessary to mitigate these risks.

#### ➤ Socio-cultural Impact:

- The traditional way of life and cultural heritage of the indigenous communities in Lakshadweep could **be at risk with rapid development** and increased tourism.

#### ➤ Infrastructure Development:

- The lack of adequate infrastructure, including

transportation, accommodation, and healthcare facilities, poses a significant challenge to tourism and trade in Lakshadweep.

- Developing modern infrastructure while preserving the islands' natural beauty and unique character requires careful planning and investment.

#### ➤ Security Concerns:

- Lakshadweep's proximity to international shipping routes and its designation as a restricted area raise security concerns. Balancing security needs with the promotion of tourism and trade requires coordinated efforts between government agencies and stakeholders.

#### ➤ Community Engagement:

- Engaging local communities in the planning and implementation of development projects is crucial for their success and sustainability.

Note:

- Ensuring that the benefits of development are **equitably distributed among residents** and that their concerns are addressed is essential for fostering social cohesion and support for growth initiatives.

## Data Exclusivity in Trade Talks with EFTA

### Why in News?

India has recently taken a firm stance against the inclusion of 'data exclusivity' clauses in its ongoing discussions with the **European Free Trade Association (EFTA)** for a free trade agreement.

### What is Data Exclusivity under the Trade Agreement?

- **About:** Data exclusivity pertains to a clause in this draft agreement that puts a minimum **6-year embargo** (a legal prohibition on commerce) **on clinical trial data** generated during the testing and development of a drug.
  - Thus, manufacturers seeking to produce generic versions of drugs would either need to generate such data on their own, which is an expensive proposition, or wait out for the above specified period before selling their versions in India.
- **Impact on India's Generic Drug Industry:** India's generic drug industry has been pivotal in providing affordable alternatives to expensive medications globally.
  - However, the imposition of data exclusivity could severely hamper this industry's growth and **accessibility of affordable medicines**.
- **Historical Context and Rejection:** Demand for data exclusivity has consistently emerged since 2008 from both the **European Union (EU)** and the EFTA during trade negotiations with India.
  - Despite this, India has consistently refused these requests.

### What is the European Free Trade Association?

- **About:** The EFTA is the intergovernmental organisation of **Iceland, Liechtenstein, Norway and Switzerland (all four are not a part of the EU)**.
  - It was founded by the **Stockholm Convention in 1960**.
  - It aims to promote **free trade and economic integration** to the benefit of its four Member States and their trading partners around the globe.



- **India and EFTA:** The total value of commercial trade between the EFTA members and India exceeded **USD 6.1 billion in 2022**.
  - The biggest exports to India were pharmaceutical items (11.4%) and machinery (17.5%), while organic chemicals (27.5%) made up the majority of EFTA imports.

### What is a Free Trade Agreement?

- **About:** A free trade agreement (FTA) is a pact between two or more nations to reduce barriers to imports and exports among them.
  - Under this agreement, goods and services can be bought and sold across international borders with **little or no government tariffs, quotas, or prohibitions** to inhibit their exchange.
  - It is the opposite of trade protectionism or economic isolationism.
- **Historical Context:** It was first popularised in **1817 by economist David Ricardo** in his book, "On the Principles of Political Economy and Taxation."
  - He argued that free trade expands diversity and lowers the prices of goods available in a nation while better exploiting its homegrown resources, knowledge, and specialised skills.
- **FTA's of India:** So far, India has signed **13 Free Trade Agreements (FTAs)** with its trading partners including the Agreement on the South Asian Free Trade Area (SAFTA),
  - India-Singapore Comprehensive Economic Cooperation Agreement (CECA),
  - India-Japan CEPA, and India-Australia Economic Cooperation and Trade Agreement (ECTA).

Note:

## Development and Promotion of Jute Industry

### Why in News?

Recently, the Standing Committee on Labour, Textiles and Skill Development has presented the Fifty-Third Report on 'Development and Promotion of **Jute Industry**'.

### What are the Key Highlights of the Report?

- **Potential of Jute Industry:**
  - The Jute industry occupies an important place in the national economy of India. It is one of the **major industries in the eastern region**, particularly in West Bengal.
  - Jute, the 'golden fibre', meets all the standards for '**safe**' packaging in view of being a **natural, renewable, biodegradable** and eco-friendly product.
- **India as Major Share of Jute Production in the World:**
  - India is a major player in global jute production, **contributing 70% of the world's jute output**.
  - The Jute industry directly employs **approximately 3.7 lakh workers**, with around 90% of the production consumed domestically.
    - About 73% of jute industries are concentrated in West Bengal (**out of 108 composite jute mills 79 are in West Bengal**).
- **Production and Export Data (2022-23):**
  - In the fiscal year 2022-23, the production of jute goods reached a significant milestone, **totalling 1,246,500 metric tons (MT)**.
  - Exports of jute goods surged to 177,270 MT, constituting approximately 14% of the total production. This represents a remarkable 56% increase in exports **compared to figures recorded in 2019-20**.
    - The rise in exports can be attributed to several factors, including increased demand for **environmentally friendly and sustainable products worldwide**.
  - India imported 121.26 thousand MT of raw jute during the same period.
- The importation primarily stems from the preference for high-quality **jute from Bangladesh**, which is utilised in the manufacturing of value-added products.

- The top export markets for jute goods include a diverse array of countries such as the **USA, France, Ghana, the UK, the Netherlands, Germany, Belgium, Côte d'Ivoire, Australia, and Spain**.
- **Major Challenges Faced by Jute Industry:**
  - **High Rate of Procurement:** Mills face a high rate of procurement, acquiring raw jute at prices **exceeding their selling prices** post-processing.
    - This is exacerbated by a convoluted procurement process involving **middlemen or traders, increasing costs further**.
  - **Insufficient Raw Material:** Despite efforts to boost jute cultivation, India still struggles **with insufficient raw material supply**, exacerbating procurement issues and affecting production capacity.
  - **Obsolete Mills and Machinery:** The Jute Industry grapples with obsolete mills and machinery, necessitating **technological upgrades** to enhance efficiency and competitiveness.
  - **Fierce Competition From Synthetic Materials:** Jute contends with fierce competition from synthetic materials, which offer cheaper packaging solutions, impacting demand for jute products negatively.
    - Furthermore, decreased demand is witnessed due to the availability of alternative fibres like Mesta, diminishing the market for jute products.
  - **Labour issues and Infrastructure Hurdles:** Labor issues plague the industry, particularly in West Bengal, with frequent strikes, lockouts, and disputes disrupting operations and adding to instability.
    - Infrastructural bottlenecks **such as inadequate power supply, transportation challenges**, and limited access to capital impede the industry's sustainability efforts, hindering growth and modernization initiatives.

### What are the Key Facts About Jute?

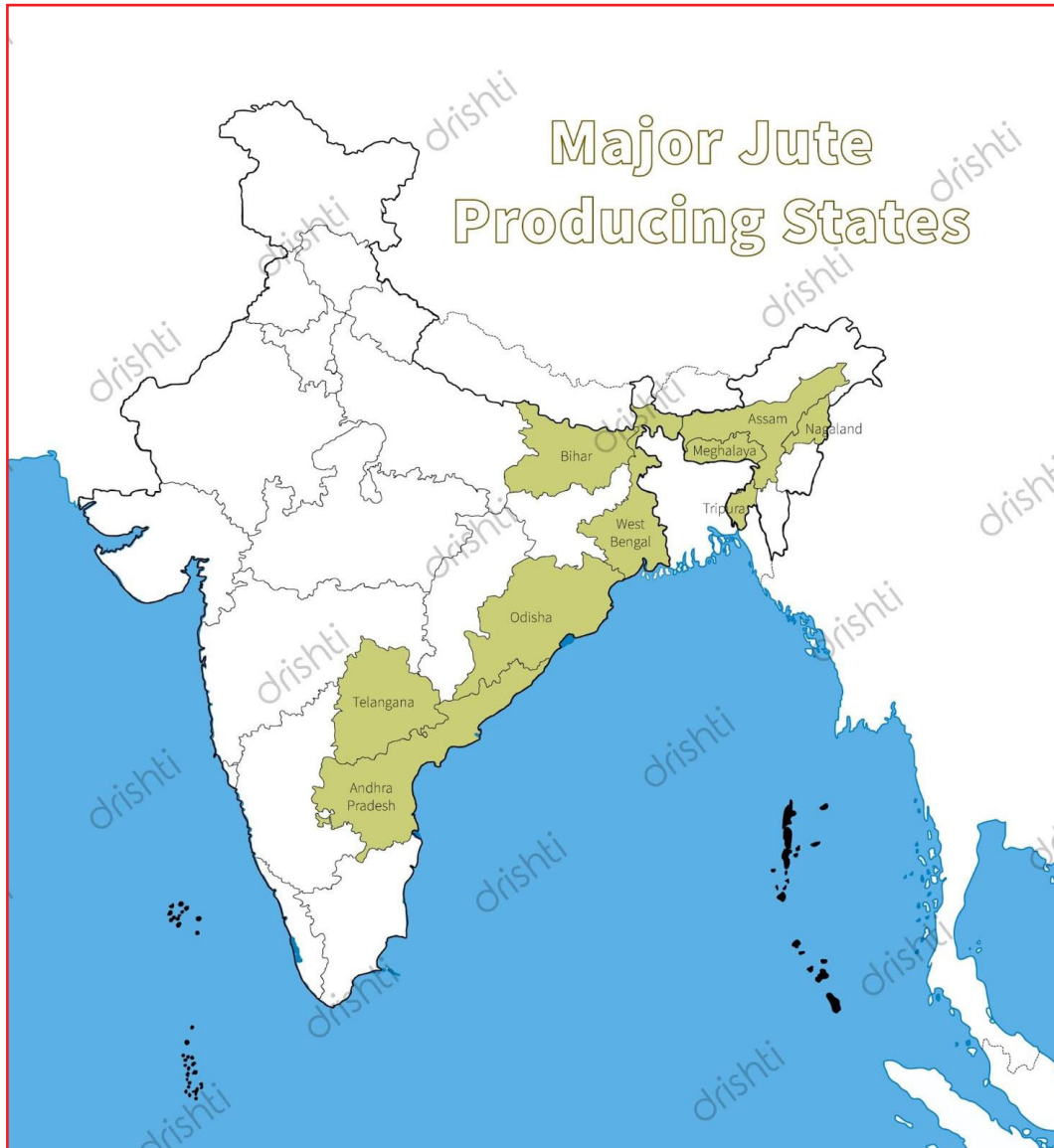
- **Conditions Required for Cultivation:**
  - **Temperature:** Between 25-35°C
  - **Rainfall:** Around 150-250 cm
  - **Soil Type:** Well drained alluvial soil.
- **Production:**
  - **India is the largest producer of jute** followed by Bangladesh and China.
    - However, in terms of acreage and trade, Bangladesh takes the lead accounting for three-fourths of the global jute exports in comparison to India's 7%.

Note:

- Jute crop cultivation is concentrated in three States, namely, **West Bengal, Assam and Bihar** accounting for 99% of the production.
- It is mainly concentrated in eastern India because of the rich alluvial soil of the Ganga-Brahmaputra delta.

➤ **Uses:**

- **It is known as the golden fibre.** It is used in making gunny bags, mats, ropes, yarn, carpets and other artefacts.



**What are the Key Recommendations of the Standing Committee?**

➤ **Modernising and Upgrading Technology:**

- There is a need to encourage **jute mills to invest in state-of-the-art machinery** and technology to enhance productivity and elevate product standards.

- Foster partnerships with **research institutions** to drive innovation and progress.

➤ **Efficient Raw Material Procurement:**

- Streamline the process of acquiring raw jute to minimise expenses. Promote contract farming initiatives and offer incentives to farmers to boost jute cultivation.

Note:



- **Enhanced Quality Control and Standardisation:**
  - Reinforce quality control protocols to maintain uniform excellence in jute products. Establish and enforce stringent standards for jute goods.
- **Skill Enhancement and Training:**
  - Empower jute workers with comprehensive training programs to refine their expertise.
  - Place emphasis on honing skills in weaving, dyeing, and value-added processes.
- **Market Expansion:**
  - There is a need to pioneer exploration into untapped global markets for jute products.
  - Promote jute-based handicrafts and lifestyle commodities to broaden market reach.

- **Research and Development Promotion:**
  - Allocate **resources for research endeavours** focused on advancing jute-related innovations.
  - Encourage collaborative efforts between industry players and research entities.
- **Promoting Jute Products:**
  - Launch awareness campaigns spotlighting the eco-friendly attributes and sustainability of jute.
  - Educate consumers on the merits of choosing jute products.
- **Policy Advocacy:**
  - Formulate policies that incentivize jute cultivation and value addition.
  - Extend financial assistance to jute mills for the adoption of cutting-edge technologies.

### Jute Value Chain

The jute value chain *viz* the farm to fibre (jute growing), the fibre to yarn (spinning), the yarn to grey fabric (weaving), and the grey fabric to finished fabric (processing) is reflected below:



### What are the Government Schemes Related to Jute Industry?

- **Export Market Development Assistance (EMDA) Scheme:**
  - The EMDA program, initiated **by the National Jute Board (NJB)**, encourages manufacturers and exporters of jute products to **participate in international fairs worldwide**. It aims to **promote the export of lifestyle and other Jute Diversified Products (JDPs)**.
- **Jute Packaging Materials (Compulsory Use in Packing Commodities) Act 1987:**
  - The act was enacted to ensure the mandatory use of jute packaging material in the supply and distribution of certain commodities.
    - The Cabinet Committee on Economic Affairs has extended mandatory packaging of **100% food grains and 20% sugar** in diversified jute bags for the Jute Year 2023-24.

Note:

- **Jute Geotextiles (JGT):**
  - The **Cabinet Committee on Economic Affairs (CCEA)** has approved a **Technical Textiles Mission** which includes Jute **Geo-Textiles**.
    - JGT is one of the most important **diversified jute products**. It can be applied in many fields like civil engineering, soil erosion control, road pavement construction and protection of river banks.
- **Minimum Support Price for Jute:**
  - **Jute Corporation of India (JCI)** is the Price Support Agency of the Govt. of India for jute, to protect the interest of the Jute Growers through procurement of Raw Jute under the **MSP** fixed by the government from time to time and also to stabilise the raw jute market for the benefit of the jute farmers and the jute economy as a whole.
- **Golden Fibre Revolution and Technology Mission on Jute and Mesta:**
  - They are two of the government initiatives to boost jute production in India.
  - Due to its high cost, it is losing the market to synthetic fibres and packing materials, particularly nylon.
- **Jute SMART:**
  - It is an **e-government initiative** which was launched in December 2016 to promote transparency in the jute sector.
  - It provides an integrated platform for procurement of sacking by Government agencies.

#### Some of Other Allied Fibers

- **Sunhemp:** Sunhemp is a versatile leguminous crop with various applications. It is well-suited for producing speciality paper, ropes, twines, fishing nets, and canvas. Additionally, the army uses sunhemp to create camouflage nets for defence purposes.
- **Ramie:** Ramie is another natural fibre with significant potential. It is known for its **strength, durability, and resistance to mildew and bacteria**. Ramie fibres are used in textiles, papermaking, and industrial applications.
- **Sisal:** Sisal fibres come from the **agave plant**. They are strong, durable, and commonly used for making ropes, twines, and other cordage products.
- **Flax:** Flax fibres are derived from the flax plant. They are used to make linen textiles, paper, and other products.

- **Nettle Fiber:** Nettle fibres are obtained from the stinging nettle plant. They have been used for centuries to create textiles.

## India's Renewable Energy Vision: IREDA

### Why in News?

Recently, the **Indian Renewable Energy Development Agency (IREDA)** addressed an international webinar organised by the **World Bank (WB)**, shedding light on **India's Renewable Energy** landscape and its ambitious targets to combat **Climate Change** while ensuring energy security.

### What are the Key Highlights of the IREDA's Address at Webinar?

- **Huge Invests to Meet Climate Goals:**
  - India's **Nationally Determined Contributions (NDCs)**, or its self-defined climate pledges under the **Paris Agreement**, for 2030 would require Rs 30 lakh crore of investments.
    - According to India's NDC goals, India pledges to reduce emissions intensity of its **GDP (Gross Domestic Product)** by 45% by 2030, from 2005 level and achieve about **50% cumulative electric power installed capacity from non-fossil fuel-based energy resources** by 2030.
  - The investment is required in **manufacturing and capacity build-up for solar power**, electrolysers, wind and battery space, power transmission, **Green Hydrogen**, hydro power and waste-to-energy sectors.
- **Elevation of Rooftop Solar Sector:**
  - IREDA highlighted the significance of the **"PM Surya Ghar Muft Bijli Yojana,"** a rooftop solar scheme.
  - This visionary project, backed by an investment exceeding Rs. 75,000 crores, aims to solarize 1 crore households by providing up to 300 units of free electricity every month.
    - The scheme not only provides substantial benefits but also fosters awareness about renewable energy, contributing to India's ambitious goal of achieving **Net-Zero emissions by 2070** and Energy Independence by 2047.

Note:

- **Increase in Energy Demand:**
  - India's energy demand would increase significantly **due to the ambitious plans of the government** for the country and maximum energy demand would be met through renewable sources.
  - Approximately 90% of this **demand is expected to be met through renewable sources.**
    - Until sufficient energy storage for renewable energy is achieved, thermal energy will also be developed alongside.

### What is IREDA?

- IREDA is a **mini ratna company** under the Ministry of New and Renewable Energy (MNRE).
- It was set up in 1987 as a specialised **non-banking finance agency** for the renewable energy sector.
- IREDA plays a key role in renewable energy project financing which gives confidence to the financial institutions/banks to lend in the sector.

### What are the Government Initiatives Related to Renewable Energy?

- **Renewable Purchase Obligations (RPO)**
- **PM-KUSUM scheme**
- **PLI scheme for Solar PV manufacturing**
- **Allowing up to 100% FDI under the automatic route for renewable energy.**
- **Atal Jyoti Yojana**
- **International Solar Alliance**
- **One Sun, One World, One Grid (OSOWOG)**
- **National Solar Mission**
- **Suryamitra Skill Development Programme**
- **Pradhan Mantri Suryodaya Yojana**
- **'Must-run' status for RE Assets:**
  - A 'must run' status means that the concerned power plant has to **supply electricity to the grid under all conditions.**

## Bilateral Investment Treaties

### Why in News?

While presenting the interim **Union budget 2024-25**, the Indian Finance Minister stated that India will be negotiating **Bilateral Investment Treaties (BITs)** with its trade partners to boost the inflow of **Foreign Direct Investment (FDI)**.

- This announcement comes at a time when India's bilateral treaties have dried up, more so, since the adoption of the **Model BIT in 2016**.

### What are the Bilateral Investment Treaties (BITs)?

- **About:**
  - BITs are **reciprocal agreements between two countries** to promote and protect foreign private investments in **each other's territories**.
  - In the mid-'90s, the Indian government initiated BITs to offer **favourable conditions and treaty-based protection** to foreign investors and investments.
- **Minimum Guarantees:**
  - BITs establish minimum guarantees between the two countries regarding the **treatment of foreign investments**, such as,
    - **National treatment** (treating foreign investors at par with domestic companies)
    - **Fair and equitable treatment** (in accordance with international law)
    - Protection from expropriation (limiting each country's ability to take over foreign investments in its territory).
- **Arbitration under BITs:**
  - BITs generally provide a mechanism for settling disputes between **investors and the country of investment**.
  - The most preferred mode of settling such disputes is arbitration, where parties agree to have their dispute decided by a **neutral person (the arbitrator) instead of going to court**.
- **History:**
  - The first BIT signed by India was with the UK in 1994.
  - The BIT regime gained attention in the **year 2010 with the settlement of the first-ever investor treaty claim** filed against India.
  - In 2011, India suffered its first adverse award in a dispute arising out of the **Australia-India BIT (White Industries v Republic of India)** where the Indian government was ordered to pay USD 4.1 million by the **International Chamber of Commerce**.
  - By 2015, India faced 17 known BIT claims, notably including one with **Cairn Energy Plc**, a British oil and gas company, resulting in a USD 1.2 billion award against the Indian government.

Note:

- Given the burden that was being levied on the public exchequer, the government was compelled to **revisit the 1993 BIT model**. This led to the adoption of the 2016 model BIT resulting in the government terminating **68 of the 74 treaties it had executed until 2015** with a request to renegotiate terms based on the revised text.
  - The adoption of the 2016 BIT model was seen more as a knee-jerk protectionist measure rather than a nuanced and calibrated approach to encouraging foreign investment.

### **What have been the Challenges with the 2016 Model BIT?**

- **Narrowing Definition of Investment:**
  - Model BIT narrowed the definition of investment that needed to qualify for BIT protection. Model BIT indicates that India proposes a narrow 'enterprise-based' definition for investment, whereby **only direct investments are protected under the treaty**.
  - Besides this, the definition of investment in the Model BIT also contains a negative list, which precludes portfolio investments, interest in debt-securities, intangible rights, etc. **from the definition of investment**.
  - Thus, the new definition does not take into account the increased scope of foreign investments in the modern era of globalisation and liberalisation.
- **Exhaustion of Domestic Remedy Clause:**
  - Model BIT contains a **clause mandating exhaustion of domestic remedy** prior to initiating international arbitration proceedings.
  - The 2016 model BIT provided that an investor must exhaust local remedies before taking recourse to international arbitration.
    - This surely does little to increase confidence in foreign investors.
- **Impact on FDI:**
  - The difficulties in renegotiating terms with other countries have also contributed to challenges in attracting FDI.
  - FDI equity inflows in India declined 24% to USD 20.48 billion in April-September 2023.
    - The total FDI — which includes equity inflows, reinvested earnings and other capital — contracted 15.5% to USD 32.9 billion during the period under review against USD 38.94 billion in April-June 2022.

### ➤ **Wide Discretionary Powers to Host State:**

- The treaty included a clause ensuring **fair treatment of investments**, prohibiting both parties from implementing measures that are **clearly abusive or violate due process**.
- However, what is the **yardstick for assessment of violation of "due process"** is not defined.
- Further, Model BIT states that if the Host State decides that the alleged breach under the BIT is a subject matter of taxation at any point in time, the decision of the Host State therein shall be non-justiciable and exempt from review by an arbitral tribunal.
  - The Model BIT simplistically assumes that a foreign investor shall have complete confidence in domestic judicial interpretations and mechanisms.
  - This could potentially give wide discretion to the Host State to unilaterally exclude any dispute from the jurisdiction of a tribunal, merely by asserting that the conduct in question relates to taxation.

## **RBI Imposes Restrictions on Paytm Payments Bank**

### **Why in News?**

Recently, the **Reserve Bank of India (RBI)** has imposed strict restrictions on **Paytm Payments Bank Ltd (PPBL)**. This move comes after an audit report highlighted persistent non-compliances and supervisory concerns within the bank.

### **What are the Key Restrictions Imposed on PPBL?**

- **Background:** Section 35A of the **Banking Regulation Act, 1949**, confers authority upon the RBI to issue directives to banks and undertake necessary actions to prevent the operations of any banking entity from being conducted in a manner detrimental to the interests of depositors or prejudicial to the bank's own interests.
  - In this case, sources indicate concerns over **dubious transactions** involving significant sums of money between Paytm and its associated banking entity prompted the RBI to take action against the business.

Note:



- PPBL reportedly had **numerous non-compliant accounts lacking proper KYC verification**, with thousands of instances where a single **PAN** was used to open multiple accounts.
- Additionally, transactions exceeding regulatory limits in minimum KYC prepaid instruments raised red flags about potential **money laundering activities**.
- **Key Restrictions:**
  - **Deposit Bar:** PPBL is barred from accepting further deposits, top-ups, or credit transactions into its accounts or wallets from **29th February, 2024**.
    - This also applies to its prepaid instruments for **FASTags** and **National Common Mobility Cards (NCMC)** cards.
  - **Service Limitations:** The ban extends to banking services such as **Aadhaar Enabled Payment System**, Immediate Payment Service, bill payments, and UPI transactions.
    - The bank must settle all pipeline and nodal account transactions by 29th March, with no further transactions permitted thereafter.
  - **Closure of Nodal Accounts:** PPBL is directed to terminate nodal accounts of its parent company and Paytm Payments Services before 29th February, 2024.

**Note:**

Nodal accounts serve as specialized bank accounts established by businesses, acting as financial intermediaries.

- These accounts are designed to hold funds collected from participating banks on behalf of consumers, with the primary purpose of later transferring these funds to specific merchants.

**What are Payment Banks?**

- **About:**
  - Payment banks are a specialized type of bank introduced by the **RBI** in 2014. They are designed to promote financial inclusion by offering basic banking services to the unbanked and underbanked population.
  - They were introduced on the recommendations of the **Nachiket Mor committee** set up by the RBI to examine financial services for small businesses and low-income households.

- **Example:** Airtel Payments Bank, **India Post Payments Bank**, etc.
- **Licensing Requirements:** They are licenced under **Section 22 (1) of the Banking Regulation Act, 1949**
  - They fall under the differentiated bank license category of RBI as they are restricted from offering the full range of services provided by commercial banks.
    - RBI grants two types of banking licenses: **universal bank licenses and differentiated bank licenses**.
- **Features:**
  - **Reserve Requirements:** They are required to maintain the **Cash Reserve Ratio (CRR)** and **Statutory Liquidity Ratio (SLR)**.
    - Minimum **75%** of its demand deposit balances in **Statutory Liquidity Ratio** eligible G-securities/ T-bills with maturity up to one year.
    - Maximum **25%** in current and time/ fixed deposits with other scheduled commercial banks apart from maintaining CRR requirements
  - **Minimum Paid-up Capital:** The **minimum paid-up equity capital** has been fixed at **Rs 100 crore**.
    - The promoter's minimum initial contribution to the paid-up equity capital shall be at least **40% for the first 5 years**.
  - **Prohibited Services:** They are prohibited from conducting lending operations or issuing credit cards.
    - Therefore, they are also exempt from **priority sector lending regulations** that typically apply to traditional banks.
  - **Rural Outreach Requirements:** At least 25% of a Payments Bank's physical access points have to be in rural centers.
- **Major Activities Performed by Payment Banks:**
  - Accepting deposits from individuals and small businesses, up to a certain limit (currently set at Rs 2 lakh per account).
  - Providing remittance services, and facilitating domestic money transfers.
  - Issuing **ATM/debit cards**, prepaid payment instruments, and other electronic payment methods.
  - Offering internet banking services, including online fund transfers and bill payments.

Note:

System	Access Deposit	Advance Loan	Make Payment
Commercial banks like SBI, PNB	YES	YES	YES
Payments network operators(Master card, VISA)	NO	NO	YES
Payments bank	YES	NO	YES

## Farmers Protest 2.0 and MSP

### Why in News?

Farmers from Punjab, Haryana, and Uttar Pradesh are marching towards Delhi in the 'Delhi Chalو' protest, demanding legal guarantees for the [Minimum Support Price \(MSP\)](#).

- In 2020, farmers protested against three farm laws passed by the government, at Delhi borders, leading to their repeal in 2021.
- These laws were -- [The Farmers' Produce Trade and Commerce \(Promotion and Facilitation\) Act](#), [The Farmers \(Empowerment and Protection\) Agreement of Price Assurance and Farm Services Act](#), and [The Essential Commodities \(Amendment\) Act](#).

### What are the Key Demands of Farmers?

- The headline demand in the farmers' 12-point agenda is for a law to guarantee Minimum Support Price (MSP) for all crops, and the determination of crop prices in accordance with the [Dr M S Swaminathan Commission's report](#).
  - The Swaminathan Commission Report states that the government should raise the MSP to at least 50% more than the weighted average cost of production. It is also known as the **C2+ 50% formula**.
  - It includes the **imputed cost of capital** and the rent on the land (called 'C2') to **give farmers 50% returns**.
    - **Imputed cost** is used to account for the opportunity cost of using resources like land, labour, and capital.

- The **imputed cost of capital** accounts for the interest or returns that could have been earned if the capital invested in farming were instead invested elsewhere.

### ➤ The other demands are:

- Full debt waiver for farmers and labourers;
- Implementation of the [Land Acquisition Act of 2013, with provisions for written consent from farmers before acquisition, and compensation at four times the collector rate](#).
- A **collector rate** is the minimum value at which a property can be registered when buying or selling it. They serve as a reference point to **prevent the undervaluation of properties and tax evasion**.
  - Punishment for the perpetrators of the October 2021 Lakhimpur Kheri killings;
  - India should withdraw from the [World Trade Organization \(WTO\)](#) and freeze all [free trade agreements \(FTAs\)](#).
  - Pensions for farmers and farm labourers.
  - Compensation for farmers who died during the Delhi protest in 2020, including a job for one family member.
  - [The Electricity Amendment Bill 2020](#) should be scrapped.
  - 200 (instead of 100) days' employment under [MGNREGA](#) per year, the daily wage of Rs 700, and the scheme should be linked with farming;
  - Strict penalties and fines on companies producing fake seeds, pesticides, fertilisers; improvements in seed quality;

Note:

- National commission for spices such as chilli and turmeric.
- Ensure **the rights of indigenous peoples** over water, forests, and land.

### **What is the Government's Response?**

- In November 2021, after repealing the three farm laws, the Indian Government announced to form a committee on MSP. Its purpose was to discuss MSP, promote **zero-budget natural farming**, and decide on cropping patterns. This committee was formed in July 2022 and hasn't yet produced any report.
- During a recent meeting between Cabinet ministers and farmer union leaders the government offered to create a new **committee with representatives from agriculture, rural, and animal husbandry ministries**.
- This committee would address farmers' demand for MSP for all crops. The government promised that this new committee would meet regularly and work within a set timeframe.

## **What are the Challenges with the Legalisation of MSP?**

- **Forced Procurement:**
  - Mandating the government to procure all produce at **MSP could lead to overproduction**, causing wastage of resources and storage problems.
  - It might also **distort cropping patterns as farmers might prioritise crops** with MSP over others, affecting biodiversity and soil health.
  - If the government has to buy the produce because there are no buyers offering the MSP, it doesn't have the **resources to store and sell large amounts of it**.
- **Discrimination Among Farmers:**
  - Such a law could create disparities between farmers growing supported crops and those growing others.
  - Farmers growing unsupported crops **may face disadvantages in terms of market access** and government support.
- **Pressure From Traders:**
  - During peak harvest times, prices for agricultural produce are typically at their lowest, benefiting **private traders who buy at these times**. Because of this, private traders resist any legal assurance of MSP.

### **Financial Burden:**

- The government might face **financial strain due to the obligation** to procure all crops at MSP, leading to payment arrears and fiscal challenges.

### **Societal Implications:**

- Distorted cropping patterns and **excessive procurement could have broader societal implications**, affecting food security, environmental sustainability, and overall economic stability

### **What Initiatives can be Taken to Protect Income of Farmers instead of Legalising MSP?**

- Experts suggest **giving money directly to farmers instead of just relying on MSP**. This way, farmers get a stable income no matter how the market is.
  - It's about fixing the bigger problem of farmers not having enough money, rather than just guaranteeing prices for certain crops.
- Implementing **direct income support could involve various strategies**, such as:
  - **Direct Cash Transfers:** Providing direct cash payments to farmers to supplement their income and alleviate financial stress.
    - The Government can think of **Expanding the PM KISAN** Scheme by rolling in the entire price support package and fertiliser subsidy and into much higher PM-KISAN payments to farmers in a revenue-neutral manner.
    - This scheme currently provides farmers with Rs 6000 per year in direct cash payments.
  - **Insurance Schemes:**
    - Introducing **insurance schemes that compensate farmers** for income losses due to factors like crop failure, price volatility, or adverse weather conditions.
    - Offering subsidies or grants to support agricultural inputs, equipment, technology adoption, and diversification into higher-value crops or alternative livelihoods.
  - **Price-Difference Payment Option:** The government can also consider paying the price difference between the MSP and the rate at which the farmers sell.
    - Haryana and Madhya Pradesh have tried this option under a scheme called **Bhavantar Bharpai Yojana** (price-difference compensation scheme).

Note:

- Under the MP's 'Bhavantar Bhugtan Yojana', the state government paid farmers the difference between MSP for crops and their average market rates. Farmers got money if they had to sell their produce in the open market below MSP.

### What are the Concerns of Farmers Related to WTO and FTAs?

- **Market Access:**
  - Farmers are concerned that the FTAs and WTO regulations lead to increased competition from **cheaper agricultural imports**, which can undercut domestic prices and harm local producers.
  - Farmers perceive these agreements as favouring multinational corporations and **large-scale agribusinesses over small and medium-sized farmers**.
- **Imported Goods:**
  - These agreements lead to the **influx of subsidised agricultural products** from other countries, which can flood the domestic market and depress prices for locally produced crops.
  - This can make it difficult for **Indian farmers to compete and sustain their livelihoods**.
- **Impact on Farming Practices:**
  - International trade agreements also **impose regulations or standards on agricultural practices** that Indian farmers find burdensome or incompatible with their traditional farming methods.
  - This could include requirements related to pesticide use, **genetically modified organisms (GMOs)**, or environmental standards.
- **Sovereignty and Autonomy:**
  - Some farmers view withdrawal from WTO and freezing of free trade agreements as a way to regain sovereignty and control over **India's agricultural policies**.
  - They argue that such agreements limit the government's ability to implement policies that **prioritise the interests of small-scale farmers** and ensure food security for the population.

### What is the Current State of MSP and Farmers Demand?

- **Current MSP vs. Farmer Demands:**
  - The MSP for wheat set by the government for the

Rabi Marketing Season 2024-25 is Rs 2,275 per quintal, which is higher than the **cost demanded by farmers, i.e., C2 plus 50%**.

- However, the MSP is based on the **formula A2+FL**, which includes only paid-out costs incurred by farmers, **resulting in a lower MSP compared to C2 plus 50%**.
- **CACP Recommendations and Methodology:**
  - The **Commission for Agricultural Costs & Prices (CACP)** recommends MSP based on the **A2+FL formula**, which considers **only paid-out costs and imputed value of family labour**.
    - This is different from **the C2 formula**, which includes **additional factors** like rental value of owned land and interest on fixed capital.
- **Return over Cost of Production:**
  - For wheat in Punjab, the cost of production (C2) is Rs 1,503 per quintal, and the Minimum Support Price (MSP) is Rs 2,275 per quintal.
    - This means farmers receive Rs 772 per quintal more than the cost of production, which is a return of 51.36% over C2.
  - Similarly, for paddy, the return for Punjab farmers over C2 was 49%, and it was 152% over A2+FL

### Why are Farmers Protesting Across the Globe?

- **South America:**
  - Farmers are protesting due to factors such as **unfavourable exchange rates for exports, high taxes**, economic downturns, and natural disasters like droughts, which damage crops and reduce agricultural output.
    - In Brazil, protests are against unfair competition from genetically modified maize.
    - In Venezuela, farmers are seeking access to subsidised diesel.
    - Colombian rice growers are demanding higher prices.
- **Europe:**
  - Farmers are protesting against low crop prices, rising costs, low-cost imports, and strict environmental regulations imposed by the **European Union**.
    - In France, protests are against low-cost imports, insufficient subsidies, and high production costs.

Note:

➤ **North and Central America:**

- Mexican farmers protest poor prices for corn and wheat, while Costa Rican farmers seek more government assistance for an industry burdened by debt.
- In Mexico's Chihuahua province, protests occurred over plans to export limited water supplies to the United States.

➤ **Asia:**

- Indian farmers are protesting for guaranteed crop prices, income doubling, and loan waivers.

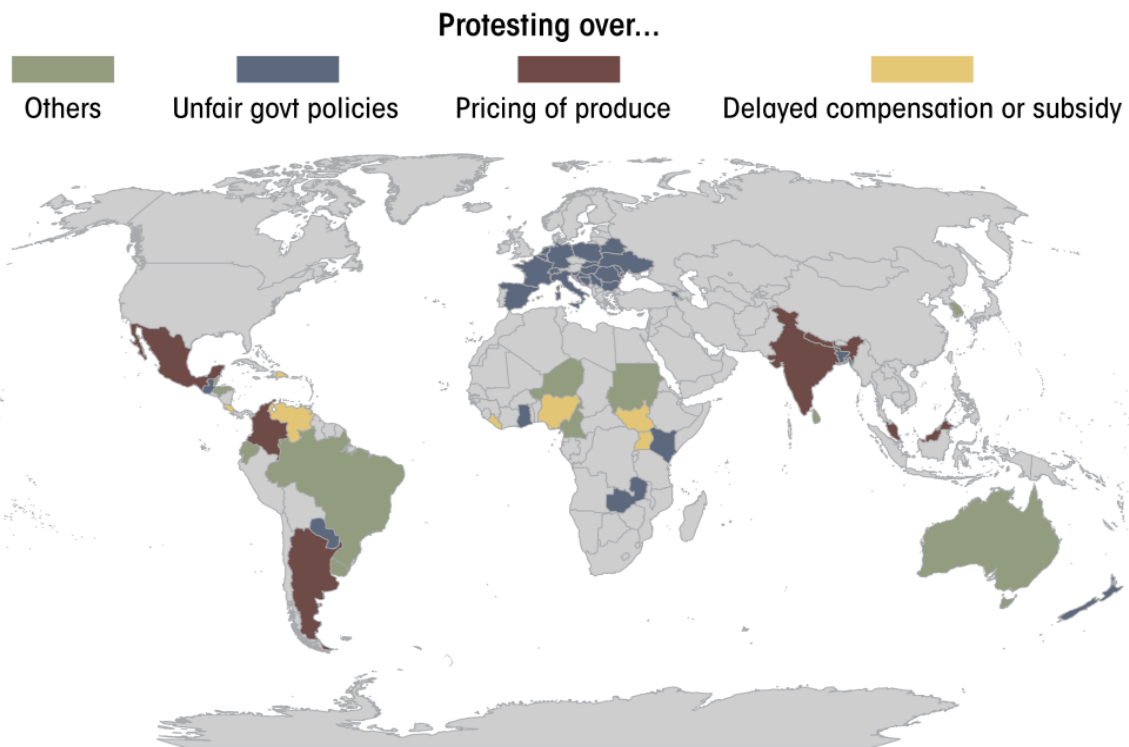
- In Nepal, protests are due to unfair prices for imported Indian vegetables.
- Malaysian and Nepali farmers are protesting low rice and sugarcane prices, respectively.

➤ **Oceania:**

- New Zealand farmers protest against government regulations affecting food producers, while Australian farmers oppose high-voltage power lines passing through their land.

## FARM PROTESTS GLOBALLY

Since 2023, at least 65 countries have reported protests organised by agricultural workers with reasons ranging from minimum support price like in India, to unfair governmental policies — like in Europe — to outright displacement or eviction of farmers as seen in Benin or Sudan in Africa



Source: Media reports

**Down To Earth**

### What is the Minimum Support Price?

➤ **About:**

- MSP is the guaranteed amount paid to farmers when the government buys their produce.

Note:



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- MSP is based on the recommendations of the **Commission for Agricultural Costs and Prices (CACP)**, which considers various factors such as cost of production, demand and supply, market price trends, inter-crop price parity, etc.
  - CACP is an attached office of the Ministry of Agriculture and Farmers Welfare. It came into existence in January 1965.
- The **Cabinet Committee on Economic Affairs (CCEA)** chaired by the Prime Minister of India takes the final decision (approve) on the level of MSPs.
- The MSP is aimed at ensuring remunerative prices to growers for their produce and encouraging **Crop Diversification**.
- **Crops Under MSP:**
  - The CACP recommends MSPs for **22 mandated crops and fair and remunerative price (FRP)** for sugarcane.
  - The mandated crops include 14 crops of the kharif season, **6 rabi crops** and 2 other commercial crops.
- **Three Kinds of Production Cost:**
  - The CACP projects **three kinds of production cost for every crop**, both at state and all-India average levels.
    - **'A2':** Covers **all paid-out costs directly incurred by the farmer** in cash and kind on seeds, fertilisers, pesticides, hired labour, leased-in land, fuel, irrigation, etc.
    - **'A2+FL':** Includes **A2 plus an imputed value of unpaid family labour**.
    - **'C2':** It is a more comprehensive cost that factors in rentals and interest for owned land and fixed capital assets, on top of A2+FL.
  - **CACP considers both A2+FL and C2 costs** while recommending MSP.
    - CACP reckons only A2+FL cost for return.
    - However, C2 costs are used by CACP primarily as benchmark reference costs (opportunity costs) to see if the MSPs recommended by them at least cover these costs in some of the major producing States.
- **Need for MSP:**
  - The twin droughts of 2014 and 2015 forced the farmers to suffer from declining commodity prices since 2014.

- The twin shocks of **Demonetisation and the rollout of GST**, crippled the rural economy, primarily the non-farm sector, but also agriculture.
- The slowdown in the economy after 2016-17 followed by the pandemic further ensured that the situation remains precarious for the majority of the farmers.
- Higher input prices for diesel, electricity and fertilisers have only contributed to the misery.
- It ensures that farmers receive a fair price for their crops, which helps in reducing farm distress and poverty. This is particularly crucial in states where agriculture is a major source of livelihood.

## MINIMUM SUPPORT PRICE (MSP)

The rate at which the govt. purchases crops from farmers; based on a calculation of at least 1.5x the cost of production incurred by the farmers

**RECOMMENDED BY**

Commission for Agricultural Costs & Prices (CACP) (recommends MSPs for 22 mandated crops and Fair and Remunerative Price for Sugarcane)

**22 MANDATED CROPS**

(14 Kharif, 6 Rabi and 2 Other Commercial crops)

**CEREALS** Paddy, Wheat, Barley, Jowar, Bajra, Maize And Ragi

**PULSES** Gram, Arhar/tur, Moong, Urad And Lentil

**OLESEEDS** Groundnut, Rapeseed/mustard, Soyabean, Sunflower, Sesamum, Safflower And Niger Seed

**RAW COTTON**    **RAW JUTE**    **COPRA**

MSP is the price at which the govt. is supposed to procure the mandated crops from farmers if the market price falls below it

**FACTORS FOR RECOMMENDING MSP**

- Cost of cultivation
- Demand-Supply situation for the crop
- Market price trends
- Inter-crop price parity
- Implications for consumers (inflation)
- Environment (soil and water use)
- Terms of trade b/w agri and non-agri sectors (ratio of farm inputs and outputs)

Considers both A2+FL and C2 costs

MSP has no statutory backing — a farmer cannot demand MSP as a matter of right

Note:

### What are the Concerns Related to MSP in India?

- **Limited Extent:**
  - The MSP is officially announced for **23 crops**, but in practice, only two, rice and wheat, are extensively procured and distributed under the **National Food Security Act (NFSA)**.
  - For the rest of the crops, the MSP implementation is ad-hoc and insignificant. This means that the majority of farmers growing non-target crops do not benefit from the MSP.
- **Ineffective Implementation:**
  - The **Shanta Kumar Committee**, in its 2015 report, revealed that **only 6% of the MSP was actually received by farmers**.
  - This suggests that a significant portion of farmers, **around 94%, do not benefit from the MSP**. The primary reason for this is inadequate procurement mechanisms and market access for farmers.
- **Skewed Crop Dominance:**
  - The focus on MSP for rice and wheat has led to a **skewed cropping pattern** in favour of these two staples. This overemphasis on these crops can have ecological, economic, and nutritional implications.
  - It may **not align with market demands**, thereby limiting income potential for farmers.
- **Middlemen Dependency:**
  - The MSP-based procurement system often involves intermediaries such as middlemen, commission agents, and officials from **Agricultural Produce Market Committees (APMCs)**.
  - Smaller farmers, in particular, may find it challenging to access these channels, leading to inefficiencies and reduced benefits for them.
- **Burden on Government:**
  - The government shoulders a significant **financial burden in procuring and maintaining buffer stocks** of MSP-supported crops. This diverts resources that could be allocated to other agricultural or rural development programs.

Note:

# International Relations

## Highlights

- Uyghur Forced Labor
- Raisina Dialogue 2024
- INDUS-X Summit 2024
- Notices of Interpol
- China's 'Xiaokang' Border Defence Villages along the LAC
- Regional Dialogue of Secretaries of Security Councils on Afghanistan
- Schengen Zone
- Northern Ireland Conflict
- India-UAE Relations

## Uyghur Forced Labor

### Why in News?

Recently, A German vehicle brand (Volkswagen (VW)) based in China has been seized in the US due to **Uyghur Forced Labour Prevention Act (UFLPA)** violations.

- Allegations have been made against several notable companies from the **US** and **European Union** including **Apple** and **Zara (Spain)** regarding their involvement in forced labour in Xinjiang province of China.
- The **U.S. State Department** and **UN Human Rights Commissioner's** reports highlight **Uyghur repression** as **genocide** and **potential crimes** against humanity.



### Who are Uyghurs?

- **About:**
  - The Uyghurs are a predominantly **Muslim minority Turkic ethnic group**, whose origins can be traced to **Central and East Asia**.
    - The Uyghurs speak their own language, similar to Turkish, and see themselves as culturally and ethnically closer to Central Asian nations than **Han ethnic Chinese**.

Note:



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- The Uyghurs are considered to be one of the **55 officially recognized ethnic minority communities in China**.
  - However, China recognizes the community only as a regional minority and **rejects that they are an indigenous group**.
- Currently, the **largest population of the Uyghur ethnic community** lives in the **Xinjiang region** of China.
  - A significant population of Uyghurs also lives in the neighbouring Central Asian countries such as **Uzbekistan, Kyrgyzstan and Kazakhstan**.
    - **Xinjiang** is technically an autonomous region within China — its largest region, rich in minerals, and **sharing borders with eight countries**, including **India (Union Territory of Ladakh)**, Pakistan, Russia and Afghanistan.
- **China's Move Against Human Rights of Uyghurs:**
  - **UN Report:** A report by the Office of the UN High Commissioner for Human Rights (OHCHR) concluded that **"serious human rights violations" against the Uyghur** and other predominantly Muslim communities have occurred in Xinjiang.
    - These violations include allegations of torture, ill-treatment, forced medical treatment, and sexual and gender-based violence.
  - **Arbitrary Detentions:** The extent of arbitrary detentions against Uyghurs and others, coupled with **restrictions on fundamental rights**, may constitute crimes against humanity.
    - The Chinese government's counter-extremism strategy involves the use of so-called **Vocational Educational and Training Centers (VETCs) or re-education camps**.
  - **Interlocking Patterns of Restrictions:** China's policies in Xinjiang have led to severe and undue restrictions on a wide range of human rights. Even if the VETC system has been reduced, the **underlying laws and policies remain**, resulting in increased imprisonment and abuse since 2017.
  - **Discrimination:** The violations occur against the backdrop of broader discrimination targeting Uyghurs and other minorities.
    - The Chinese government's assertion of targeting terrorists through its counter-extremism measures has raised serious concerns.

- **International Condemnation:** Fifty-one UN member countries issued a joint declaration **condemning China's crimes against humanity committed against Uyghurs** and other communities.
- **China's Response to the Allegations of Uyghers' Human Rights Violation:**
  - Beijing either **denied the existence of the internment camps** or dismissed such claims as outright falsehoods.
  - The government has **described them as vocational training centres** aimed at providing employment opportunities and addressing religious and separatist extremism among the Uyghur Muslim population.
  - In reaction to the **global allegations, the Chinese government has relocated detainees** to different regions within the country and redirected exports away from Xinjiang.

### *How are Different Nations Addressing Human Rights Violations Against the Uyghurs?*

#### ➤ **United States:**

- The **Uyghur Forced Labor Prevention Act (UFLPA)**, directs the **Forced Labor Enforcement Task Force** to develop a strategy for supporting the enforcement of the prohibition on the importation of goods into the **United States** manufactured wholly or in part with **forced labour** in the **People's Republic of China**, especially from the **Xinjiang Uyghur Autonomous Region**.
- The law creates a presumption that importing goods from China, or made by certain entities in this region, is banned under **Section 307** of the **Tariff Act of 1930**.
  - Such goods, wares, articles, and merchandise are not entitled to entry to the **United States**.
  - The presumption applies unless the **Commissioner of U.S. Customs and Border Protection (CBP)** determines, through clear and convincing evidence, that the goods, wares, articles, or merchandise were not produced using forced labour.
- The Act seeks to **penalize domestic companies for human rights abuses**, such as torture, arbitrary detentions, and forced labour, affecting approximately one million Uyghur Muslims who have been held in the **internment camps** in the China's north-western region.

Note:

- The law seeks to utilise the definition of forced labour provided by the **International Labour Organization (ILO)** and focus on large corporations.
- **European Union:**
  - In contrast to the **U.S. ban**, which primarily targets imports from Xinjiang, the **European Union (EU)** has put forward a broader law that addresses all products dependent on **forced labour**, including those manufactured within the 27-member bloc.
  - There is worry that bans targeting specific countries could be seen as discriminatory actions according to the regulations of the **World Trade Organization (WTO)**.
  - **EU-wide Corporate Sustainability Due Diligence Directive**, addressing social, environmental, and human rights abuses in supply chains, has been at a standstill since 2022.

### **International Labour Organization**

#### **About:**

- **International Labour Organization (ILO)** is the only tripartite **U.N. agency**, since **1919**. It brings together **governments, employers and workers of 187 member States**, to set labour **standards, develop policies** and devise programmes promoting decent work for all women and men.
- Established:
  - **1919**, by the **Treaty of Versailles** as an affiliated agency of the **League of Nations**.
  - Became the **first affiliated** specialized agency of the **United Nations** in **1946**.
- **Headquarters:** Geneva, Switzerland
- **Founding Mission:** Social justice is essential to universal and lasting peace.
  - Promotes internationally recognized human and labour rights.
- **Nobel Peace Prize:**
  - Received in 1969.
  - For improving peace among classes
- Pursuing decent work and justice for workers
- Providing technical assistance to other developing nations

## **Raisina Dialogue 2024**

### **Why in News**

Recently, the 9<sup>th</sup> edition of the Raisina Dialogue took

place in New Delhi, with over 2,500 participants from approximately 115 countries attending the conference in person.

- **Greece's Prime Minister Kyriakos Mitsotakis** joined the inauguration session as the chief guest.

### **What is Raisina Dialogue?**

#### **About:**

- The Raisina Dialogue is an **annual conference on geopolitics and geoeconomics**, which aims to address the most challenging issues faced by the world. It was structured along the lines of the **Shangri-La Dialogue**.
  - It is a **component of India's "intelligence diplomacy,"** which, though not prominently featured in the public eye, **plays a crucial role in the national security framework**, alongside the diplomatic corps and the armed forces.
- The conference takes place in New Delhi and is attended by **people from political, business, media, and civil society** backgrounds.
- The Dialogue is structured as a multi-stakeholder, cross-sectoral discussion, involving heads of state, cabinet ministers and local government officials, who are joined by thought leaders from the private sector, media and academia.
- Delhi-based think tank **Observer Research Foundation (ORF)**, in partnership with the **Ministry of External Affairs**, hosts the conference.
- **2024 Theme and Thematic Pillars:**
  - **Chaturanga:** Conflict, Contest, Cooperate, Create.
  - The participants engaged with each other over **six "thematic pillars"**. These include:
    - **Tech Frontiers:** Regulations & Realities
    - **Peace with the Planet:** Invest & Innovate
    - **War & Peace:** Armouries & Asymmetries
    - **Decolonising Multilateralism:** Institutions & Inclusion
    - **The Post 2030 Agenda:** People & Progress
    - **Defending Democracy:** Society & **Sovereignty**.
- **Similar Dialogues around the World:**
  - **Munich Security Conference (MSC):** Held annually in Munich, Germany, the MSC is one of the most prominent **forums for discussing international security policy**.

Note:

- **Shangri-La Dialogue:** Organized by the International Institute for Strategic Studies (IISS) and held **annually in Singapore**, the Shangri-La Dialogue **focuses on security issues in the Asia-Pacific region**.
- **Oslo Freedom Forum:** It is an **annual conference focused on human rights**, democracy, and freedom. It brings together activists, journalists, and policymakers to share ideas and strategies for advancing human rights globally.

### What are the Key Takeaways of Raisina Dialogue 2024?

- **Geopolitical Shifts:**
  - Participants discussed ongoing geopolitical shifts, including the evolving power dynamics between major players such as the United States, China, Russia, and European countries.
  - With the emergence of new challenges and opportunities, discussions revolved around how nations are adapting their strategies and alliances.
- **India a Bridging Power:**
  - India's External Affairs Minister called **India a "bridging power"**, a country seeking common ground through a **"multi-vector" policy**, and playing the role of a **"Vishwamitra" or friend of the world**.
- **India-Middle East-Europe Economic Corridor:**
  - The Greek Prime Minister spoke about the importance of connectivity projects such as the **India-Middle East-Europe Economic Corridor**.
- **Baltic-Nordic Forum:**
  - The ministerial contingent from **Central and Eastern Europe**, which included all Ministers of the **Baltic-Nordic forum**, enabled a new diplomatic outreach for the government.
    - This outreach aims to **establish trade agreements and investment ties** with this part of Europe, which is often soft-overlooked but economically competitive.
- **Global Conflicts:**
  - The greater part of the **conversations focused on global conflicts**. The heavy presence of **European dignitaries turned the spotlight on the Russian war** in Ukraine.
  - Panels on military and naval strategy concentrated on the **need to handle an aggressive China**, including discussions on **"grey warfare."**

- European Ministers urged India to reconsider trade and ties with Russia and to press the case for **Ukraine's sovereignty ahead** of the second anniversary of the **Russian invasion of Ukraine** that falls on 24<sup>th</sup> February.

- In particular, they urged India to join a **"Peace Conference" in Switzerland**, set to be held shortly, at the request of Ukraine President Volodymyr Zelensky.

#### ➤ Regional Security Concerns:

- The conference addressed various regional security concerns, including tensions in regions like the **Indo-Pacific, Middle East**, and Eastern Europe.
- Participants discussed strategies for conflict resolution, peace-building efforts, and managing regional rivalries.

#### ➤ Technology and Innovation:

- The role of technology and innovation in shaping geopolitics and global governance would have been a significant theme.
- Discussions have covered topics such as **cybersecurity, digital transformation, artificial intelligence**, and their implications for national security and international relations.

#### Observer Research Foundation

- It is an **independent think tank based in New Delhi** with three centres in Mumbai, Chennai and Kolkata.
- It seeks to **lead and aid policy thinking** towards building a strong and prosperous India in a fair and equitable world and helps discover and inform India's choices. It carries **Indian voices and ideas to forums shaping global debates**.
- It provides non-partisan, independent, well-researched analyses and inputs to diverse decision-makers in governments, business communities, academia and civil society worldwide.

## INDUS-X Summit 2024

### Why in News?

Recently, the United States Department of Defense (DoD) and the Indian Ministry of Defense (MoD) participated in the **second India-U.S. Defense Acceleration Ecosystem (INDUS-X) Summit** in New Delhi, India.

- The summit was jointly organized by **Innovations for Defence Excellence (iDEX)**, MoD, and the DoD, and

Note:

coordinated by the **US-India Business Council (USIBC)** and **Society of India Defense Manufacturers (SIDM)**.

### **What are the Key Highlights of the Second INDUS-X Summit?**

- **Focus on Indo-Pacific Security:**
  - The summit emphasised the critical role India and the US play as key partners in ensuring a **free and open Indo-Pacific region**.
  - Discussions centred on co-producing advanced military capabilities, strengthening defence supply chains, and enhancing interoperability to address shared security challenges.
- **Promoting Innovation and Collaboration:**
  - Emphasis was placed on fostering innovation in defence technologies through collaborative efforts between Indian and American industries.
    - The summit provided a platform for startups and **Micro, Small, and Medium Enterprises (MSMEs)** in the defence sector to engage with established players, facilitating knowledge exchange and partnerships.
- **Defence Partnership Between India and the United States:**
  - The summit highlighted the strong defence partnership between India and the US, citing initiatives like **Initiatives on Critical and Emerging Technologies (iCET)** aimed at fostering innovation across key sectors, including defence.
- **Emphasis on Technological Innovation:**
  - The Summit emphasised the crucial role of technological innovation in defence within the broader context of the U.S.-India Strategic Partnership, fostering collective progress for defence industries across borders.
- **Joint IMPACT Challenges:**
  - The Summit highlighted the introduction of **Joint IMPACT Challenges**, aiming to advance defence and aerospace co-development and co-production collaboratively, involving startups in pioneering solutions.

#### **Innovations for Defence Excellence (iDEX)**

- Launched in 2018, iDEX is the flagship scheme of the **Ministry of Defence**. It is funded and managed by the **Defence Innovation Organization (DIO)**, established as a 'not-for-profit' company under Section 8 of the Companies Act 2013.

- iDEX, aims to foster **innovation and technology development in the Defence and Aerospace sector**.
  - It provides grants, funding, and other support to carry out research and development projects with potential for future adoption in Indian defence and aerospace needs.
- It is currently engaged with around 400+ Startups and MSMEs. Recognized as a game-changer in the defence ecosystem, iDEX has received the **PM Award for Innovation in the defence sector**.

#### **The US-India Business Council:**

- It aims to **foster bilateral trade between India and the US**, bridging industry and government for long-term commercial partnerships, job creation, and global economic growth.

#### **Society of India Defense Manufacturers:**

- SIDM is India's leading Defence Industry association, advocating policy reforms and facilitating collaboration with the government and Armed Forces.

### **What are the Key Developments in India-US Defence Cooperation?**

- **Framework and Partnership Renewal:**
  - The foundation of India-US defence cooperation lies in the "New Framework for India-US Defence Cooperation," renewed for a decade in 2015.
  - In 2016, the partnership was upgraded to a **Major Defence Partnership (MDP)**.
  - India's elevation to **Tier-1 status** under the US Department of Commerce's **Strategic Trade Authorization license** exception occurred on July 2018.
- **Institutionalised Dialogue Mechanisms:**
  - The **2+2 Ministerial Dialogue**, involving the Ministers of External Affairs and Defence from both nations along with their US counterparts, serves as the apex platform for addressing political, military, and strategic issues.
  - The 5<sup>th</sup> Edition of the India-US 2+2 Ministerial Dialogue took place, Novemembr 2023 in New Delhi.
- **Defence Policy Group (DPG):**
  - The DPG, led by the Defence Secretary and Under Secretary of Defence (Policy), facilitates a comprehensive review of defence dialogues and mechanisms.

Note:

- The 17th DPG convened in Washington D.C. in May 2023.
- **Defence Procurements and Platforms:**
  - Defence procurements from the US are on the rise, amounting to nearly US\$20 billion.
  - Key US-origin platforms in use by India include **Apache, Chinook, MH60R helicopters, and P81 aircraft.**
  - Recently, the US State Department has approved a possible foreign military sale of **31 MQ-9B Sky Guardian** to India.
- **Important Defence Agreements:**
  - Significant agreements include **Logistics Exchange Memorandum of Agreement (2016), Communications Compatibility and Security Agreement (2018), Industrial Security Agreement (2019), Basic Exchange and Cooperation Agreement (2020),** and **Memorandum of Intent for Defence Innovation Cooperation (2018).**
- **Military-to-Military Exchanges:**
  - High-level visits, exercises, training courses, and service-specific bilateral mechanisms facilitate military-to-military exchanges.

- India participates in a growing number of military exercises with the US, including **Yudh Abhyas, Vajra Prahar, Malabar, Cope India, and Tiger Triumph, among others.**
- Participation in multilateral exercises like **Red Flag, Rim of the Pacific (RIMPAC), CUTLASS Express, Sea Dragon, and Milan** further strengthens cooperation.
- **INS Satpura** marked the first Indian naval ship to visit the US mainland as part of **Azadi Ka Amrit Mahotsav** in August 2022.
- India joined the **multilateral Combined Maritime Force (CMF)** as an Associate Partner in April 2022, based in Bahrain.

## Notices of Interpol

### Why in News?

Recently concerns have been raised about the misuse of **Interpol's notice system**, especially the issuance of **blue corner notices**, which are **less scrutinised** than their red corner notices.

- The number of blue notices has **approximately doubled in the last ten years.**
- Critics have argued that **countries often exploit** existing protocols to target political refugees and dissidents.



Note:

## What is the Interpol Notice System?

### ➤ About:

- **Interpol** serves as a vital information-sharing network for **national police forces** to combat transnational crimes.
- **Interpol (General Secretariat)** issues notices to member states for missing or wanted persons, which, while **not mandatory** for states to follow, are often treated as warrants for **arrest and extradition**.

### ➤ Requesting Authority: Notices are issued at the request of:

- A member country's **Interpol National Central Bureau**
- At the request of **International Criminal Tribunals** and the **International Criminal Court** to seek persons wanted for committing crimes within their jurisdiction, notably **genocide, war crimes, and crimes** against humanity.
- At the request of the **United Nations** concerning the implementation of sanctions imposed by the **Security Council**.

### ➤ Types of Notices:



## What are the Concerns Regarding the Misuse of Interpol Notice?

### ➤ Blue Notice Vs Red Notice:

- **Blue Notice:** Referred to as an “enquiry notice,” enables police forces in member states to **exchange crucial crime-related information**, including verifying a person’s **criminal record and location**, among other details.
  - Blue Corner notices are issued **before** the filing of **criminal charges**.
- **Red Notice:** Issued by a member state to **apprehend a wanted criminal** through extradition or other lawful means, targeting individuals sought by **national jurisdictions** for prosecution or to serve a sentence following an arrest warrant or court ruling.

- Interpol can act on a **request from any country**, regardless of whether it is the fugitive’s home country, as long as the alleged crime occurred there.
- The individual in question may be **detained and apprehended** while moving through a member state, with additional adverse outcomes including the freezing of bank accounts.
- Interpol **lacks** the authority to **mandate law enforcement** agencies in any nation to apprehend the individual targeted by a red corner notice, as the decision to do so is entirely at their discretion.

### ➤ Controversy Surrounding Red Notice: Although Interpol’s Constitution **explicitly forbids** any activities of a political character, **activists have accused** it of failing to enforce this rule. For example:

- **Russia** frequently issues notices and diffusions for the arrest of Kremlin opponents, contributing to 38% of all public red notices according to the US rights organisation **Freedom House**.
- International human rights groups have also accused **China, Iran, Turkey, and Tunisia**, among others, of abusing the agency’s notice system for **authoritarian ends**.
- Interpol declined India’s second request to issue a red corner notice against Gurbatwant Singh Pannun, designated as a “terrorist” by the Ministry of Home Affairs under the **UAPA** citing inadequate information and highlighting that his actions have a “**clear political dimension**”, which is beyond the scope of a red corner notice under Interpol’s Constitution.

### ➤ Interpol’s Stand: Interpol has strengthened the supervision of its red notice system in light of increasing criticism, but **concerns persist** over the issuance of blue notices

## China’s ‘Xiaokang’ Border Defence Villages along the LAC

### Why in News?

In recent developments along the **Line of Actual Control (LAC)** between **India and China**, Chinese nationals have begun occupying previously vacant “Xiaokang” border defence villages.

Note:

- These villages, constructed by China in 2019, have raised concerns for the Indian Army, particularly regarding their occupants' nature and strategic implications.

### **What are the "Xiaokang" Border Defence Villages?**

- **Model Villages:**
  - The Xiaokang or "well-off villages" border defence villages are a part of China's strategic infrastructure development initiative along its borders, particularly along the LAC with India.
    - Notable areas of occupation include **villages across from Lohit Valley and the Tawang sector of Arunachal Pradesh.**
  - They are built in regions where territorial claims are contested or where there is a perceived need to reinforce sovereignty.
- **Dual-use Infrastructure:**
  - These villages are designed to serve multiple purposes, **including civilian settlement and military presence**, hence characterized as "dual-use infrastructure."
  - They are built in regions where territorial claims are contested or where there is a perceived need to reinforce sovereignty.
- **Associated Concerns for India:**
  - **Territorial Claims:** China's construction of **628 such villages along India's borders** with the **Tibet Autonomous Region** signifies a concerted effort to assert territorial claims along the LAC. This raises concerns for Indian military strategists, highlighting the need for vigilance along the border.
  - **Military Implications:** The villages' potential for dual-use raises concerns about increased militarisation along the already tense LAC.
  - **Uncertain Intentions:** The lack of transparency regarding the specific purpose and scale of the civilian population in these villages creates suspicion and **hinders trust-building efforts.**

### **What are India's Initiatives along the LAC?**

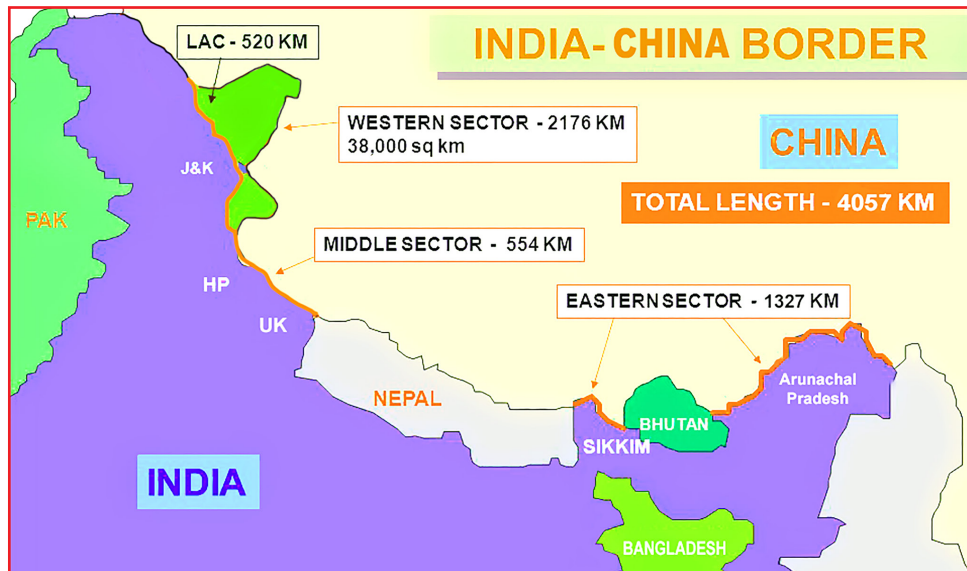
In response to China's infrastructure development, India has intensified efforts to enhance its border infrastructure since 2019.

- **Vibrant Villages Program:**
  - The **Vibrant Villages program** aims to modernise 663 border villages, with 17 selected for development along the China-India border in regions like Ladakh, Himachal Pradesh, Uttarakhand, Sikkim, and Arunachal Pradesh.
- **Border Roads Organization (BRO):**
  - The **BRO** has completed **90 infrastructure projects along the India-China border**, worth Rs 2,941 crore.
    - As of September 2023, 36 of these projects are in Arunachal Pradesh, 26 in Ladakh, and 11 in Jammu and Kashmir.
  - BRO is involved in major highways, including the **Trans-Arunachal Highway, Frontier Highway, and East-West Industrial Corridor Highway**, which are under construction to improve connectivity, particularly in the eastern part of **Arunachal Pradesh** and the Tawang region.
- **Border Area Development Programme (BADP):**
  - The **BADP** is a centrally sponsored scheme that aims to meet the special **developmental needs of the people living** in remote and inaccessible areas situated near the international border.
  - The funds can be used for projects relating to Infrastructure, Livelihood, Education, Health, Agriculture, Allied sectors.
- **Railways:**
  - Indian Railways is constructing strategic rail lines in the Northeast region to facilitate the swift mobilization of the Indian army.

### **What is the Line of Actual Control (LAC)?**

- **About:**
  - The LAC serves as the **boundary separating Indian-controlled territory from Chinese-controlled territory.**
    - India asserts the length of the LAC to be 3,488 km, whereas China contends it to be approximately 2,000 km.
  - This demarcation is categorized into **three sectors:**
    - **Eastern sector** encompassing Arunachal Pradesh and Sikkim.
    - **Middle sector** spanning Uttarakhand and Himachal Pradesh.
    - **Western sector** located in Ladakh.

Note:



#### ➤ Disagreements Surrounding the LAC:

- The primary dispute regarding the LAC arises from its alignment in different sectors. The LAC in the eastern sector follows the **1914 McMahon Line** with minor disputes about ground positions.
- Major disagreements exist in the Western sector, originating from letters written by Chinese Prime Minister Zhou Enlai to PM Jawaharlal Nehru in 1959.
  - The LAC was described only in general terms on maps not to scale by the Chinese.
  - The Chinese claimed to have **withdrawn to 20 km behind the LAC in November 1959 after the 1962 War**.
  - During the Doklam crisis in 2017, the Chinese Foreign Ministry spokesperson urged India to abide by the “1959 LAC”.
- Despite subsequent clarifications, ambiguity persisted, leading to contrasting interpretations by both nations.

#### ➤ India’s Response to China’s LAC Designation:

- India initially rejected the concept of the LAC in 1959 and 1962, citing **concerns over its vague definition and potential exploitation by China** to alter ground realities through military force.
  - India’s shift in the LAC approach started in the mid-1980s due to increased border encounters, prompting a review of patrolling boundaries.
- **India formally accepted the concept of the LAC in 1993** and the two sides signed the **Agreement to Maintain Peace and Tranquility at the LAC**.
  - India and China have only exchanged maps for the middle sector of the LAC. Maps were “shared” for the Western sector but never formally exchanged, and the process of clarifying the LAC has effectively stalled since 2002.
- The most serious recent episodes of conflict were in **Galwan Valley in Ladakh in 2020** and in **Tawang** in Arunachal Pradesh in 2022.
  - Observers on both sides of the LAC agree that the number of serious military **confrontations has increased since 2013**.

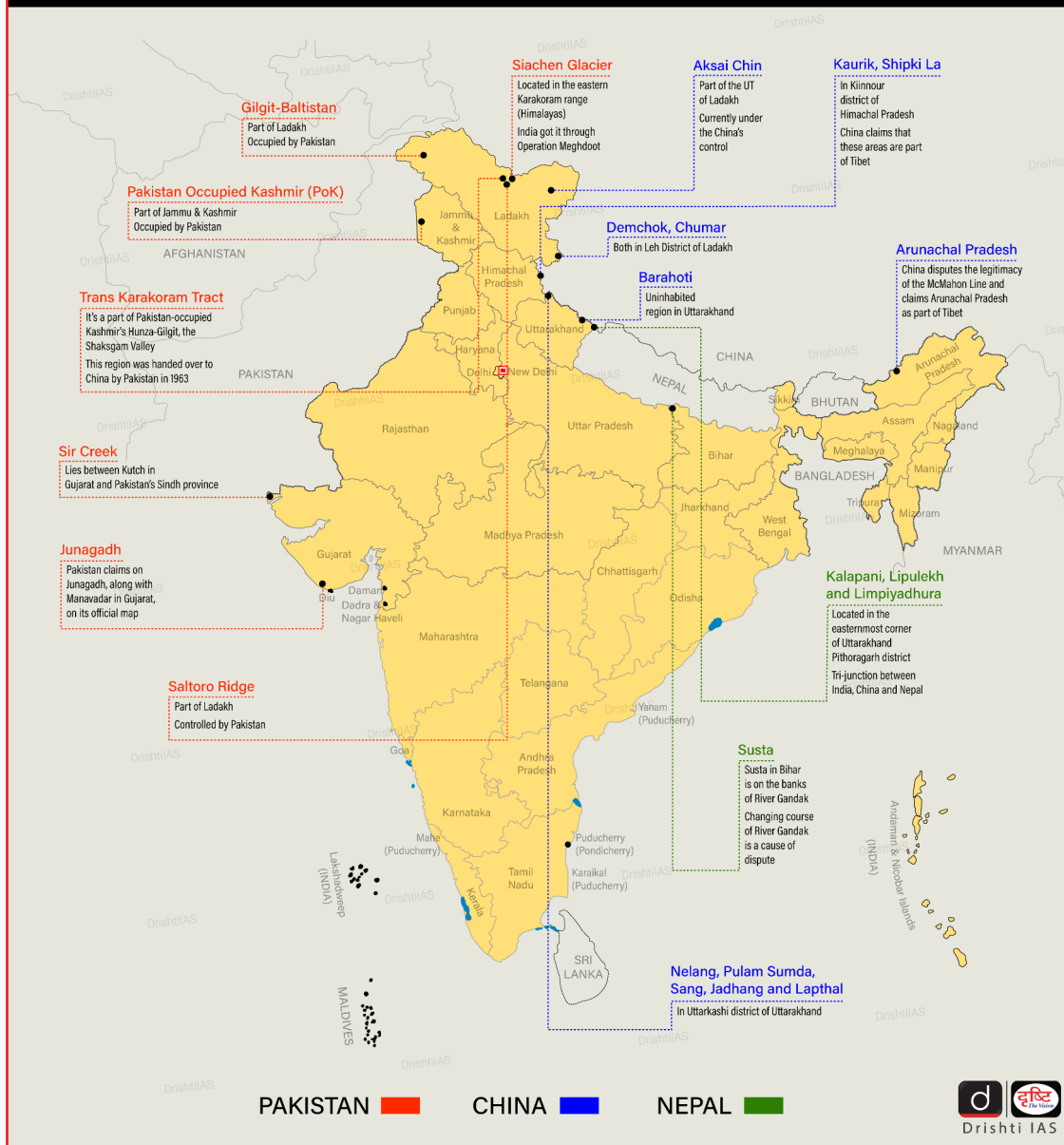
#### ➤ LAC vs Line of Control with Pakistan:

- The **Line of Control (LoC)** was established in 1972 after the Kashmir War, based on the ceasefire line negotiated by the **UN** in 1948. It has **international legal validity** and is delineated on a map signed by both countries.
  - On the other hand, the **LAC is not agreed upon by both countries and is not delineated on a map or demarcated on the ground**.

Note:



# India's Border Dispute With Neighbors



## Regional Dialogue of Secretaries of Security Councils on Afghanistan

### Why in News?

Recently, the 6<sup>th</sup> Regional Dialogue of Secretaries of Security Councils/National Security Advisers (NSA) on Afghanistan was held in Bishkek, Kyrgyzstan.

- India reiterated its collective approach to combating terrorism as stated in the [United Nations Security Council Resolution \(UNSCR 2593\)](#).

Note:

### **What is the Regional Security Dialogue on Afghanistan?**

- The **Regional Security Dialogue on Afghanistan** is a series of high-level meetings involving **National Security Advisers (NSA)** or **senior security officials** from countries in the region, including **Afghanistan, Pakistan, Iran, China, Russia, India,** and other **Central Asian states**.
- These dialogues are platforms for discussing and coordinating regional approaches to address security challenges and promote **stability in Afghanistan** and the broader region.
- Regional Security Dialogue on Afghanistan follows the objective of **UNSCR 2593**.
  - The resolution, passed by the **15-member organ (UNSC)**, calls for the prevention of **Afghan territory** from being used to pose threats or launch attacks against any nation.
  - The adoption of the resolution is a strong signal from the Security Council and the international community on its expectations in respect of Afghanistan.
- It underscores the critical necessity of combating terrorism within Afghanistan.

### **What are India's Efforts for the People of Afghanistan?**

- The **Indian Council for Cultural Relations (ICCR)** has taken significant strides in promoting education, granting admission to over **3,000 students**, including **600 Afghan girls**, since August 2021.
- In a bid to provide essential support, a **Humanitarian Air Corridor** has been established between **Delhi** and **Kabul**.
  - This corridor facilitates **critical travel and aid delivery**, demonstrating India's proactive response to humanitarian needs.
- India has supplied several shipments of humanitarian assistance consisting of 50,000 MTs of wheat, 250 tons of medical aid and 28 tons of earthquake relief aid.
- India has partnered with the **United Nations Office on Drugs and Crime (UNODC) in Afghanistan** to provide assistance for the welfare of the Afghan drug user population, especially women.
  - Under this partnership, India has, since **2022**, supplied **11,000 units** of **hygiene kits, baby food, blankets, clothing, medical aid** and other miscellaneous items to **UNODC, Kabul**.

- Trade and commerce between **India** and **Afghanistan** is ongoing, including through the **Chabahar port**.

### **What are the Key Issues Affecting India-Afghanistan Relations?**

- **Impact on Regional Stability:** The drug trade originating from Afghanistan (**golden crescent**) has been a major contributor to instability and violence in the region, posing challenges for both Afghanistan and neighbouring countries like India.
- **Indian Interests and Influence:** India's strategic interests and influence in the region faced a setback following the **Taliban's capture of Kabul in 1996**.
- **Economic and Infrastructure Hurdles:** The **fall of Afghanistan in the hands of the Taliban (2021)** presented formidable obstacles to India's endeavours to construct infrastructure like the **Salma Dam** and **Parliament Building** and to make investments in the country. These efforts have been impeded by **security concerns, corruption,** and **various other challenges**.
- **Attack on Indian Nationals:** The bombing of a Sikh gurdwara in Kabul claimed by **ISIS-K**, has raised concerns for India.
- **Shift in Security Dynamics:** Until August 2021, India relied on a friendly government in Kabul and the security presence of the United States in Afghanistan for its security.
  - The US withdrawal from Afghanistan necessitated a careful reassessment of the security landscape by India.

### **How is India's Relations with Afghanistan?**

- **History:**
  - India's policy towards Afghanistan is rooted in **historical and civilizational ties**, dating back centuries.
    - India has historically enjoyed relatively **good ties with Afghanistan**, which go back to the **Treaty of Friendship, 1950**.
  - As a contiguous neighbour, India has both legitimate **economic and security** interests in Afghanistan.
- **Economic Relations:**
  - Through nearly **500 projects** spanning all **34 provinces**, India has invested over **USD 3 billion** in critical areas such as **power, water supply, road connectivity, healthcare, education, agriculture,** and **capacity building**.

Note:



- The **Indian Army's Border Roads Organisation** constructed a major road in 2009 in the remote Afghan province of **Nimroz**, connecting **Delaram to Zaranj**.
  - This has proved a viable alternative route for the **duty-free movement of goods** through the **Chabahar port** in Iran to Afghanistan.
- Tariff concessions under **South Asian Free Trade Agreement (SAFTA)** continue to be provided to Afghan traders.
- **Salma Dam, Afghan-India Friendship Dam (AIFD)** is a **hydroelectric and irrigation dam** project located on the **Hari River** in **Herat Province of western Afghanistan**.
  - In **2006**, India made a commitment to funding the project for its completion.
- **Political Relations:**
  - India-Afghanistan relations have been strengthened by the **Strategic Partnership Agreement**, which was signed between the two countries in **October 2011**.
  - The **Strategic Partnership Agreement (SPA)** between the two sides, provides for assistance to help **rebuild Afghanistan's infrastructure and institutions, education and technical assistance**.
- India has been a strong supporter of **Afghan democracy** and has consistently advocated for a **stable, peaceful, and prosperous Afghanistan**.
- **Humanitarian Assistance:**
  - To combat the global pandemic of **COVID-19** and related issues of food security, India is committed to delivering **75,000 MT** of Wheat to **Afghanistan** in **2020**.
    - India has also undertaken the supply of the **tablets of Hydroxy-chloroquine, Paracetamol** and **pairs of surgical gloves** to the Government of Afghanistan in **2020**.
  - Provision of food assistance of **11 lakh tonnes** of wheat, both as grains and biscuits, was distributed to approximately **1.5 million school children**.
  - To promote food security, particularly for children during times of drought, India distributed **2000 tonnes** of pulses to Afghanistan in 2018.
  - A Medical Diagnostic Centre in **Kabul** was set up in **2015**. The Centre provides the latest diagnostic facilities to children of Afghanistan thereby generating goodwill for India.

Note:



### What is the Indian Council for Cultural Relations?

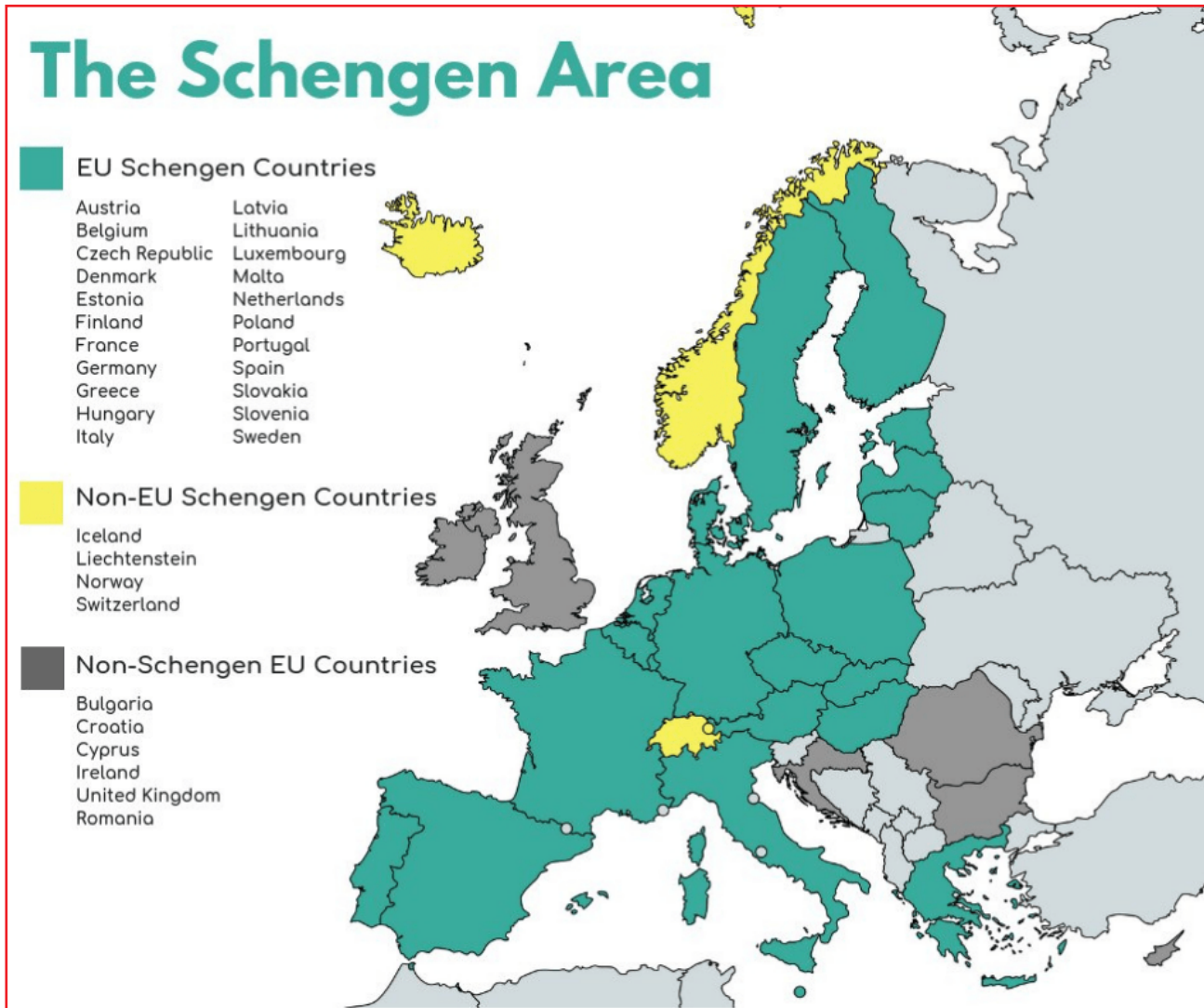
- The Indian Council for Cultural Relations (ICCR), is an **autonomous organization** of the Government of India, involved in India's external cultural relations (cultural diplomacy), through cultural exchange with other countries and their peoples.
- It was founded in **1950 by Maulana Abul Kalam Azad**, independent India's first Education Minister.
- ICCR has been assigned the responsibility of facilitating the celebration of the **International Day of Yoga** by Indian Missions/Posts abroad since **2015**.

## Schengen Zone

### Why in News?

Recently, **Kosovo** achieved a significant milestone after facing delays in **Schengen approval**. It has secured visa-free access to the **Schengen zone**, the world's largest area of free movement.

- Kosovo becomes the last non-**European Union (EU)** country in the Western Balkans to enjoy this privilege.



### What is the Schengen Zone?

- **About:**
  - The **Schengen Agreement** is a treaty signed in **1985** by five member states (Belgium, France, Germany, Luxembourg, and the Netherlands) of the European Economic Community.

Note:

- The agreement aims to **create a border-free area in Europe** that allows the free movement of people, goods, services, and capital called the Schengen Area, where internal border checks are largely abolished.
  - All EU member states without opt-outs must join Schengen upon meeting technical requirements.
  - **Non-EU countries** like Switzerland, Liechtenstein, Norway, and Iceland are part of Schengen **through special association agreements**.
  - Over time, the Schengen area has grown to **encompass 27 countries**, spanning over **4 million square kilometres** and hosting nearly 420 million inhabitants.
- **Benefits of Schengen:**
    - Schengen enables seamless travel for **over 400 million individuals across member states without border checks**.
    - Facilitates approximately 1.25 billion journeys annually, fostering tourism, cultural exchange, and economic prosperity.
    - Schengen promotes cooperation among police, customs, and border control authorities to **combat terrorism and organized crime**.
    - For nationals of Schengen countries, visa-free travel and the absence of internal border checks enhance convenience and facilitate economic integration.
    - Schengen's border-free regime symbolises European values of unity and solidarity.

#### Key Facts About Kosovo

- Kosovo, which has a majority Albanian population and a minority of Serbs, is a landlocked region bordered by Albania, Macedonia, Serbia, and Montenegro.
- Its capital and largest city is **Pristina**.
- According to the **World Bank**, Kosovo is a parliamentary republic and upper-middle-income country. It declared **independence from Serbia on 17th February 2008** and is recognised as an independent country by more than **100 United Nations members**.
  - India, Brazil, China, Russia, and Mexico have not recognised Kosovo as an independent country.
  - However, **Serbia does not recognize Kosovo as an independent state** and continues to claim it as the Autonomous Province of Kosovo and Metohija.



Note:

## Northern Ireland Conflict

### Why in News?

Recently, a pro-Irish unity politician made history by becoming the first Nationalist First Minister of Northern Ireland amid political deadlock reflecting the region's complex divisions.

- Rooted in its troubled past, the move signals a potential shift towards reconciliation and inclusive governance.



### How did Northern Ireland Come into Being?

- **The Troubles:**
  - Northern Ireland was the site of a **30-year civil war (1968-1998)** known as 'The Troubles' between the **Republicans and the Unionists**, which killed over 3,500 people.
  - It also had a religious aspect to it with the Republicans being mostly Catholic and the Unionists being largely Protestants.
  - Northern Ireland was formerly part of the **Ulster province**, which lies to the north of modern-day Ireland.
- **Conflict Between Protestants and the Irish Catholics:**
  - Conflict between the Protestants and the Irish Catholics goes all the way back to 1609, when **King James I started an official policy of migration** wherein people from England and Scotland were encouraged to move to Ulster to work in his various plantations there.

- The religious war that was being waged in much of Europe at the time, between the Protestants and the Catholics, made its presence felt in Ulster as well.
- However, a much stronger resistance was brewing. Ireland at the time was under **the rule of England**.
- Resistance Against the Colonial English Rule:
  - The growing resistance against colonial English rule, especially after the **Potato Famine of 1845** where over 1 million Irish people died due to disease and starvation, cemented these **sectarian and religious differences**.
  - Finally, in 1916, in the middle of the **First World War**, during Easter week, Ireland rose up in arms against colonial rule under the leadership of the **Irish Republican Army (IRA)**.
  - Forming of Northern Ireland:
    - After a bloody war, it was able to gain independence from England with the **Anglo-Irish treaty of 1921**.
    - However, Ireland was split into two territories. As there was a protestant majority in Ulster, out of the **32 counties in Ireland, six remained with the U.K**, forming the region of **Northern Ireland**.

### What is the Background of Political Deadlock in Northern Ireland?

- The political deadlock in Northern Ireland stemmed from the disagreement over the implementation of border controls between **Britain and the Island of Ireland** following **Brexit**.
- When the United Kingdom left the **European Union**, Northern Ireland, as part of the UK, became the **only province with a land border with an EU member state**, the Republic of Ireland.
- To address this issue, the UK and the EU devised the **Northern Ireland Protocol** as part of the Brexit deal. This protocol aimed to prevent the reintroduction of a hard border between Northern Ireland and the Republic of Ireland by shifting the trade border to Irish ports, effectively creating a sea border between Northern Ireland and the rest of the UK.
- However, this arrangement was contentious, particularly for the **Democratic Unionist Party (DUP)**, which objected to what it saw as undermining Northern Ireland's status within the UK and **violating the principles of the Good Friday Agreement**.

Note:

- The DUP's objection to the Northern Ireland Protocol led to their withdrawal from the power-sharing government, as they believed the protocol threatened Northern Ireland's position within the UK and violated the principles of the Good Friday Agreement, which emphasised free movement of goods and people across borders.
- Ultimately, the resolution of the deadlock came through a renegotiation of the border controls and assurances regarding Northern Ireland's status within the UK, leading to the DUP's agreement to return to government.

### What is the Good Friday Agreement?

- **About:**
  - The Good Friday Agreement, also known as the **Belfast Agreement**, is a historic peace treaty signed on 10<sup>th</sup> April, 1998, in Northern Ireland.
  - It aimed to bring an end to the violence and conflict that had plagued the region for decades, particularly during the period known as "The Troubles."
- **Key Provisions:**
  - **Power Sharing:** The agreement established a devolved government in Northern Ireland, with power shared between Unionists (who generally want Northern Ireland to remain part of the United Kingdom) and Republicans (who generally seek reunification with Ireland). This power-sharing arrangement was intended to ensure that both communities had a voice in governing Northern Ireland.
  - **Consent Principle:** It recognized the principle of consent, meaning that the status of Northern Ireland would not change without the consent of a majority of its people. This provision allowed for the possibility of reunification with Ireland through a referendum, but only if the majority of people in Northern Ireland voted for it.
  - **Human Rights:** The agreement emphasised the importance of human rights and equality for all citizens of Northern Ireland, regardless of their background or political beliefs.
  - **Decommissioning of Weapons:** While the agreement did not explicitly require the immediate disarmament of paramilitary groups, it set out a process for the decommissioning of weapons held by such groups. This process was meant to take place in parallel with the implementation of other aspects of the agreement.

- **Cross-Border Cooperation:** The agreement encouraged cooperation and reconciliation between Northern Ireland and the Republic of Ireland, as well as between the UK and Ireland more broadly. It promoted economic, social, and cultural ties across the border, while also recognizing the sovereignty and territorial integrity of both states.

### What are the Key Facts About Northern Ireland?

- **Location and Geography:** Northern Ireland is situated in the northeastern quadrant of the island of Ireland. It shares borders with the Republic of Ireland to the south and west, while the Irish Sea separates it from England and Wales to the east and southeast, and the North Channel separates it from Scotland to the northeast.
- **Political Status:** Northern Ireland is a constituent country of the United Kingdom, alongside England, Scotland, and Wales. It is **not a sovereign state** but has its own devolved government within the framework of the United Kingdom.
- **Capital and Major Cities:** The capital city of Northern Ireland is Belfast, a modern city with a rich industrial history, including shipbuilding. Other major cities include Londonderry (also known as Derry) and Armagh.
- **Cultural Contributions:** Northern Ireland has made significant contributions to world culture, particularly in literature, music, and the arts. Notable figures include poet Seamus Heaney and musician Van Morrison.
- **Economy:** Historically reliant on industries such as shipbuilding and textiles, Northern Ireland's economy has diversified in recent decades, with a focus on technology, tourism, and services.
- **Demographics:** The population of Northern Ireland is **diverse, with a mix of ethnicities, religions, and cultural backgrounds**. The region's population is predominantly Christian, with significant Protestant and Catholic communities.

### Conclusion

- The success of the Good Friday Agreement will depend on the ability of all stakeholders to transcend divisions, embrace diversity, and build a shared future grounded in mutual respect and understanding. Only through

Note:

sustained commitment to peace and reconciliation can Northern Ireland fully realise its potential as a society that celebrates its rich cultural heritage while forging a common path towards prosperity and unity.

### Northern Ireland

## India-UAE Relations

### *Why in News?*

Recently, India and the United Arab Emirates (UAE) have signed eight pacts to bolster cooperation in key areas such as investments, electricity trade and digital payment platforms.

### *What are the Key Highlights of the Pact Signed Between India-UAE?*

- **Interlinking of Digital Payment Platforms:**
  - Interlinking of UPI and AANI:
    - The two countries signed agreements on **interlinking of digital payment platforms- UPI (India) and AANI (UAE)**.
    - This will facilitate seamless cross-border transactions between India and UAE, enhancing financial connectivity and cooperation.
  - **Interlinking Domestic Debit/Credit Cards (RuPay and JAYWAN):**
    - Both countries signed a pact on interlinking domestic debit/ credit cards — **RuPay (India) with JAYWAN (UAE)**.
    - It is **an important step in building financial sector** cooperation and it will enhance the universal acceptance of RuPay across the UAE.
      - UAE's domestic card JAYWAN is based on the **digital RuPay credit** and debit card stack.
- **Bilateral Investment Treaty:**
  - Both Countries signed **Bilateral Investment Treaty (BIT)**, which is seen to be a **"Key Enabler"** for further investments in both countries.
  - UAE has been a significant **investor in India's infrastructure sector**.
    - In 2022-2023, **UAE was the fourth biggest FDI (Foreign Direct Investment) investor** for India. It has committed to invest USD 75 billion in India's infrastructure sector.
- **Intergovernmental Framework Agreement on India-Middle East Economic Corridor (IMEC):**
  - It aims to be built to **foster India-UAE cooperation**, furthering regional connectivity. The **IMEC** was announced on the sidelines of the **G20 leaders' summit** in New Delhi in September 2023.
- **Energy Cooperation:**
  - The two sides also signed pacts on cooperation in the field of **electrical interconnection and trade**, which "opens new areas of collaboration in the field of energy, including energy security and energy trade.
  - UAE being among the largest sources of **crude and LPG**, India is now entering into **long-term contracts for LNG**.
- **Cultural Cooperation:**
  - The two countries signed a "cooperation protocol **between the National Archives of the two countries**" to restore and preserve archival material.
  - Both countries aimed at supporting the **Maritime Heritage Complex at Lothal, Gujarat,**
  - **Gratitude for BAPS Temple Construction:**
    - India thanked the UAE for its support in granting land for the construction of the **BAPS Temple** in Abu Dhabi, emphasizing the significance of the temple as a symbol of UAE-India friendship and cultural bonds.
- **Port Infrastructure Development:**
  - Agreements signed between **RITES Limited and Gujarat Maritime Board** with Abu Dhabi Ports Company to enhance port infrastructure and connectivity between India and the UAE.
- **Bharat Mart:**
  - The foundation stone of Bharat Mart, which will combine **retail, warehousing and logistics facilities** at Jebel Ali Free Trade Zone in Dubai, was laid by the Indian Prime Minister.
  - Bharat Mart can potentially play a key role in promoting the exports of India's **micro, small and medium sectors by providing them with a platform to reach international buyers** in the Gulf, West Asia, Africa and Eurasia.

Note:





### What is BAPS Temple?

#### ➤ About:

- BAPS (Bochasanwasi Akshar Purushottam Swaminarayan Sanstha) temples are religious and **cultural centres affiliated with the Swaminarayan Sampradaya, a Vaishnava sect of Hinduism.**
  - The doctrine of Swaminarayan Sampradaya was given by Bhagwan Swaminarayan, which is firmly rooted in the traditional Hindu scriptures.
- BAPS has a network of around 1,550 temples across the world, including the **Akshardham temples** in New Delhi and Gandhinagar, and Swaminarayan temples in London, Houston, Chicago, Atlanta, Toronto, Los Angeles, and Nairobi.

#### ➤ Features:

- **Traditional Architecture:** The Abu Dhabi temple is a traditional stone Hindu temple **with seven shikhars**. Built in the **traditional Nagar style**, the temple's front panel depicts universal values, stories of harmony from different cultures, Hindu spiritual leaders and avatars.

Note:



drishti

- The height of the temple is 108 ft, length 262 ft and width 180 ft. While the external facade uses pink sandstone from Rajasthan, the interior uses Italian marble.

#### ➤ Architectural Features:

- Non-ferrous material (which resists corrosion) has been used in the temple.
- While many different types of pillars can be seen in the temple, such as circular and hexagonal, there is a special pillar, called the 'Pillar of Pillars', which has around 1,400 small pillars carved into it.
- Deities from all four corners of India have been featured in the temple. These include Lord Ram, Sita, Lakshman and Hanuman, Lord Shiv, Parvati, Ganpati, Kartikeya, Lord Jagannath, Lord Radha-Krishna, Akshar-Purushottam Maharaj (Bhagwan Swaminarayan and Gunatitanand Swami), Tirupati Balaji and Padmavati and Lord Ayappa.
- Apart from 15 value tales from Indian civilisation, stories from the Maya civilisation, Aztec civilisation, Egyptian civilisation, Arabic civilisation, European civilisation, Chinese civilisation and African civilisation have been depicted.

### How have India-UAE Bilateral Relations Been So Far?

#### ➤ About:

- India and the UAE established diplomatic relations in 1972.
- The greater push was achieved in bilateral relations when the visit of India's Prime Minister to the UAE in August 2015 marked the beginning of a new strategic partnership between the two countries.
- Further, during the visit of the Crown Prince of Abu Dhabi to India in January 2017 as the chief guest at India's Republic Day celebrations, it was agreed that bilateral relations were to be upgraded to a comprehensive strategic partnership.
  - This gave momentum to launch negotiations for an India-UAE comprehensive economic partnership agreement.

#### ➤ Economic Relations:

- The economic partnership between India and the UAE has flourished, with bilateral trade reaching USD 85 billion in 2022-23. The UAE is India's third-largest trading partner and second-largest export destination.
  - The aim is to boost bilateral merchandise trade to above USD 100 billion and services trade to USD 15 billion in five years.
- Also, many Indian companies have set up manufacturing units either as joint ventures or in Special Economic Zones (SEZs) for cement, building materials, textiles, engineering products, consumer electronics, etc. in the UAE.
- Under India's revamped FTA strategy, the Government has prioritised at least six countries/

regions to deal with, in which the UAE figures at the top of the list for an early harvest deal (or Interim Trade Agreement), the others are the UK, the EU, Australia, Canada, Israel and a group of countries in the Gulf Cooperation Council (GCC).

- The UAE too announced earlier its intent to pursue bilateral economic agreements with India and seven other countries (U.K., Turkey, South Korea, Ethiopia, Indonesia, Israel, and Kenya).

#### ➤ Cultural Relations:

- The UAE is home to more than 3.3 million Indians, and Emiratis are well acquainted with and open to Indian culture. India participated as the Guest of Honour Country in Abu Dhabi International Book Fair 2019.
- Indian cinema/TV/radio channels are easily available and have good viewership; major theaters/cinema halls in the UAE screen commercial Hindi, Malayalam and Tamil films.
- The Emirati community also participates in our annual International Day of Yoga events and various schools of yoga & meditation centres are running successfully in the UAE.

#### ➤ Fintech Collaboration:

- Initiatives such as the acceptance of the RuPay card in the UAE since August 2019 and the operationalization of a Rupee-Dirham settlement system demonstrate mutual convergence in digital payment systems.
  - The framework for the use of local currencies for transactions between India and the UAE aims to put in place a Local Currency Settlement System (LCSS).

Note:

- The creation of the LCSS would enable exporters and importers to invoice and pay in their respective domestic currencies, which in turn would enable the development of an INR-AED (United Arab Emirates Dirham) **foreign exchange market**, according to the **RBI**.
- **Energy Security Cooperation:**
  - The UAE plays a crucial role in India's energy security, with **strategic oil reserves** stored facility in Mangaluru, India.
- **Strategic Regional Engagement:**
  - India and the UAE are actively engaged in various regional groupings and initiatives such as the **I2U2** and the **India-Middle East-Europe Economic Corridor (IMEC)**, reflecting shared interests and strategic alignment.

### ***What are the Challenges in India-UAE Relations?***

- **Trade Barriers Impacting Indian Exports:**
  - **Non-tariff barriers (NTBs)** like **Sanitary and Phytosanitary (SPS)** measures and **Technical Barriers to Trade (TBT)**, notably mandatory **Halal certification**, have impeded Indian exports, particularly in sectors such as poultry, meat, and processed foods.
    - These barriers have led to a significant decline in processed food exports to the UAE by almost

- 30% in recent years, according to a report from India's Ministry of Commerce and Industry.
- **Chinese Economic Influence in the UAE:**
  - **China's "Cheque Book Diplomacy,"** characterized by offering low-interest loans, has overshadowed Indian economic endeavors in the UAE and the broader Middle East.
- **Challenges of the Kafala System:**
  - **The Kafala system in the UAE**, which grants employers considerable power over immigrant labourers, especially those in low-wage jobs, presents significant **human rights concerns**.
    - Instances of **passport confiscation**, delayed wages, and poor living conditions underscore the challenges faced by migrant workers under this system.
- **Concerns Over UAE's Financial Support to Pakistan:**
  - The UAE's substantial financial aid to Pakistan raises apprehensions about the **potential misuse of these funds**, considering Pakistan's history of sponsoring cross-border terrorism against India.
- **Diplomatic Balancing Act Amid Regional Conflicts:**
  - India finds itself in a delicate diplomatic position due to the ongoing **conflict between Iran and Arab nations**, notably the UAE.
  - The recent outbreak of **war between Israel and Hamas** further aggravates the challenges as it runs the proposed IMEC into rough weather.

Note:

# Social Issues

## Highlights

- Amendment to Surrogacy Rules
- Kala Azar
- Guinea Worm Disease
- Senior Care Reforms in India: NITI Aayog
- High-Risk Pregnancies in India
- Rights of Forest Dwellers and Thanthai Periyar Sanctuary
- Asia-Pacific SDG Progress Report 2024

## Amendment to Surrogacy Rules

### Why in News?

Recently, the Indian government has amended the **Surrogacy (Regulation) Rules, 2022** and allowed married couples to use an **egg or sperm of a donor** in case one of the partners is suffering from a medical condition.

- This overturned a previous amendment made to the rules in **March 2023** that banned the use of donor gametes.

### What are the Major Provisions of the Amended Surrogacy Rules?

- **Background:** The **March 2023** amended rules only permitted the **use of the intending couple's own gametes**, barring couples with specific medical conditions from having biological children through surrogacy.
  - These restrictions caused distress and challenged the right to parenthood for affected couples.
  - It faced legal challenges in the **Supreme Court** by a woman with **Mayer-Rokitansky-Kuster-Hauser (MRKH) Syndrome**, a congenital disorder causing infertility.
    - The Supreme Court expressed skepticism regarding the efficacy of these regulations, asserting that such rules undermined the fundamental objectives of surrogacy.
- **Recent Amended Provisions:** It allows surrogacy with donor gametes if either spouse in the intending couple is certified by the **District Medical Board** to require donor gametes due to a medical condition.
  - This implies that **couples still cannot opt for surrogacy if both partners have medical issues.**

- For divorced or widowed women opting for surrogacy, it mandates the use of the woman's own eggs alongside donor sperm.

### What is Surrogacy?

- **About:** Surrogacy is an arrangement where a woman, known as the **surrogate mother**, agrees to carry and deliver a baby for another individual or couple, known as the intended parents.

### Types:

- **Traditional Surrogacy:** Traditional surrogacy involves using the intended father's sperm to fertilise the surrogate's egg.
  - The surrogate carries the pregnancy to term, and the **resulting baby is biologically related to the surrogate mother and the intended father.**
- **Gestational Surrogacy:** In gestational surrogacy, the baby is not biologically related to the surrogate.
  - An embryo, created using the intended father's sperm (or donor sperm) and the biological mother's egg (or donor egg), is implanted into the **surrogate's uterus for her to carry to term.**
- **Surrogacy Arrangements:**
  - **Altruistic Surrogacy:** It refers to a surrogacy arrangement where the surrogate does not receive financial compensation beyond reimbursement for medical expenses and other related costs.
    - The primary motivation for the surrogate in altruistic surrogacy is typically to help another individual or couple achieve their dream of having a child.
  - **Commercial Surrogacy:** It involves a contractual agreement where the surrogate mother receives **financial compensation beyond just reimbursement for medical expenses** and other costs associated with the pregnancy.

Note:

- This compensation may vary depending on factors such as location, legal regulations, and the specific terms of the surrogacy agreement.

### What are the Other Provisions Related to Surrogacy in India?

- **Permissibility:** Under the **Surrogacy (Regulation) Act 2021**, Surrogacy is permissible only for **altruistic purposes** or for couples with proven infertility or disease.
  - **Commercial surrogacy**, including for sale or exploitation purposes, is strictly prohibited.
- **Eligibility Requirements for Couples:** Couples must be married for at least 5 years.
  - The wife must be aged between **25-50 years**, and the husband between **26-55 years**.
  - The couple must not have any living child, whether **biological, adopted, or through surrogacy**, except in cases of children with disabilities or life-threatening disorders.
- **Surrogate Mother Criteria:** The surrogate mother must be a close relative of the couple.
  - She must be a married woman with at least one child of her own.
  - Her age must be between **25-35 years**, and she must have only been a surrogate once in her life.
- **Parental Status upon Birth:** Upon birth, the child is legally recognized as the biological child of the intended couple.
  - Abortion of the fetus requires consent from both the surrogate mother and the relevant authorities, following the provisions of the **Medical Termination of Pregnancy Act**.

## Kala Azar

### Why in News?

India achieved significant progress in eliminating **Kala Azar (KA)**, reporting **less than one case per 10,000 population in 2023**, compared to previous years.

- Data from the **National Vector Borne Disease Control Programme** revealed a decline in Kala Azar cases, with 595 cases and four deaths reported in 2023 compared to 891 cases and three deaths in 2022.

### Note:

- India has not yet eliminated KA but has made substantial progress towards its elimination goal.
  - India's initial target year for Kala Azar elimination was 2010, which was later extended to 2015, 2017, and then 2020.
- The **WHO** defines elimination for KA as having **fewer than one case per 10,000 people at the sub-district (block Primary Health Centres) level** in India. Once achieved, the elimination is to be sustained for 3 years for KA elimination certification.
  - India will need to sustain this momentum over the **next three years to receive WHO certification**, considering that India has missed at least four deadlines for Kala Azar elimination.
- In Oct 2023, **Bangladesh became the first country, globally**, to be officially validated by the WHO for eliminating Kala Azar as a public health problem.

### What are the Key Facts About Kala Azar?

- **About:**
  - Kala-azar (**visceral leishmaniasis**), also known as **Black Fever** is a fatal disease caused by a protozoan parasite **Leishmania donovani**.
- **Symptoms:**
  - It is characterised by irregular bouts of fever, weight loss, enlargement of the spleen and liver, and anaemia.
- **Prevalence:**
  - Most cases occur in Brazil, east Africa and India. An estimated 50,000 to 90 000 new cases of VL occur worldwide annually, with only 25-45% reported to WHO. It has an outbreak and mortality potential.
- **Transmission:**
  - Leishmania parasites spread through bites of infected female sandflies, feeding on blood for egg production. Over 70 animal species, **including humans, can carry these parasites**.
- **Major Risk Factors:**
  - Poverty, poor housing, and sanitation.
  - Diets lacking essential nutrients.
  - Movement into high-transmission areas.
  - Urbanisation, deforestation, climate change.
- **Diagnosis and Treatment:**
  - Suspected visceral leishmaniasis cases require immediate medical attention. Diagnosis involves

Note:

clinical signs combined with parasitological or serological tests.

- Left untreated, it can be **fatal in 95% of cases**.

#### ➤ Prevention and Control:

- **Early diagnosis and prompt treatment** are crucial in reducing disease prevalence, and preventing disabilities, and death.
- **Vector control, such as insecticide spray** and the use of insecticide-treated nets, helps reduce transmission by decreasing the number of sandflies.
- **Effective disease surveillance** is important for monitoring and acting during epidemics and high case fatality rates.
- **Social mobilization and strengthening partnerships**, including community education and collaboration with stakeholders, are critical for effective control.

#### ➤ India's Efforts to Control Kala Azar:

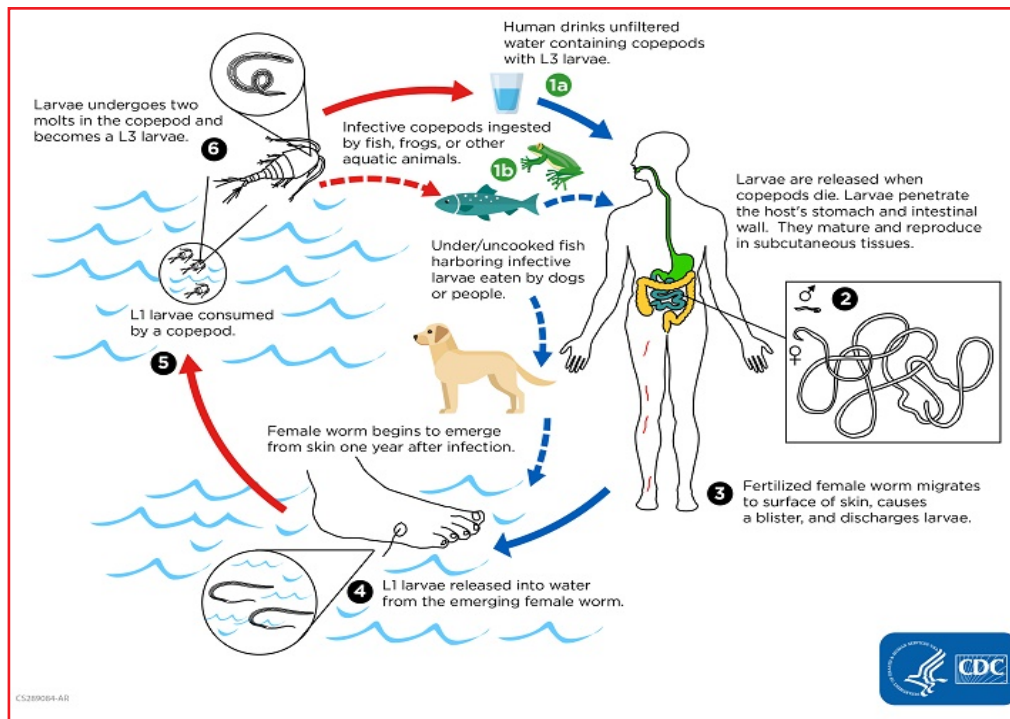
- The Government of India launched a **centrally sponsored Kala-azar control program in 1990-91**, which was later revised in 2015.
  - The program aimed to eliminate Kala-azar by

**2023**, aligning with the WHO **neglected tropical diseases (NTDs) Roadmap goal of 2030**.

- The **National Vector Borne Disease Control Programme (NVBDCP), 2003** is an umbrella programme for prevention and **control of vector borne diseases** viz., malaria, lymphatic filariasis, **kala azar**, and chikungunya.
- **Recent Efforts:**
  - Rigorous indoor residual spraying effort aimed at curtailing sandfly breeding sites; application of a **special soil to seal crevices in mud walls**, preventing sandflies from nesting.
  - Pucca houses in KA-affected villages have been constructed under PMAY-G - A total of 25,955 houses in 2017-18 (1371 houses in Bihar & 24584 in Jharkhand).
  - Mobilisation of the **ASHA (Accredited Social Health Activist) network** to ensure completion of treatment for PKDL patients, who require a 12-week course of Miltefosine (an antileishmanial agent).

### Post-kala-azar Dermal Leishmaniasis (PKDL)

- PKDL is a skin condition that **follows visceral leishmaniasis**, causing rashes on the face, arms, and trunk.
- It affects mainly Sudan and the Indian subcontinent, with 5-10% of kala-azar patients developing it.
- PKDL may occur 6 months to a year after kala-azar treatment, potentially spreading Leishmania.



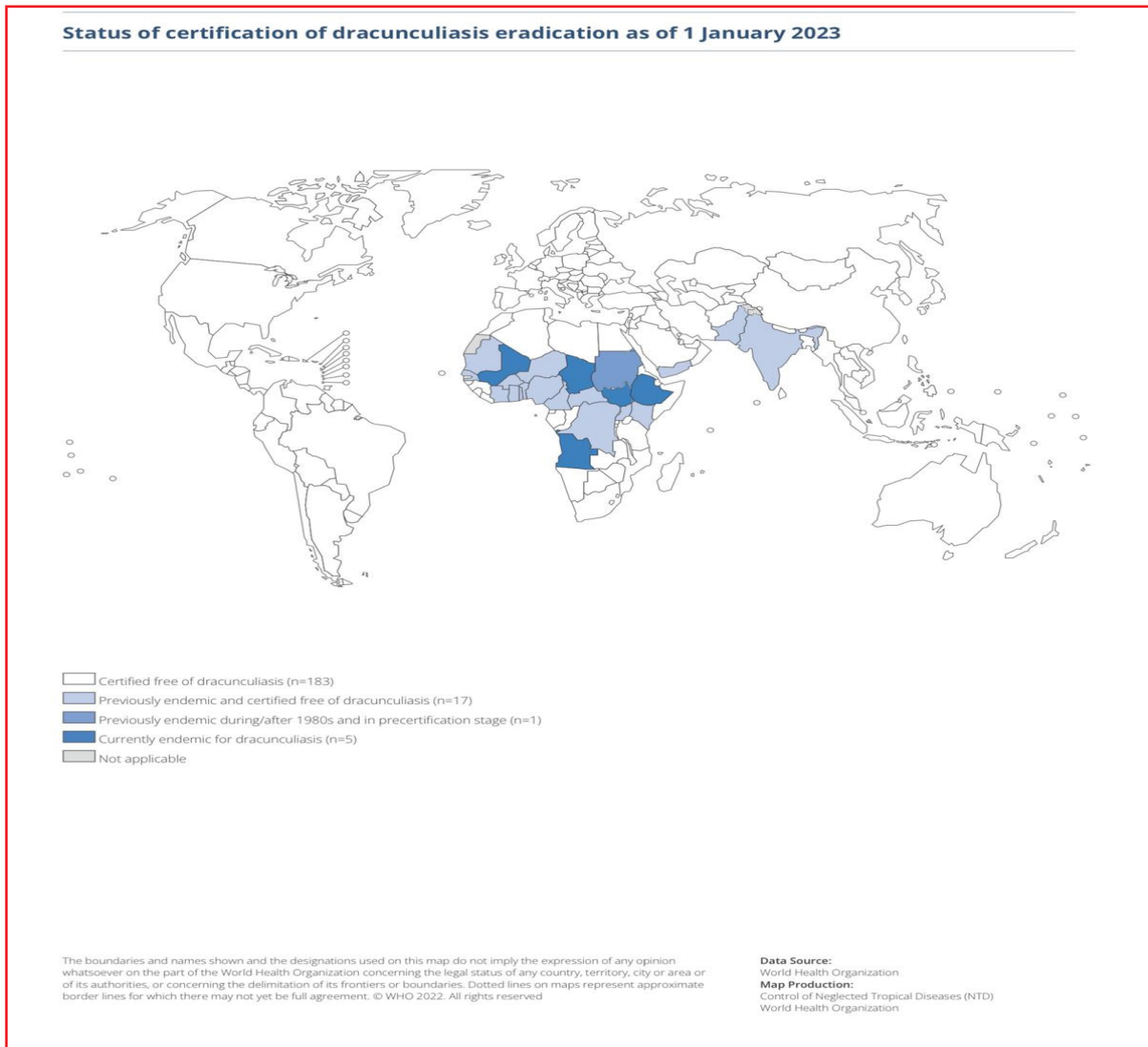
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## Guinea Worm Disease

### Why in News?

Recently, the **World Health Organization's (WHO)** report has shed light on a remarkable milestone in global public health: **the imminent eradication of Guinea worm disease.**

- This **parasitic infection**, which **plagued millions in the 1980s**, has dwindled to just a **handful of cases in recent years**, signalling a triumph of human resilience and concerted eradication efforts.



### What are the Key Facts About Guinea Worm Disease?

- **About:**
  - Guinea worm disease, or Dracunculiasis is caused by the **Guinea worm (*Dracunculus medinensis*)**, a parasitic nematode is a debilitating parasitic disease that renders infected **individuals non-functional for weeks or months.**
  - It primarily affects **people in rural, deprived, and isolated communities** who rely on stagnant surface water sources for drinking.

Note:

- In the mid-1980s, an estimated 3.5 million cases of dracunculiasis occurred in 20 countries worldwide, mainly in Africa and Asia.
- **Transmission, Symptoms and Impact:**
  - The parasite is transmitted when people drink **stagnant water contaminated with parasite-infected water fleas**.
  - The disease manifests with **painful skin lesions** as the worm emerges, causing **weeks of intense pain, swelling, and secondary infections**.
  - More than **90% of infections occur in the legs and feet**, affecting individuals' **mobility and ability to work** or perform daily tasks.
- **Prevention:**
  - There is **no vaccine or medication** to treat Guinea worm disease, but **prevention strategies have been successful**.
    - Strategies include heightened surveillance, preventing transmission from each worm through treatment and wound care, filtering water before drinking, larvicide use, and health education.
- **Road to Eradication:**
  - Efforts to eradicate Guinea worm disease began in the 1980s, with significant contributions from organisations like **WHO**.
    - Countries are **certified as free of dracunculiasis transmission** after reporting **zero instances for at least three consecutive years**.
  - Since 1995, WHO has certified 199 countries, territories, and areas as free of dracunculiasis transmission.
- **India's Success Story:**
  - **India achieved Guinea worm disease elimination in the late 1990s** through rigorous public health measures, including water safety interventions and community education.
    - The government of **India received Guinea worm disease-free certification status** from the WHO in 2000.
    - India has eradicated **Smallpox** (1980), **Polio** (2014), **Plague, Rinderpest (the Cattle Plague)**, **Yaws** and **Maternal And Neonatal Tetanus (2015)**.
- **Ongoing Surveillance and Challenges:**
  - Active surveillance is essential to ensure no cases are missed and to prevent the disease's re-emergence.

- Challenges persist in regions like **Chad and the Central African Republic, where civil unrest and poverty** hamper eradication efforts.
- Challenges include finding and containing the last remaining cases, particularly in remote areas, and addressing infections in animals, notably dogs.

## Senior Care Reforms in India: NITI Aayog

### Why in News?

Recently, the **NITI Aayog** has released a position paper titled "**Senior Care Reforms in India: Reimagining the Senior Care Paradigm**", which calls for action on what needs to be done to bring a greater focus on senior care.

### What are the Key Highlights of the Report?

#### ➤ Population Ageing:

- India is witnessing exponential growth in the number and proportion of **elderly people**, coupled with a **decreasing fertility rate (less than 2.0)** and increasing life expectancy (more than 70 years).
- The elderly in India currently comprise a little **over 10% of the population**, which translates to about 104 million. According to the **United Nations Population Fund (UNFPA)**, this demographic is **projected to reach 19.5% of the total population by 2050**.

#### ➤ Major Key Findings:

- **Demographics and Trends:** The elderly population (aged 60 years and above) constituted 8.6% of India's total population in the 2011 Census, with approximately 103 million elderly individuals.
- **Health Status and Challenges:** The transition from high to low mortality rates has shifted a substantial burden of disease to the older population.
  - The number of people aged 75 years and above is expected to increase by an astounding 340% between 2011 and 2050.
- **Rural Urban Divide:** 71% of elderly persons reside in rural areas.
- **Life Satisfaction:** Nearly 32% of the elderly reported low life satisfaction
- **Lack of Comprehensive Policy:**
  - There is an absence of a comprehensive, integrated policy for senior care and support as a significant challenge.

Note:



- This lack of a structured policy framework leads to gaps in infrastructure, capacities, evidence-based knowledge repositories for geriatric illness management, and enabling frameworks for monitoring mechanisms and emergency response systems.
  - Access to healthcare services can be a challenge for older adults in India, particularly those living in rural areas.
  - As per the National Health Profile, in 2017, there were only 43 physicians per 100,000 population in rural areas, compared to 118 physicians per 100,000 population in urban areas.
- **Challenges and Implications:**
  - The phenomenon of population aging impacts all aspects of society and has numerous health, social, and economic implications, including changes in labour and financial markets.
    - The **Longitudinal Ageing Study of India (LASI) 2021** report highlights that a significant portion of the elderly population suffers from chronic diseases, functional limitations, depressive symptoms, and low life satisfaction.
      - 75% of the elderly have one or more chronic diseases.
    - It shifts disease burden, rising dependency ratios, evolving family structures, and altered consumption patterns.
      - Every 4<sup>th</sup> Indian over 60 years reported having poor health.
    - Moreover, medical expenses are more than double for this population segment as older people are likely to consume more healthcare services.
      - Around 20% of the elderly in India have mental health issues.

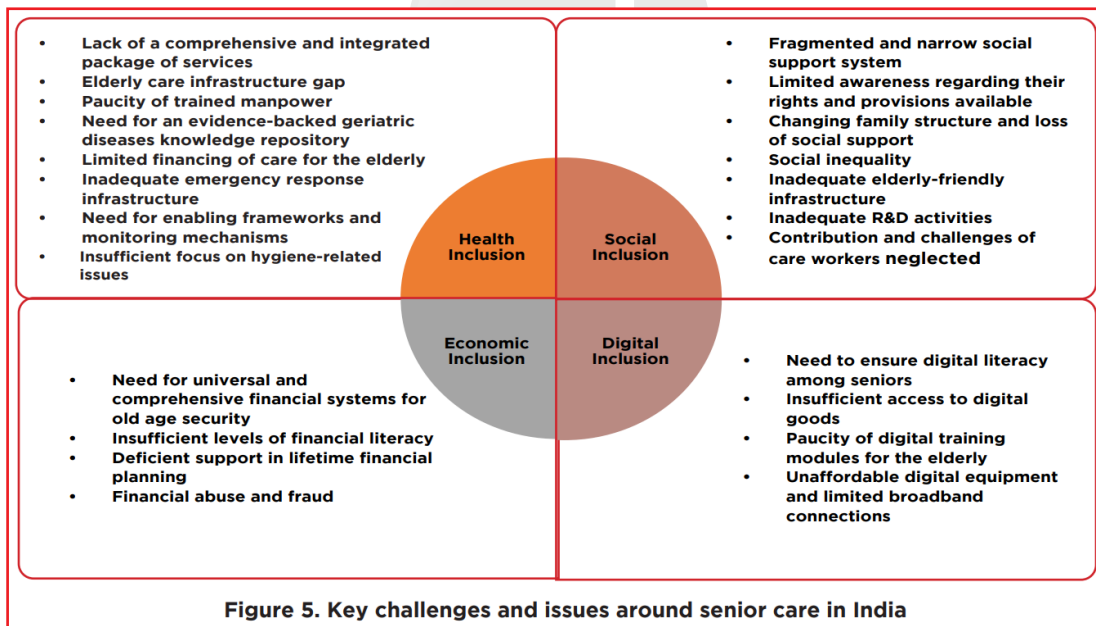


Figure 5. Key challenges and issues around senior care in India

### What are the Key Recommendations of the Report?

- The report has categorised the specific interventions needed in terms of empowerment, service delivery, and their inclusions under four core areas: **Health, Social, Economic/Financial, and Digital**.
  - **Health:** Health empowerment and inclusion can be achieved by promoting health literacy among seniors as well as their caregivers, strengthening geriatric healthcare within the existing healthcare system, and making special provisions for seniors.
    - This will encompass Comprehensive Primary Healthcare Services through the **Ayushman Bharat – Ayushman Arogya Mandir (Health and Wellness Centres)**, strengthening healthcare infrastructure with a focus on needs of elderly, expanding tele-consultation services, enhancing the skilled workforce for the elderly, and capacity building of existing workforce.

Note:

- **Social:** For ensuring social inclusion and empowerment, specific actions such as creating awareness to sensitise the larger community on the needs and **challenges experienced by the elderly**, and establishing peer support groups are needed.
  - Empowerment of the elderly will also come through awareness of existing legal safeguards, and welfare schemes and ensuring legal reforms like strengthening the existing **Welfare and Maintenance Act**.
- **Economic and Financial:** There is a need for **reskilling the elderly population**, increasing coverage of public funds and infrastructure, and mandatory savings plans for the affording segment.
  - Reverse Mortgage mechanism to increase **liquidity for seniors and GST (Goods and Service Tax) reforms** on senior care products to increase

the ease of adoption and safeguard the elderly population from the financial burden.

- Encouraging the private sector to design targeted and comprehensive geriatric health insurance products.
- **Digital:** There is a need to improve access to digital devices for seniors by making them affordable, focusing on increasing digital literacy, and harnessing the potential of modern technology.
- **Silver Economy:** Only a little more **than one-third (34%)** of the elderly are currently working.
  - Appropriate interventions are required on the part of the government to provide a thrust to the **“silver economy,” i.e. economy driven by goods & services** demanded by the elderly.
  - Further, work opportunities that can provide a platform for the elderly to use and utilise their experience and expertise in various sectors.



### What are the Initiatives Related to Senior Care and Aging?

#### ➤ Initiative Taken at global level:

- **Vienna International Plan of Action:** It is the first international initiative that sparked the debate around ageing.
  - The plan was adopted by the **World Assembly on Ageing in 1982** and endorsed by the **UN General Assembly**.
  - It seeks to increase the ability of governments and civil society to deal with population ageing and serves as a framework for developing policies and programs on ageing.
- **United Nations Principles for Older Persons:** The Vienna International Plan on Ageing was followed by the adoption of the United Nations Principles

for Older Persons by the UN General Assembly in 1991.

- **Madrid International Plan of Action on Ageing (MIPAA):** In 2002, the **Second World Assembly on Ageing** adopted the Political Declaration and the Madrid International Plan of Action on Ageing (MIPAA).
  - The MIPAA aims at **“building a society for all ages”** and indicates a paradigm shift in how the world approaches ageing.
  - Moreover, the plan offers a comprehensive framework for **understanding and managing the issue of ageing**.
- **2021-2030 as the ‘Decade of Healthy Ageing:** In 2020, the **United Nations General Assembly** declared **2021-2030 as the ‘Decade of Healthy Ageing,’** urging governments, civil societies,

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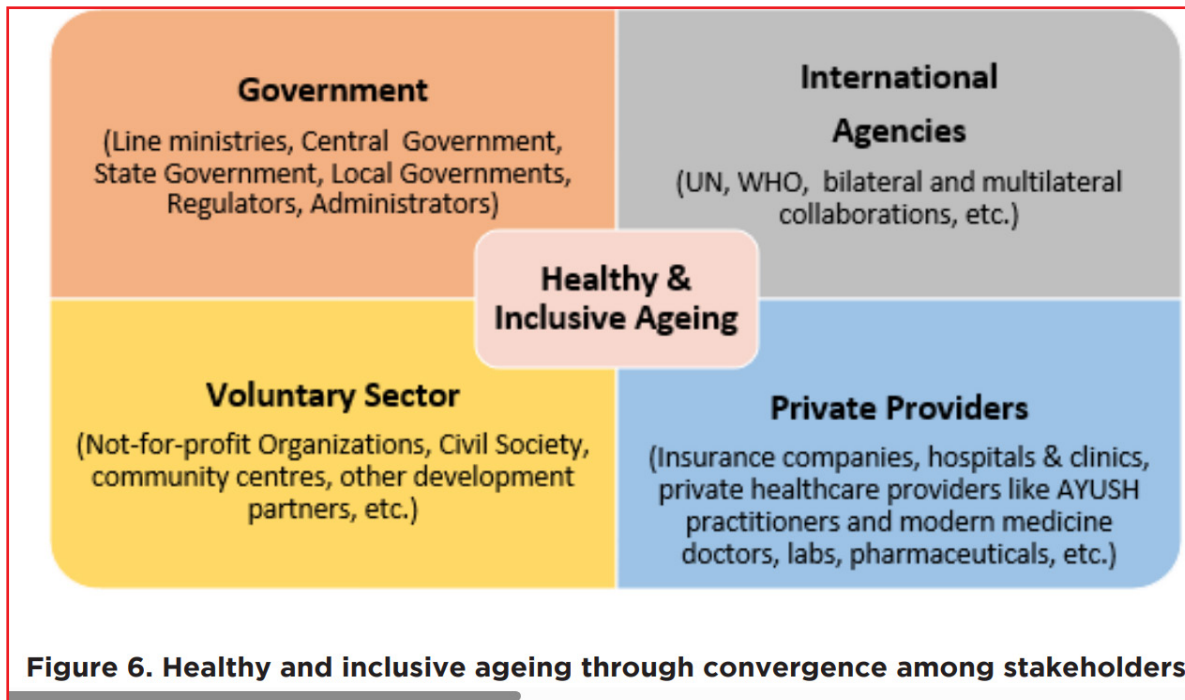
international organizations, professionals, academia, media, and the private sector to work together towards improving the lives of older people, their families, and the communities in which they live.

➤ **Initiatives Taken by Indian Government:**

- **Pradhan Mantri Vaya Vandana Yojana (PMVVY):**
  - The scheme enables old age income security for senior citizens through provision of assured pension/return linked to the subscription amount based on government guarantee to **Life Insurance Corporation of India (LIC)**.
    - The scheme provides an assured return of 8% per annum for 10 years.
- **Integrated Program for Older Persons (IPOP):**
  - The main goal of this policy is to improve the quality of life of senior citizens.
  - This is done by providing them with various basic amenities such as food, shelter, medical care, and even entertainment opportunities.
- **Rashtriya Vayoshree Yojana:**
  - It is a **central sector scheme** funded from the **Senior Citizens' Welfare Fund**. The fund was notified in the year 2016.
  - All unclaimed amounts from small savings accounts, Employee Provident Fund (EPF) and Public Provident Fund (PPF) are transferred to this fund.
  - It aims to provide aids and assistive living devices to **senior citizens** belonging to **Below Poverty Line (BPL)** category who suffer from age-related disabilities such as low vision, hearing impairment, loss of teeth and locomotor disabilities.
- **SAMPANN Project:**
  - It was launched in 2018. It is a **seamless online pension processing** and payment system for Department of Telecommunications pensioners
  - It provides direct credit of pension into the bank accounts of pensioners.
- **SACRED Portal for Elderly:**
  - The portal was developed by the Ministry of Social Justice and Empowerment.

- Citizens above 60 years of age can register on the portal and find jobs and work opportunities.
- **Elder Line: Toll-Free Number for Elderly:**
  - It provides information, guidance, and emotional support - particularly on pension, medical and legal issues - besides immediate assistance in cases of abuse.
  - It is devised to provide all senior citizens, or their well-wishers, with one platform across the country to connect and share their concerns and get information and guidance on problems that they face on a day-to-day basis.
- **SAGE (Seniorcare Ageing Growth Engine) Initiative:**
  - It is a "one-stop access" of elderly care products and services by credible start-ups.
  - It has been launched with a view to help such persons who are interested in entrepreneurship in the field of providing services for elderly care.
- **Constitutional Provisions for the Welfare of Elderly People:**
  - **Article 41:** Right to work, to education, and to public assistance in certain cases - The State shall, within the limits of its economic capacity and development, make effective provision for securing the right to work, to education, and to public assistance in cases of unemployment, old age, sickness, and disablement, and in other cases of undeserved want.
  - **Article 46:** Promotion of educational and economic interests of Scheduled Castes, Scheduled Tribes, and other weaker sections - Other weaker sections **include the elderly, disabled, etc.**
  - **7<sup>th</sup> Schedule of the Indian Constitution: Item No. 9 of the State List** and item 20, 23 & 24 of the Concurrent List **relates to the old age pension, social security** and social insurance, and economic and social planning.
  - **Entry 24 in the concurrent list:** It deals with "Welfare of Labour, including conditions of work, provident funds, liability for workmen's compensation, invalidity and old age pension and maternity benefits.

Note:



#### What is NITI Aayog?

- **NITI Aayog** is the apex public policy think tank of the Government of India.
- It replaced the Planning Commission on 1<sup>st</sup> January 2015 with emphasis on '**Bottom –Up**' approach to envisage the **vision of Maximum Governance, Minimum Government**, echoing the spirit of '**Cooperative Federalism**'.

## High-Risk Pregnancies in India

### Why in News?

A recent study published in Journal of Global Health by researchers from the **ICMR's National Institute for Research in Reproductive and Child Health (NIRRH)** in Mumbai, sheds light on the prevalence of **high-risk pregnancies** across India.

- A high-risk pregnancy indicates that a woman possesses one or more factors that elevate the **likelihood of health complications for either herself or the baby**, as well as an increased risk of preterm delivery.

### What are the Key Findings of the Study?

- **High Prevalence:** The study found that **49.4% of pregnant women in India** had high-risk pregnancies.

- Approximately **33%** of pregnant women had a single high-risk factor, while **16%** had multiple high-risk factors.
- **Regional Disparities:** States like **Meghalaya, Manipur, and Mizoram**, along with **Telangana**, exhibited the highest prevalence of high-risk factors.
  - Conversely, **Sikkim, Odisha, and Chhattisgarh** had the lowest prevalence of high-risk pregnancies.
- **Factors Contributing to High-Risk Pregnancies:**
  - **Birth Spacing:** Short birth spacing, defined as **less than 18 months between previous birth and current conception**, was identified as a primary factor contributing to high-risk pregnancies.
  - **Maternal Risk Factors:** These included factors such as maternal age (adolescent or older than 35 years), short stature, and higher body mass index (BMI).
  - **Lifestyle and Previous Birth Outcome Risks:** Lifestyle risk factors like **tobacco and alcohol use**, as well as previous adverse birth outcomes such as miscarriage, abortion, or stillbirth, were significant contributors to high-risk pregnancies.

### What are the Indian Government Initiatives Related to Pregnant Women?

- **Pradhan Mantri Matru Vandana Yojana:** It is being implemented as per provisions under **Section 4 of**

Note:



the **National Food Security Act (NFSA), 2013** which provides for financial support for pregnant and lactating mothers is to improve the health and nutrition for mother and child as well as compensation for wage loss.

- **Janani Suraksha Yojana (JSY)**: Provides cash assistance to pregnant women, especially from vulnerable sections, to encourage institutional delivery.
- **Janani Shishu Suraksha Karyakram (JSSK)**: Entitles all pregnant women to free delivery, including **C-sections (Caesarean section)**, in public health institutions along with free transport, diagnostics, medicines, and diet.
- **Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)**: Provides pregnant women a fixed day, free of cost assured and quality antenatal check up by a **Specialist/Medical Officer** on the 9<sup>th</sup> day of every month.
- **Surakshit Matratva Ashwasan (SUMAN)**: Aims to ensure dignified, respectful, and quality healthcare at no cost for every pregnant woman and newborn in public facilities.
- **LaQshya**: Aims to improve the quality of care in **labour rooms**, potentially reducing complications and improving maternal and newborn outcomes.

Read More: [Stem Cells in Menstrual Blood](#)

## Rights of Forest Dwellers and Thanthai Periyar Sanctuary

### Why in News?

In recent events surrounding the notification of the **Thanthai Periyar Sanctuary in Tamil Nadu**, **forest-dwellers** expressed concerns about the **potential denial of their rights** under the **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 (FRA)**.

### What are the Concerns Regarding the Notification of the Thanthai Periyar Sanctuary?

- The notification excludes **six tribal forest villages from the sanctuary**, confining them to a small area of 3.42 sq. km, without recognizing them as revenue villages.
- The notification also imposes **restrictions on cattle-grazing activities**, which may affect the traditional practices of the **Bargur cattle**, a traditional breed native to the Bargur forest hills.
- The notification does not mention the **consent of the forest rights holders or the gram sabha**, as required by the FRA, 2006.

### Note:

- In March 2022, the **Madras High Court** revised an older order imposing a total ban on cattle grazing in all the forests of Tamil Nadu and **restricted the ban to National Parks, Sanctuaries, and Tiger Reserves**.
  - Tamil Nadu is the only state in the country where there is such a ban.
- This order is despite the FRA 2006, which acknowledges the **grazing and traditional resource access of nomadic or pastoralist communities**, this order applies to all forests, including National Parks, Sanctuaries, and Tiger Reserves. Grazing rights are community rights of the habitation-level villages and are to be regulated by their **gram sabhas**.

### What is the Forest Rights Act (FRA), 2006?

#### About:

- FRA, 2006 acknowledges the **rights of forest-dwelling tribal communities and traditional forest dwellers** to forest resources, essential for their livelihoods, habitation, and socio-cultural needs.
- The Act rectifies the historical injustice faced by these communities by recognizing their symbiotic relationship with forests, which was previously overlooked by forest management policies.
- **Forest Dwellers Rights Under FRA, 2006:**
  - Under the FRA, forest dwellers are granted **individual rights such as self-cultivation and habitation**, as well as **collective or community rights** including grazing, fishing, access to water bodies, and traditional seasonal resource access for nomadic and pastoral communities.
  - The Act also recognizes the rights of **Particularly Vulnerable Tribal Groups (PVTGs)**, intellectual property rights, customary rights, and the right to protect, regenerate, or manage community forest resources sustainably.
  - Additionally, it provides for the **allocation of forest land for developmental purposes** to meet the basic infrastructural needs of forest-dwelling communities.
  - Importantly, the FRA works in conjunction with other relevant legislation such as the **Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Settlement Act of 2013**, to safeguard forest dwellers from eviction without proper rehabilitation and settlement.

Note:

- The Act further enjoins upon the **Gram Sabha (village assembly), to play a central role in the implementation of the Act.**
  - The Gram Sabha is also a highly empowered body under the Act, enabling the **tribal population to have a decisive say** in the determination of local policies and schemes impacting them.
  - FRA requires and authorises the gram sabha to determine and recognise forest rights and protect and preserve the forests, wildlife, and biodiversity within their customary and

traditional boundaries, including inside Protected Areas.

- Violations of the FRA, particularly concerning Scheduled Tribes, are considered crimes under the **2016 amendment to the Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act of 1989.**
- FRA states that **converting forest villages into revenue villages** is one of the forest rights of forest-dwelling Scheduled Tribes and other traditional forest dwellers.

#### Note:

- When notifying a Protected Area under the **Wild Life (Protection) Act (WLPA), 1972**, the government must assess rights under the FRA, 2006 and obtain consent from the gram sabhas.
  - FRA 2006, being a later law, supersedes the WLPA,1972. Any provisions in the WLPA that conflict with the FRA are considered null and void.

#### What are the Key Facts About Thanthai Periyar Sanctuary?

- The Thanthai Periyar Wildlife Sanctuary spans 80,114.80 hectares in the Bargur Hills of Erode district, Tamil Nadu.
- It has been declared the 18<sup>th</sup> wildlife sanctuary in the state, connecting the **Nilgiris Biosphere Reserve** with the **Cauvery South Wildlife Sanctuary.**
- Positioned at the junction of the **Eastern Ghats** and the **Western Ghats**, the sanctuary boasts rich biodiversity.
- The sanctuary is part of the tiger corridor connecting

#### **Sathyamangalam Tiger Reserve, Male Mahadeshwara Hills Tiger Reserve, and Cauvery Wildlife Sanctuary.**

- Recognized by the **National Tiger Conservation Authority**, it supports a viable tiger population and is crucial for their conservation.
- The region is a significant part of the **Nilgiris Elephant Reserve**, housing a healthy population of elephants and **Indian Gaur**.
  - It serves as the catchment area for the **Palar River**, which feeds into the Cauvery River, supporting agricultural activities.

#### Comparison of Biosphere Reserve, National Park and Wildlife Sanctuary

Feature	Biosphere Reserve	National Park	Wildlife Sanctuary
Purpose	Promote sustainable development, conserve biodiversity, cultural heritage, and natural resources	Conserve natural environment, <b>protect from human interference</b>	Protect habitats of wild animals, promote breeding
Management	Internationally recognized under the <b><u>UNESCO's Man and Biosphere (MAB) program</u></b> and owned by the government.	Government has complete power over the national parks.	These can be under the government or owned under private entities.
Zones	<b>Core zone</b> (strictly protected), <b>Buffer zone</b> (limited human activities allowed), <b>Transition zone</b> (sustainable development encouraged)	Typically not divided into zones	Generally not divided into zones
Human Activities	Restricted in core zone, limited in buffer zone, encouraged in transition zone	Restricted, mainly for recreational purposes	Restricted to prevent disturbance to animals, limited educational access

Note:

Examples	Nanda Devi (Uttarakhand), Nokrek (Meghalaya)	Jim Corbett (Uttarakhand), Bandhavgarh (Madhya Pradesh)	Gir National Park (Gujarat), Chilka Lake Bird Sanctuary (Odisha)
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## Asia-Pacific SDG Progress Report 2024

### Why in News?

Recently, the [United Nations Economic and Social Commission for Asia and the Pacific \(UNESCAP\)](#) published the [Asia and the Pacific SDG Progress Report 2024](#). This report focuses on **success stories, trends, and the distinct challenges encountered** in various parts of the region in striving towards the [SDGs](#).

### What is Asia and the Pacific SDG Progress Report?

- The [Asia and the Pacific SDG Progress Report](#) is one of the annual flagship publications of the [United Nations](#)

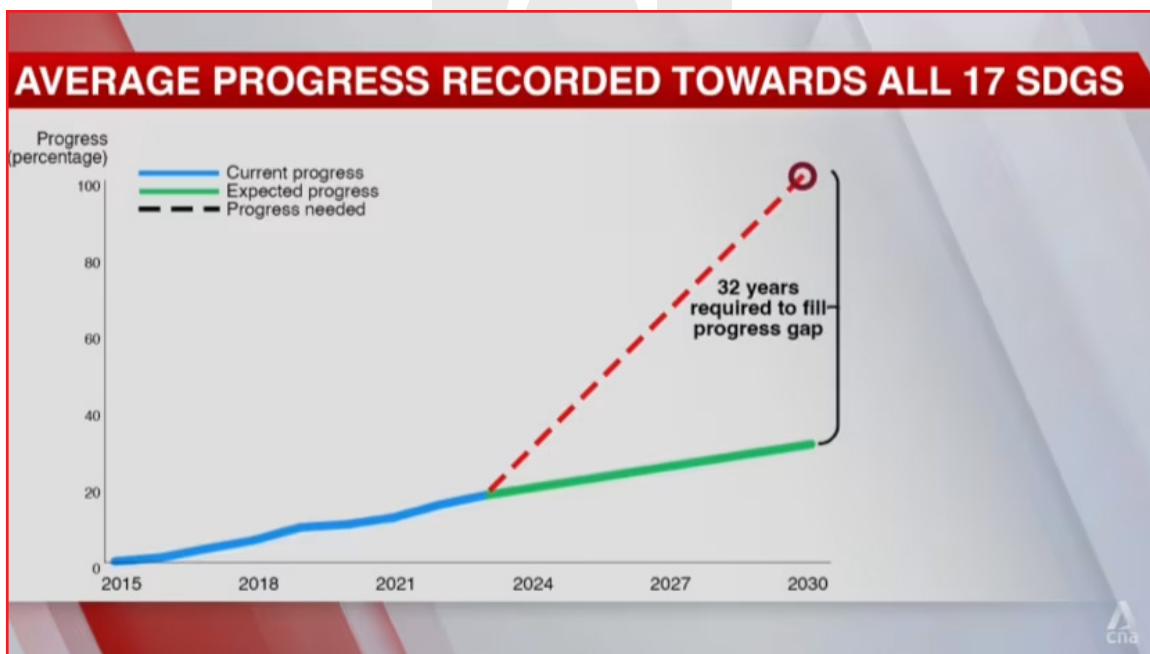
**ESCAP.** It provides an overview of SDG Progress in the region which serves as a foundation for many other activities conducted by ESCAP and its partners.

- It draws out the priorities for enhancing data availability on SDG indicators, especially for the most vulnerable population groups, which could help shape more equitable and inclusive development strategies.

### What are the Key Highlights of the Report?

#### ➤ Overall Progress Delayed:

- Progress on the [17 Sustainable Development Goals \(SDGs\)](#) remains uneven and inadequate across various segments of the population and within the five subregions of [Asia and the Pacific](#).
- At the current pace, the region will not achieve all SDGs until 2062, which marks a significant **32-year delay from the target year of 2030**.



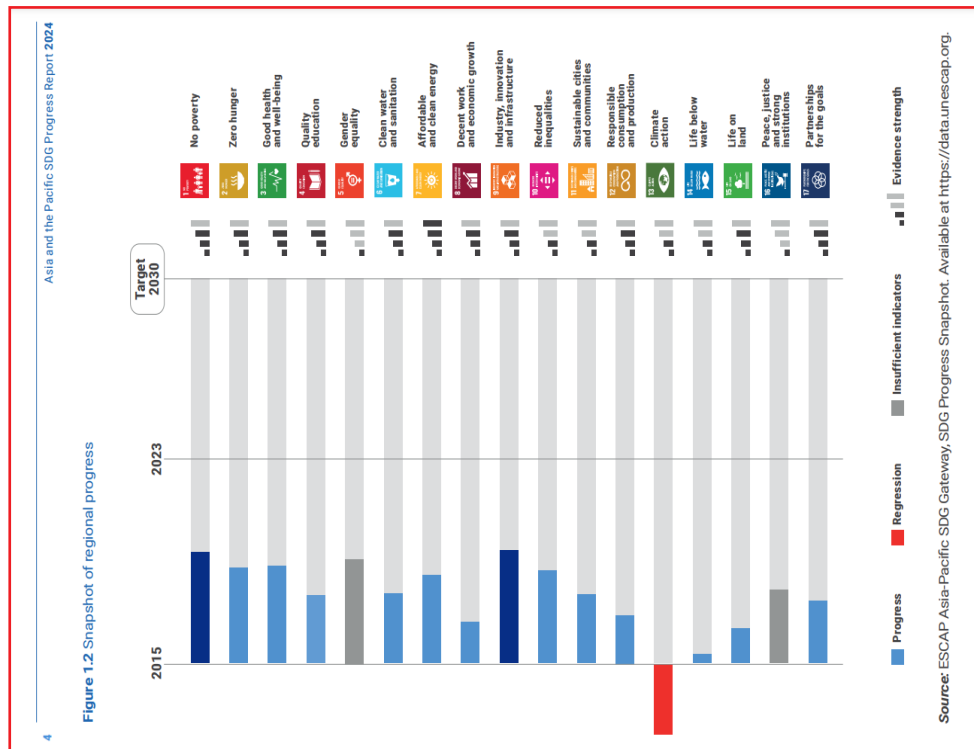
#### ➤ Limited Progress on Measurable Targets:

- Only 11% of the 116 measurable SDG targets are on track. **By 2030**, the region is projected to achieve **only one-third of the required progress** if the current trajectory continues.

#### ➤ Climate Action Lagging:

- Progress on **SDG 13 (Climate Action)** remains critically behind, with all SDG 13 targets either stalled or reversing, highlighting the urgent need to incorporate climate action into national policies and strengthen resilience to cope with climate-related disasters.

Note:



#### ➤ Data Gaps Impede Monitoring:

- Close to 67% of the 169 SDG targets in the Asia-Pacific region are currently not measurable.
  - 62.5% of indicators under the climate goal (SDG 13) lack the data required for monitoring progress.
- Data availability has improved since 2017 but remains insufficient for 53 targets, including three climate-related ones.

#### ➤ Gender Inequality:

- Despite overall progress in school enrolment rates, women and girls in the region **continue to face considerable challenges** when it comes to accessing education and employment opportunities.
- They have **lower enrolment rates and struggle with literacy**. Young women also encounter difficulties accessing labour markets, leading to higher rates of youth unemployment.
- Meanwhile, the challenges faced by men tend to be related to **their health or personal safety**.
  - They suffer from higher rates of suicide, **chronic diseases and road traffic deaths**.

#### ➤ Interconnectedness of Goals:

- Progress on goals such as **ending hunger (SDG 2)**,

enhancing health and well-being (SDG 3), ensuring clean water and sanitation (SDG 6), expanding affordable and clean energy (SDG 7), and building sustainable cities and communities (SDG 11) has also been limited.

- These goals are closely linked with **Climate Change** and face challenges that could disrupt progress in the region.

#### ➤ Warning on Global Risks:

- Climate change and **extreme weather** events are identified as **severe global risks** over the next decade, further emphasising the importance of addressing climate action to achieve SDG targets.

#### ➤ National Success Stories:

- In the **Philippines**, dedicated research and analysis aimed at **estimating the cost of supporting children living with a disability** played a pivotal role in influencing recent legislation to provide a disability allowance, extending support to children with disabilities.
- **Nationwide digital training programmes in Vietnam** have underscored the value of **Public-Private Partnerships** in accelerating digital transformation and bridging the skills and employment gap for youth and migrant workers.

Note:



- Meanwhile, in North and Central Asia, **national statistical systems** in Kazakhstan, Kyrgyzstan, Turkmenistan and Uzbekistan have been **upgraded to better support stateless populations**.

➤ **Key Recommendations of the Report:**

- There is urgency in **addressing inequalities that impact marginalised groups**, including women, girls, rural populations and the urban poor, who continue to find themselves locked out of education and employment opportunities.
- There is a need for a **significant increase in investment in sustainable infrastructure** and renewable energy sources to address the challenges posed by Climate Change and achieve various SDGs.

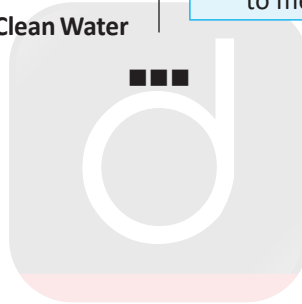
➤ **India's Progress on SDG as per the Report:**

- India's overall SDG score **improved by 6 points, rising from 60 in 2019 to 66 in 2020–21**.
- Notable achievements include **Goal 6 (Clean Water**

**and Sanitation)** and **Goal 7 (Affordable and Clean Energy)**, with composite goal scores of 83 and 92, respectively.

**United Nations Economic and Social Commission for Asia and the Pacific**

- The **United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)** is the regional development arm of the United Nations for the Asia-Pacific region.
- It has 53 Member States and 9 Associate Members from the Asia-Pacific Region including India.
- **Established:** 1947
- **Headquarters:** Bangkok, Thailand
- **Objective:** To overcome some of the region's greatest challenges by providing results-oriented projects, technical assistance and capacity building to member States.



Note:

# Science & Technology

## Highlights

- Google DeepMind's Genie
- Large Language Models
- Neurovascular Tissues/Organoids
- Astronomers Uncover Hot Helium Stars
- Snake Venom Neutralising Antibody
- The iOncology-AI Project
- Stem Cells in Menstrual Blood
- GSLV-F14/INSAT-3DS Mission

## Google DeepMind's Genie

### Why in News?

Recently, **Google DeepMind** has introduced **Genie AI (Artificial Intelligence)**, a new model that can generate interactive video games from just a text or image prompt.

- Google DeepMind is a British-American AI research laboratory that is a subsidiary of Google. DeepMind is based in London and has research centres in Canada, France, Germany, and the US.

### What is Genie?

#### ➤ About:

- **Generative Interactive Environments (Genie)** is a foundation **world model that is trained on videos sourced** from the Internet.
  - The model can “generate an endless variety of **playable (action-controllable) worlds** from synthetic images, photographs, and even sketches”.
- It is the first generative interactive environment that has been trained in an unsupervised **manner from unlabelled internet videos**.

#### ➤ Significance:

- Genie can be prompted to generate a **diverse set of interactive and controllable environments** although it is trained on video-only data.
  - Genie learns not only which parts of an observation are generally controllable, but also infers **diverse latent actions that are consistent across** the generated environments.
- Genie is a breakthrough as it makes playable environments from a single image prompt. Genie can be prompted with images it has never seen. **The same can be done with sketches.**

- This includes real world photographs, sketches, allowing people to interact with their imagined virtual worlds.
- This opens up many possibilities, especially new ways to create and step into virtual worlds.
- The model's ability to learn and develop new world models signals a **significant leap towards general AI agents** (an independent programme or entity that interacts with its environments by perceiving its surroundings via sensors).

### What is Generative Artificial Intelligence (GAI)?

#### ➤ About:

- GAI is a rapidly growing branch of AI that focuses on generating new content (such as images, audio, text, etc.) based on patterns and rules learned from data.
- The rise of GAI can be attributed to the development of advanced generative models, such as **Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs)**.
  - These models are trained on large amounts of data and are able to generate new outputs that are similar to the training data. For example, a GAN trained on images of faces can generate new, synthetic images of faces that look realistic.
- While GAI is often associated with **ChatGPT and deep fakes**, the technology was **initially used to automate the repetitive processes** used in digital image correction and digital audio correction.
- Arguably, because **machine learning** and deep learning are inherently focused on generative processes, they can be considered types of GAI, too.

#### ➤ Applications:

- **Art and Creativity:** It can be used to generate

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new works of art that are unique and innovative, helping artists and creatives explore new ideas and push the boundaries of traditional art forms.

- **DeepDream Generator** - An open-source platform that uses deep learning algorithms to create surrealistic, dream-like images.
- **DALL-E2** - This AI model from OpenAI generates new images from text descriptions.
- **Music:** It can help musicians and music producers explore new sounds and styles, leading to more diverse and interesting music.
  - **Amper Music** - creates musical tracks from pre-recorded samples.
  - **AIVA** - uses AI algorithms to compose original music in various genres and styles.
- **Computer Graphics:** It can generate new 3D models, animations, and special effects, helping movie studios and game developers create more realistic and engaging experiences.
- **Healthcare:** By generating new medical images and simulations, improving the accuracy and efficiency of medical diagnoses and treatments.
- **Manufacturing and Robotics:** It can help optimise manufacturing processes, improving the efficiency and quality of these processes.
- **Significance for India:**
  - As per NASSCOM data, the **overall AI employment in India** is estimated at about 416,000 professionals.
  - The **growth rate** for the sector is estimated at about **20-25%**. Further, AI is expected to contribute an additional **USD 957 billion to India's economy, by 2035**.

### What are the Concerns Related to GAI?

- **Accuracy:** One of the biggest challenges is **ensuring that the outputs generated by GAI are of high quality and accurate**.
  - This requires the development of advanced generative models that can accurately capture the patterns and rules learned from data.
- **Partisan GAI Models:** GAI models are trained on large amounts of data, and if that data is biased, the **outputs generated by GAI may also be biased**.
  - This can lead to discrimination and reinforce existing societal biases.

- **Privacy:** Training GAI models requires access to large amounts of data, which could include personal and sensitive information.
  - There is a risk that this **data could be used for unethical purposes**, such as for **targeted advertising or for political manipulation**.
- **Accountability for Misinformation:** Since GAI models can generate new content, such as images, audio, or text it **may be used to generate fake news** or other malicious content, without knowing who is responsible for the output.
  - This could lead to ethical dilemmas over responsibility.
- **Automation and Lowering Job:** GAI has the potential to automate many processes, which could lead to **job displacement for people** who are skilled in those areas.
  - This raises questions about the ethics of using AI for job displacement and the potential impact on workers and society.

### What are India's Initiatives for Generative AI?

- **Generative AI Report:** **INDIAai**, the Government of India's National AI Portal, conducted numerous studies and hosted three roundtable discussions with some of the most prominent voices in Generative AI, AI Policy, AI Governance and Ethics, and academia to examine the impact, ethical and regulatory questions, and opportunities it brings to India.
- **Co-Founding Global Partnership on Artificial Intelligence (GPAI):** In 2020, India joined forces with 15 other countries to form the GPAI. The purpose of this alliance is to establish frameworks for the responsible utilisation of emerging technologies.
- **Fostering an AI Ecosystem:** The Indian government has been dedicated to fostering an AI ecosystem within the country by investing in R&D, supporting startups and innovation hubs, creating AI policies and strategies, and promoting AI education and skilling.
  - **National Strategy for Artificial Intelligence:** The Government has published the National Strategy for Artificial Intelligence with the objective of developing an ecosystem for the research and adoption of Artificial Intelligence.
  - **National Mission on Interdisciplinary Cyber-Physical Systems:** Under this Mission, Technology Innovation Hubs (TIH) has been established on AI & ML at IIT - Kharagpur, which aims to provide

Note:

the state-of-the-art training and capacity building for the creation of next-generation scientists, engineers, technicians, and technocrats in the field of Artificial Intelligence.

- **Artificial Intelligence Research, Analytics and Knowledge Assimilation Platform:** It is a **Cloud computing platform**, aiming to make India a pioneer amongst emerging economies with regards to AI and transform sectors like education, health, agriculture, urbanisation and mobility.

## Large Language Models

### Why in News?

In the era of advanced **artificial intelligence (AI)**, the emergence of **Large Language Models (LLMs)** has revolutionized the way computers interact with humans and process language. From enhancing virtual conversations to powering creative tasks, LLMs have paved the way for a new frontier in the realm of AI technology.

### What are Large Language Models (LLMs)?

#### ➤ Definition:

- LLMs are large general-purpose language models capable of solving common language problems such as text classification, question answering, and text generation.
- These models are **trained on massive datasets to understand patterns**, structures, and relationships within human language.

#### ➤ Types of Large Language Models (LLMs)

##### ○ Based on Architecture:

- **Autoregressive Models:** Predict the **next word in a sequence** based on previous words. **Example: GPT-3.**
- **Transformer-based Models:** Utilise a specific **artificial neural network architecture** for language processing. Examples: **LaMDA, Gemini (formerly Bard).**
- **Encoder-decoder Models:** Encode input text into a representation and then decode it into another language or format.

##### ○ Based on Training Data:

- **Pretrained and Fine-tuned Models:** Adapt to specific tasks through fine-tuning on particular datasets.

- **Multilingual Models:** Capable of understanding and generating text in multiple languages.
- **Domain-specific Models:** Trained on data related to specific domains like legal, finance, or healthcare.

##### ○ Based on Size and Availability:

- **Size:** Large models require more computational resources but offer better performance.
- **Availability:** Open-source models are freely available, while closed-source models are proprietary.
  - **Examples of open-source LLMs:** LLaMA2, BLOOM, Google BERT, Falcon 180B, OPT-175 B.
  - **Examples of closed-source LLMs:** **GPT 3.5 by OpenAI, Gemini by Google.**

#### ➤ Operational Mechanisms of LLMs:

- At their core, LLMs utilize **deep learning techniques**, to **predict the probability of words or sequences** given preceding text.
  - LLMs analyze patterns and relationships in data to predict the next word or sequence based on input prompts, akin to **how humans comprehend language.**
  - LLMs typically rely on **transformer models**, such as the **Generative Pre-trained Transformer (GPT)**, with attention mechanisms for contextual understanding.

#### ➤ Applications of LLMs:

- LLMs generate **human-like content**, from stories to songs, and act as virtual assistants, excelling in sentiment analysis, translation, and text summarization, crucial for marketing strategies.

#### ➤ Advantages of LLMs:

- LLMs can adapt to various tasks and domains, leveraging their extensive training data to generalise patterns.
- They can perform well even with limited domain-specific data, thanks to their ability to learn from general language training datasets.
- As more data and parameters are added, LLMs **continuously enhance their performance**, making them valuable assets in evolving AI landscapes.

Note:



### What are Large Action Models (LAMs)?

- LAMs are **specialized AI models** built to perform specific **tasks or sequences of actions**, often beyond just understanding and generating text.
  - **LAMs** can understand human intention and predict actions. LAMs are designed to help with repetitive tasks.
- They are designed to execute **actions based on inputs, which may include text, images, or other forms of data**.
- LAMs can be used in various applications such as **virtual assistants, robotic systems, automated customer service**, and more.
  - Example of LAM: **Rabbit r1**.
- These models are trained on **datasets that include both linguistic information and action-oriented data** to learn how to perform tasks based on given contexts.

## Neurovascular Tissues/ Organoids

### Why in News?

Recently, researchers at the Post Graduate Institute of Medical Education & Research (PGIMER) in Chandigarh, have developed a groundbreaking prototype model for **generating neurovascular organoids (NVOEs) from autologous blood**, representing a novel approach to generating **neurovascular tissues**.

- These innovative NVOEs hold the key to transforming our understanding of brain function and neurological diseases.

### What are the Key Highlights of the Research?

- **Addressing Challenges in Neural Organoid Development:**
  - Traditional neural organoids **lack vascularization**, limiting their utility in modelling brain activity and investigating neurological diseases.
    - Vascularization is the process of **growing blood vessels into a tissue** to improve oxygen and nutrient supply.
  - Previous approaches, such as **co-culturing blood vessel organoids with cerebral organoids**, proved ineffective due to the absence of **active blood flow** and are labour-intensive and not cost-effective.

### ➤ Neurovascular Tissues/Organoids:

- PGIMER researchers have introduced a prototype for establishing **self-organizing NVOEs entirely from autologous blood**, without genetic manipulation or morphogen supplementation.
  - Autologous blood is a blood donation that an individual gives for their own use, for example, before surgery.
- This approach produces **functional vascularized embryoids** on their own and **doesn't need any special culture conditions**, making it cost-efficient and accessible.
  - The researchers verified that these **neurovascular organoids have working blood vessels** by detecting signals from haemoglobin using a method called **BOLD (Blood-Oxygen-Level-Dependent) imaging**.
    - BOLD imaging is a technique that uses magnetic resonance imaging (MRI) to **measure brain activity**.

### ➤ Implications for Neuroscience:

- These organoids have broad implications for studying **neurological diseases**, **regenerating nerves**, and developing treatments for **tumours** and **autoimmune conditions**.
- These models help researchers understand the **genetic causes of hearing loss and language challenges in children** with early-onset Sensorineural Hearing Loss (SNHL).
  - They study children with additional conditions like **autism or intellectual disability**, aiming to improve communication outcomes. By studying NVOEs, researchers can investigate how **altered brain activity affects sensory processing**.
    - Although functional MRI (fMRI) is a useful tool for monitoring brain activity, it's not suitable for these children due to their cochlear implants or hyperactivity.

### ➤ Future Applications:

- The prototype holds the potential for **developing patient-specific embryoid models** for congenital neurosensory, neurodevelopmental, and neurodegenerative diseases.
- It can aid in **deciphering genetics and neural circuits**, testing drugs, and identifying novel biomarkers for **early neurological diseases**, ushering in a new era of personalised medicine in neuroscience.

Note:

### Neural Organoids

- Neural organoids, also known as **cerebral organoids**, are **human pluripotent stem cells (hPSCs)**-derived **3D in vitro culture systems** that recapitulate the developmental processes and organisation of the **developing human brain**.
  - These provide a physiologically relevant in vitro 3D brain model for the study of **neurological development and disease processes** that are unique to the human nervous system.
- They have important applications in studying human brain development and neurological disorders such as **schizophrenia**.

## Astronomers Uncover Hot Helium Stars

### Why in News?

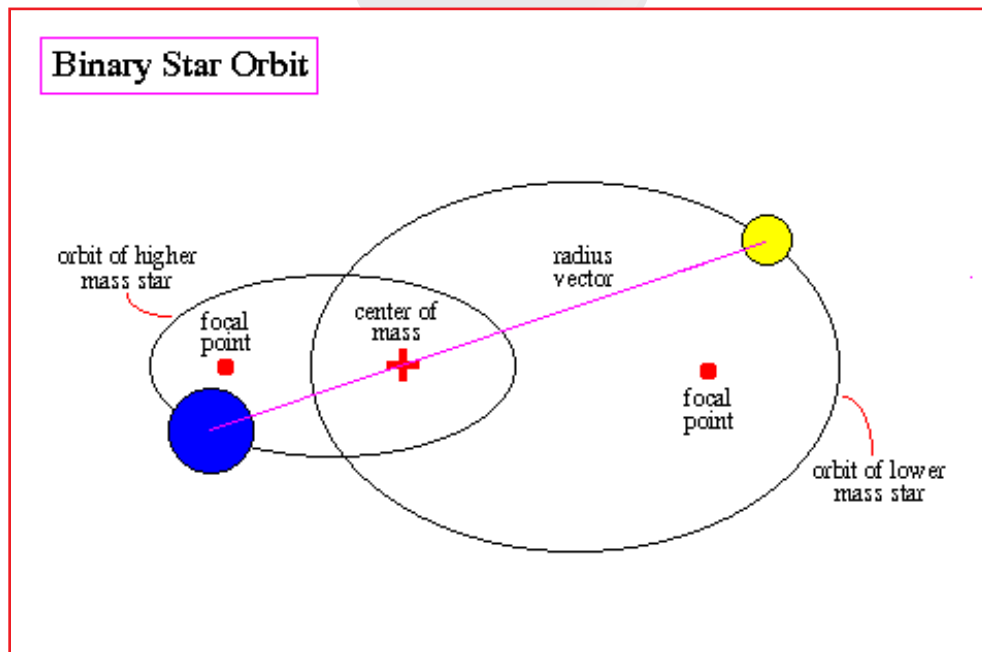
Astronomers have recently identified a group of **hot, helium-covered stars found in binary systems**, potentially deepening our understanding of stellar dynamics and evolution.

### What are the Major Outcomes of the Discovery?

- Utilising a telescope capable of detecting **ultraviolet light**, astronomers observed around half a million stars in the **Large and Small Magellanic Clouds**.
  - The **Large Magellanic Cloud** and the Small Magellanic Cloud are two **dwarf galaxies** that are companions to the **Milky Way**.
- Some stars exhibited **unusual speeds**, hinting at the presence of companions (binary nature) affecting their motion.
  - Subsequent analysis of the optical spectra of 25 stars revealed their elemental composition, leading to the identification of **different star classes**.
- Stars were categorised into three classes:
  - Class 1 (helium-rich, hydrogen-depleted)
  - Class 2 and Class 3 (helium-rich, with hydrogen)

### What is the Binary System of Stars?

- **About:** It refers to the pair of **stars** that are **gravitationally bound to each other** and orbit around a **common centre of mass**.
  - An estimated 85% or more of stars are actually part of binary or even multiple-star systems.



### Classification:

- **Visual Binaries:** These are the **easiest to identify and consist of two stars** that can be directly resolved and separated using a telescope.
- **Spectroscopic binaries:** These stars are too close together to be resolved visually even with powerful telescopes.

Note:

- However, their presence can be detected by observing periodic shifts in their spectral lines.
- **Eclipsing Binaries:** These binary systems are aligned in a way that one star periodically passes in front of the other from our perspective.
  - This event creates a **temporary dip in the brightness of the combined system**, allowing astronomers to confirm the presence of the unseen companion and study its properties.
- **Astrometric Binaries:** These binary systems are detected indirectly by measuring the **wobbling motion** of a single star.
  - This wobbling is caused by the gravitational pull of the unseen companion star.
- **Confirmation of Binary Systems:** When a star exhausts its fuel, gravity takes over, leading to a **supernova explosion** that strips its outer layers.
  - Some supernova lack **hydrogen**, suggesting pre-explosion stripping of the outer layer.
    - This can happen in binary systems, where **one star's gravity removes the outer hydrogen layer from its companion**, leaving behind a helium-rich star.
  - Astronomers have only found one such binary system so far.

#### How do Stars Maintain their Presence Over Billions of Years?

- Stars maintain their presence over billions of years through a delicate balance between two opposing forces: **nuclear fusion** and **gravity**.
- For example, despite **Newton's Law of Universal Gravitation** suggesting the Sun's gravitational collapse, nuclear fusion at its core acts as a vital stabilising force.
  - **Nuclear Fusion involves** the merging of nuclei of light elements like **hydrogen and helium**, releasing substantial heat energy.
  - This energy, in turn, **creates internal pressure**, counteracting the gravitational force, thus maintaining equilibrium.
- Therefore, Stars like the **Sun sustain this balance between outward fusion energy and inward gravitational pull**, ensuring their enduring presence over billions of years.

## Snake Venom Neutralising Antibody

### Why in News?

Researchers at the **Indian Institute of Science (IISc)** in Bengaluru have created a synthetic human antibody capable of neutralising a powerful **neurotoxin** produced by **Elapidae snakes**, such as the cobra, **king cobra**, krait, and black mamba.

- **Elapids**, a diverse family of **venomous snakes**, have hollow, front fangs that deliver venom and include **300 species** across various **habitats globally**.

### What is the New Venom-Neutralising Antibody?

#### ➤ About:

- The team at IISc adopted a previously successful approach for screening antibodies against **HIV** and **Covid-19** to synthesise a new antibody, marking the first application of this strategy for **snakebite** treatment.

#### ➤ Methodology:

- The team's **antibody targets a conserved region** in the core of the **three-finger toxin (3FTx)** found in elapid venom, despite variations in this toxin among different elapid species.
- The researchers tested their synthetic antibody on animal models, finding it effective against toxins from the **Taiwanese banded krait**, monocled cobra, and black mamba, with a potency nearly 15 times that of conventional antivenom, even when administered after a delay following venom injection.
  - **Conventional antibodies** are not uniform in their composition, as they are a **mixture of different types** of molecules with varying affinity and specificity to **different epitopes** of the antigen that triggered their production.

#### ➤ Need:

- **Snakebites** cause thousands of deaths annually, particularly in India and sub-Saharan Africa.
  - According to an **Indian Council of Medical Research (ICMR)** study, **India has witnessed** approximately 1.2 million (12 lakh) snakebite fatalities between 2000 and 2019, **averaging 58,000 deaths annually**.

Note:

- India accounts for almost 50% of global snakebite deaths.
- The **World Health Organization (WHO)** classified snakebite envenoming as a **neglected tropical disease** of high priority.
- **Application:**
  - Researchers suggest that this advancement brings us closer to a **universal antibody solution** capable of providing broad protection against various snake venoms.

#### **Other Initiatives to Prevent Snake Bite:**

- Much before the WHO roadmap was launched, researchers from the **ICMR** started **community**

**awareness and health system capacity building** from the year 2013.

- In alignment with **WHO's Snakebite Envenoming Strategy** and the **United Nations' Sendai Framework for Disaster Risk Reduction**, India ratified a **National Action Plan in 2015** to combat this issue.
- The **2022-2030 Regional Action Plan** for snakebite envenoming in **South-East Asia** aims to halve snakebite-related deaths and disabilities by 2030, aligning with the **Global Strategy**, and seeks to guide Member States, WHO, donors, and partners in strengthening health systems and **accelerating actions** at the **human-animal-ecosystem interface** through various strategies and priority areas.



## **The iOncology-AI Project**

### **Why in News?**

At the forefront of medical innovation, researchers at the **All India Institute of Medical Sciences (AIIMS)** in Delhi have developed an **artificial intelligence (AI)**-powered model named iOncology-AI Project, integrated with a **supercomputer**, to aid oncologists in making informed decisions regarding **cancer treatment**.

### **What are the Key Highlights of the iOncology-AI Project?**

- **About:**
  - The iOncology-AI project emerges from a collaborative effort between the AIIMS in Delhi and Pune's **Centre for**

Note:



**Development of Advanced Computing (C-DAC)**, and the Ministry of Electronics & Information Technology. This partnership brings together expertise in medical research and computational science to revolutionize cancer care.

- It aims to leverage **AI** to enhance the precision and efficacy of cancer treatment. By analysing **vast datasets encompassing genetic profiles, clinical histories, and treatment outcomes**, the project seeks to unravel the complex interplay **between genetics and cancer therapy**.
- **Working Procedure:**
  - The platform, developed with C-DAC, stores and analyses various cancer-related data, including blood tests, lab reports, scans, and patient histories.
  - Utilising advanced algorithms, the AI-enabled platform assists doctors in making treatment decisions **based on comprehensive genomic data analysis**, helping to tailor treatment plans to individual patients.
    - By studying the clinical data and genomic makeup of thousands of cancer patients, the platform can provide **personalised treatment recommendations, improving therapeutic outcomes**.
  - Particularly beneficial in resource-constrained settings, the tool aids doctors in making targeted treatment decisions and optimising healthcare delivery.
    - While not replacing doctors, the platform serves as a valuable guide by **automatically flagging abnormalities in scans and reports**, enhancing clinical decision-making.
- **Focus on Breast and Ovarian Cancers:**
  - Given the prevalence of **breast and ovarian cancers among women in India**, the initial application of **iOncology-AI** is focused on early detection of these cancers.
- **Impacts:**
  - The **iOncology-AI** platform can improve cancer patient outcomes and quality of life through early detection and personalised treatment of breast and ovarian cancers.
  - It also reduces the **burden and cost of cancer care** by enhancing healthcare professionals' efficiency and productivity and optimising resource use.

Additionally, it contributes to cancer research and innovation by providing valuable insights and data for further analysis and development.

### Genomic Data

- Genomic data is information about the structure and function of an organism's genome.
- It is a powerful tool for **medical researchers and doctors**. It helps them understand how **variations in DNA affect our health**.
- Through **genomic sequencing**, they decipher a patient's genetic makeup and spot alterations in our genes. These changes are key to understanding how diseases such as **cancer develop**.

### Global Cancer Scenario

- Cancer is a complex group of diseases characterised by the **uncontrolled growth and spread of abnormal cells in the body**.
  - These cells, known as cancer cells, can invade and destroy healthy tissues and organs.
- In a healthy body, cells grow, divide, and die in a regulated manner, but in the case of cancer, genetic mutations disrupt this normal cell cycle, causing uncontrollable growth. This can lead to the formation of a **tumour**.
- The **Global Cancer Observatory (GLOBOCAN)** estimates for 2020 reported 19.3 million incident cancer cases worldwide, with **India ranking third after China and the United States**.
- A Lancet study predicts a **57.5% increase in cancer cases in India by 2040**, reaching 2.08 million. In 2022 alone, over 8 lakh deaths in India were caused by cancer, primarily due to late detection, resulting in only a 20% survival rate.

### What are the Government Initiatives Related to Cancer Treatment?

- **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke**
- **National Cancer Grid**
- **National Cancer Awareness Day**
- **HPV Vaccine**

## Stem Cells in Menstrual Blood

### Why in News?

Recently, researchers have unveiled the **regenerative**

Note:

**potential of stem cells in menstrual blood**, stemming from studies conducted roughly two decades ago.

- This discovery has opened new avenues for understanding the complex interplay between the **female reproductive system and regenerative processes**.

### What are Menstrual Blood Stem Cells?

#### ➤ About:

- Menstrual blood-derived stem cells (MenSCs), known as **endometrial stromal mesenchymal stem cells**, possess multipotent properties, meaning they can differentiate into various tissue types such as **fat cells, bone cells, and smooth muscle cells**.
- MenSCs are an ethical source of adult stem cells that can be collected painlessly from women.
  - MenSCs can be collected through a **menstrual cup**, providing a less **invasive alternative** to surgical biopsies.
- MenSCs can be obtained from women's menstrual blood derived from the **endometrium** (lines the inside of the uterus).

#### ➤ Role in Women's Health:

##### ○ Regenerative Potential:

- MenSCs exhibit multipotent characteristics. This means they can differentiate into various cell types, including neurons, cartilage, fat, bone, heart, liver, and skin cells.

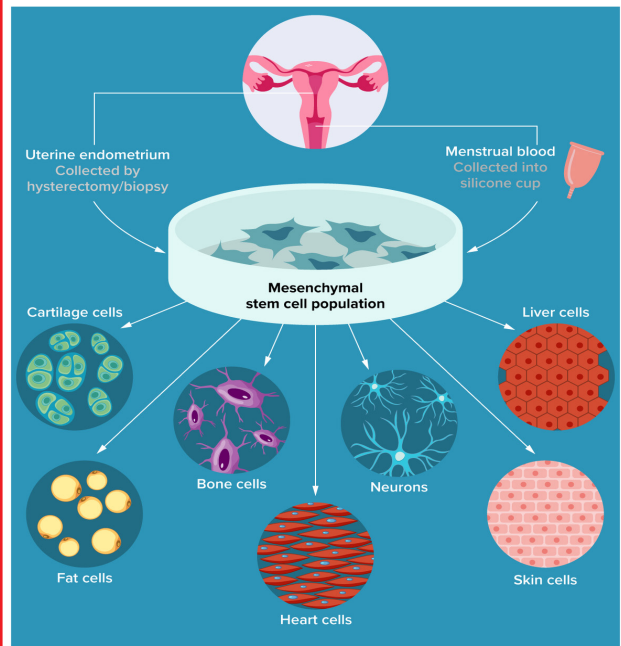
##### ○ Treating Endometriosis:

- MenSCs offer potential avenues for treating gynaecological disorders such as endometriosis and infertility.
  - **Endometriosis** is a disease in which tissue similar to the lining of the uterus (endometrium) **grows outside the uterus**. It can cause severe pain in the pelvis and make it **harder to get pregnant**.
- Endometriosis can start at a person's first menstrual period and last until menopause (end of menstrual cycles).
  - Common symptoms of endometriosis include **pelvic pain**, especially during menstruation, painful intercourse, infertility, heavy menstrual bleeding, and gastrointestinal issues such as diarrhoea or constipation.
  - The cause and ways to prevent endometriosis

are unknown. There is no cure, but its symptoms can be treated with **medicines or, in some cases, surgery**.

- The contributing factor to endometriosis is the backflow of menstrual blood into a woman's fallopian tubes.
- This backward flow carries blood into the **pelvic cavity**, a funnel-shaped space between the bones of the pelvis.
- Endometrial stem cells deposited in these areas may prompt the **growth of endometrial-like tissue** outside the uterus, resulting in **painful lesions, scarring, and often infertility**.

### The diverse fates of menstrual stem cells



SOURCE: I. UZIELIENE ET AL / STEM CELLS INTERNATIONAL 2018

KNOWABLE MAGAZINE

#### ➤ Broader Therapeutic Applications:

- Menstrual stem cells have potential therapeutic applications beyond gynaecological diseases.
- Injecting menstrual stem cells into **diabetic mice stimulated** the regeneration of **insulin-producing cells** and improved blood sugar levels.
  - Treating injuries with stem cells or their secretions helped heal wounds in mice.
- Menstrual stem cells can be transplanted into humans without adverse side effects.

#### ➤ Challenges:

- Despite the convenience of collecting menstrual stem cells, research in this area represents a tiny fraction of overall stem cell research.

Note:

- As of 2020, **menstrual stem cell research** accounted for only **0.25% of all mesenchymal cell research**, while bone marrow stem cells represented 47.7%.
- Ensuring **consistent and scalable production of MenSCs** for clinical applications remains a challenge.
- Cultural taboos and limited investment in women's health research pose significant challenges in securing funding for menstrual stem cell studies.
- Addressing **gender bias in research funding is crucial to elevate menstrual stem cell research** as a promising frontier in regenerative medicine, beyond its association with menstruation.

### Endometriosis and Fusobacterium bacteria

- There is a significant **association between Fusobacterium bacteria and endometriosis**.
  - Fusobacterium was found in **64% of endometriosis patients compared to only 7% in healthy individuals**. Studies suggest that **Fusobacterium exacerbates endometrial lesions**.
- A 2022 research paper found that people with endometriosis had an imbalance of microbe populations in the gut, known as **gut dysbiosis**.
  - This altered microbiota could contribute to the **progression of endometriosis**.

### What are Stem Cells?

- **About:**
  - Stem cells are special human cells with the ability to develop into various cell types, such as muscle cells or brain cells.
  - They have the potential to repair damaged tissues, offering hope for treating serious illnesses like **paralysis** and **Alzheimer's disease**.
- **Types of Stem Cells:**
  - Stem cells are usually categorized as **multipotent** (able to give rise to multiple cells within a lineage), **pluripotent** (able to give rise to all cell types in an adult) and **totipotent** (able to give rise to all embryonic and adult lineages).
- **Stem Cells in Medicine:**
  - Hematopoietic stem cells, found in bone marrow, are currently used to treat diseases like cancer and anaemia by producing new blood cells.
  - Potential future applications include treating **chronic heart disease**, type 1 diabetes, spinal cord injuries, and Alzheimer's disease.

Type of Stem Cell	Source	Potential of the Stem Cell
<b>Embryonic Totipotent Stem Cells</b>	These stem cells are found in the very early stages of a fertilized embryo, typically within the first few days after fertilization.	Can become any cell in the body even form the placenta(an organ in the uterus during pregnancy that provides oxygen and nutrients to the growing baby)
<b>Embryonic Pluripotent Stem Cells</b>	Derived from the inner cell mass of a slightly more developed embryo (around 4-5 days after fertilization).	Can become many different cell types in the body but cannot form the placenta.
<b>Adult Multipotent Stem Cells</b>	Found in various tissues in the human body, like bone marrow or skin.	Multipotent stem cells are more specialized.They can only differentiate into a limited range of cell types specific to the tissue they are found in. For example, bone marrow stem cells can develop into different blood cell types, but not into skin cells.

- Pluripotent stem cells offer opportunities for testing new medicines and creating new tissues.

## GSLV-F14/INSAT-3DS Mission

### Why in News?

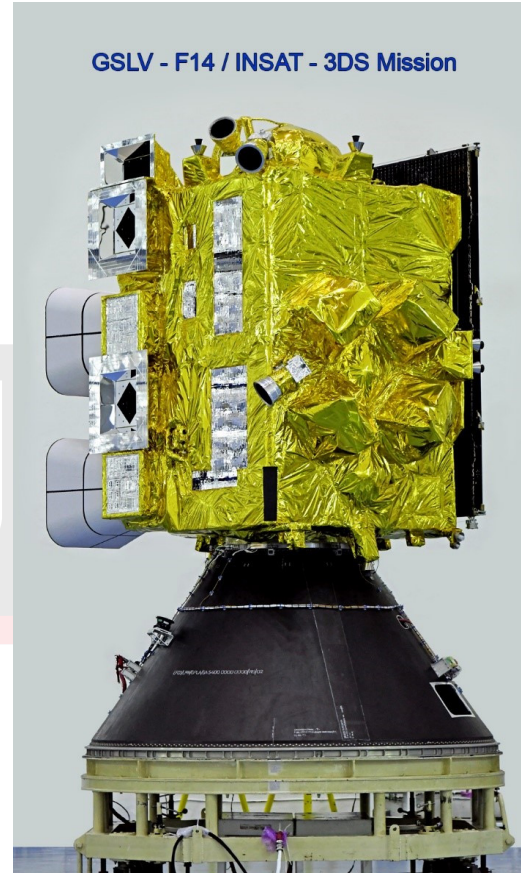
The **Indian Space and Research Organisation (ISRO)** is all set to launch its **GSLV-F14/INSAT-3DS mission** on 17th February 2024, with the aim of enhancing weather forecasting and disaster warning capabilities.

### What are the Key Highlights of the GSLV-F14/INSAT-3DS Mission?

- INSAT-3DS will be launched aboard the **Geosynchronous Satellite Launch Vehicle F14 (GSLV F14)**.
  - GSLV-F14 is a **three-stage launch vehicle**.
    - The first stage (GS1) has a solid propellant motor and four **earth-storable propellant stages (EPS)**.
      - EPS includes a supporting structure, propellant tanks, and an engine.
    - The second stage (GS2) is also an earth-storable propellant stage
    - The third stage (GS3) is a **cryogenic stage**, with propellant loading of liquid oxygen (LOX) and liquid hydrogen (LH<sub>2</sub>).
    - The GSLV-F14 is the 16th flight of the GSLV, and the 10th flight with the indigenous cryo stage.
- INSAT-3DS comprises **four payloads**, including an Imager, a sounder, a data relay transponder, and a satellite-aided search and rescue transponder.

Note:

- **Imager Payload:**
  - INSAT-3DS carries a multi-spectral Imager capable of generating **Earth images in six wavelength bands.**
- **Sounder Payload:**
  - It features a 19-channel Sounder payload, offering data on atmospheric vertical profiles like temperature and humidity.
- **Data Relay Transponder (DRT):**
  - INSAT-3DS through DRT receives global meteorological, hydrological, and oceanographic data from automatic weather stations and data collection platforms, relaying it back to user terminals.
- **Satellite aided Search and Rescue (SA&SR) Transponder:**
  - INSAT-3DS through SA&SR relays distress signals for global search and rescue operations, covering the **Ultra high frequency band.**
- INSAT-3DS is designed to **enhance meteorological observations**, aid in weather forecasting, and improve **disaster warning capabilities.**
  - Fully funded by the Ministry of Earth Sciences (MoES), it follows the lineage of **Third Generation Meteorological Satellites from Geostationary Orbit.**
- The satellite will monitor land and ocean surfaces, augmenting the services provided by existing **INSAT-3D and INSAT-3DR satellites.**
  - India gets weather updates through INSAT-3D & 3DR weather satellites. INSAT 3DR was launched in 2016 as a follow up on INSAT-3D which was launched in 2013.
- It will significantly contribute to India's weather agencies, facilitating more accurate weather forecasts and better disaster management strategies.
- It will facilitate data collection and dissemination capabilities from the data collection platforms.
- INSAT-3DS will provide satellite-aided search and rescue services, enhancing emergency response capabilities.



Note:

# Environment and Ecology

## Highlights

- Used Heavy Duty Vehicles and the Environment
- SC's Interim Order on the Forest Conservation Act 2023
- African Union Banned Donkey Skin Trade
- Concerns Raised on Plastic Waste Pollution
- TN-SHORE
- Gupteswar Forest as Biodiversity Heritage Site
- CMS COP14
- Tripling Renewables by 2030
- Challenges of Sustainable Fashion
- Marine Heatwaves in Arctic Ocean

## Used Heavy Duty Vehicles and the Environment

### Why in News?

Recently, the [United Nations Environment Programme \(UNEP\)](#) and [Climate and Clean Air Coalition](#) have released a report titled- *Used Heavy Duty Vehicles and the Environment-A Global Overview of Used Heavy-Duty Vehicles: Flow, Scale and Regulation* ahead of the 6th session of the [United Nations Environment Assembly \(UNEA-6\)](#).

- **UNEA-6 will be held in Nairobi from 26th February to 1st March 2024** under the theme of “**effective, inclusive and sustainable multilateral actions** to tackle the triple planetary crisis: **climate change**, nature and biodiversity loss, and pollution and waste.”

### What is the United Nations Environment Assembly?

- It is the **governing body of the UN Environment Programme (UNEP)**.
- It is the world's highest-level decision-making body on the environment.
- The Assembly is made up of the **193 UN Member States** and convenes every two years to advance global environmental governance.
- It was created in June 2012, during the [United Nations Conference on Sustainable Development](#), also referred to as **RIO+20**.

### What are the Key Highlights of the Report?

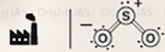
- **Pollution Escalation:**
  - There is a significant increase in pollution levels attributed to the rising **use of Heavy-Duty Vehicles (HDVs)**, particularly since 2000.

- Carbon dioxide emissions associated with HDVs have surged by more than 30%.
- **HDVs, weighing above 3.5 tonnes**, contribute substantially to global emissions, with trucks being the major contributors.
  - HDV are vehicles that are **designed for heavy-duty tasks** such as transporting goods, materials, or large numbers of people over long distances.
- They account for over 40% of on-road **nitrogen oxides (NOx) emissions**, over **60% of on-road particulate matter (PM 2.5)**, and over **20% of black carbon emissions**.
- **Growth Projection:**
  - The report projects a significant increase in the number of HDVs on roads due to economic activities and the need for transportation. Past trends indicate a **doubling of worldwide truck and bus sales between 2000-2015**.
- **Global Trade:**
  - The analysis of **global used HDVs highlights** their flow and scale, particularly noting their import dependence in developing countries.
  - Japan, the [European Union](#), and the Republic of Korea constitute nearly 60% of the global export market share of **both new and used HDVs**.
  - In 2015, a total of 6.3 million new and **used HDVs were sold worldwide**.
    - Among these, 3.4 million units were found to be newly manufactured. This figure makes the number of **used HDVs comprise about half of the sales in total**.
- **Regulation and Enforcement:**
  - Several developing countries depend on imports of **used HDVs in order to grow their fleet**, there is a lack of regulation and enforcement regarding the **quality of imported used HDVs**, exacerbating environmental and health impacts.

Note:

# Air Pollutants

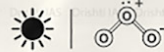
## Sulphur Dioxide (SO<sub>2</sub>)



It comes from the consumption of fossil fuels (oil, coal and natural gas). Reacts with water to form acid rain.

**Impact:** Causes respiratory problems.

## Ozone (O<sub>3</sub>)



Secondary pollutant formed from other pollutants (NO<sub>x</sub> and VOC) under the action of the sun.

**Impact:** Irritation of the eye and respiratory mucous membranes, asthma attacks.

## Nitrogen Dioxide (NO<sub>2</sub>)



Emissions from road transport, industry and energy production sectors. Contributes to Ozone and PM formation.

**Impact:** Chronic lung disease.

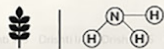
## Carbon Monoxide (CO)



It is a product of the incomplete combustion of carbon-containing compounds.

**Impact:** Fatigue, confusion, and dizziness due to inadequate oxygen delivery to the brain.

## Ammonia (NH<sub>3</sub>)



Produced by the metabolism of amino acids and other compounds which contain nitrogen.

**Impact:** Immediate burning of the eyes, nose, throat and respiratory tract and can result in blindness, lung damage.

## Lead (Pb)



Released as a waste product from extraction of metals such as silver, platinum, and iron from their respective ores.

**Impact:** Anemia, weakness, and kidney and brain damage.

## Particulate Matter (PM)



**PM10:** Inhalable particles, with diameters that are generally 10 micrometers and smaller.

**PM2.5:** Fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller.

**Source:** Emitted from construction sites, unpaved roads, fields, fires.

**Impact:** Irregular heartbeat, aggravated asthma, decreased lung function.

*Note: These major air pollutants are included in the Air quality index for which short-term National Ambient Air Quality Standards are prescribed.*



- Many importing countries have **weak or non-existent regulations**, leading to inadequate enforcement.
- **Netherlands removed catalytic converters in many vehicles before shipment to Africa.** Because of their old age, they were also found to lack diesel particulate filters.

Note:

### What are the Key Recommendations of the Report?

- **Ensure Cleaner and Safer Used Vehicles:**
  - The report stressed the importance of **sharing the responsibility of importing and exporting countries** to ensure cleaner and safer used vehicles on the roads in developing countries.
  - It raised the growing need for regional cooperation in introducing and enforcing minimum standards.
- **Emission Standards and Age Limits:**
  - The report suggested **emission standards and age limits**, raising public awareness and further research needs for the environment and road safety benefits.
  - It exemplified that with steps like **adopting Euro VI equivalent vehicle emission standards** and cleaner fuels, as many as 700 thousand premature deaths can be avoided by 2030.
    - At present, 97% of all newly registered trucks and 73% of buses in the EU run on diesel.
- **Better Regulations on Used HDVs:**
  - The report recommended **better regulations on used HDVs to promote greater uptake of advanced technologies**, such as electric buses and trucks, in developing countries.
- **International Collaborations for Super Pollutants:**
  - There is a need for **international collaboration to phase out short-lived climate pollutants, or “super pollutants”**, such as **Methane, Black Carbon** and hydrofluorocarbons.
    - Super pollutants are termed “super” because they have a much higher **global warming potential (GWP)** per unit mass than carbon dioxide (CO<sub>2</sub>), the most well-known **greenhouse gas**.
    - Long-term pollutants are those that **persist in the atmosphere for extended periods**, contributing to ongoing environmental issues over time.
  - By addressing short-lived climate pollutants, the world can deliver climate action, and improve air quality and human health.

#### What is the Climate and Clean Air Coalition (CCAC)?

- The **UNEP-CCAC is a partnership** of over 160 governments, intergovernmental organizations, and non-governmental organizations.

- It works to **reduce powerful but short-lived climate pollutants (SLCPs)** – methane, black carbon, hydrofluorocarbons (HFCs), and tropospheric ozone – that drive both climate change and air pollution.
- It aims to **connect ambitious agenda-setting with targeted mitigation action** within countries and sectors.
- Robust science and analysis underpin its efforts and bolstered by its Trust Fund, it has given rise to a high level of political commitment, in-country support, and a range of tools that help make the case for action and support implementation.

## SC's Interim Order on the Forest Conservation Act 2023

### Why in News?

Recently, the **Supreme Court** has instructed the government to maintain the broad interpretation of “forest” as per the **1996 T.N. Godavarman Thirumulpad case** until a final decision is reached on a petition challenging the **amended Forest Conservation Act of 2023**.

### What is the Forest Conservation Act, 1980?

- **About:** The **Forest Conservation Act of 1980** was enacted to streamline forest-related laws, regulate deforestation, oversee the transportation of forest products, and levy duties on timber and other forest produce.
  - Under the provisions of this Act, prior approval of the **Central Government** is required for diversion of forest land for non-forest purposes.
    - It primarily applied to forest lands recognized by the **Indian Forest Act, 1927** or **State records since 1980**.
- **Supreme Court's Interpretation:** The **1996 Godavarman judgement** by the Supreme Court mandated the **protection of forests regardless of classification or ownership**.
  - This introduced the **concept of deemed forests or forest-like tracts** referring to areas resembling forests but not officially classified as such in government or revenue records.
- **Concern Regarding Varying Definitions of Forests:** States in India interpret ‘forests’ differently based

Note:

on surveys and expert reports, leading to diverse definitions.

- For example, **Chhattisgarh and Madhya Pradesh** base their definitions on size, tree density, and natural growth, while **Goa** relies on forest species coverage.
- Varying definitions result in estimates of deemed forest ranging from **1% to 28%** of India's official forest area.
- **Recent Amendment to Forest Conservation Act:**
  - The recent **Forest (Conservation) Amendment Act, 2023**, passed in July-August 2023, aimed to bring clarity and address concerns surrounding deemed forests.
    - It focused on **defining the scope of forest land** under the Act's purview, **exempting certain categories of land from its provisions**.
  - However, the Supreme Court's interim directive maintains the traditional approach to forest governance, unaffected by the recent amendment enacted by the Centre.
    - Also, the Supreme Court ruled that the creation of zoos or safaris by any government or authority must **receive final approval from the court**.

### **What are the Major Provisions of the Forest (Conservation) Amendment Act, 2023?**

- **Land Under the Purview of the Act:** It defines two categories of land under its purview:
  - **Land declared as forest** under the Indian Forest Act or any other law, or notified as a forest after 25<sup>th</sup> October 1980.
  - **Land converted from forest to non-forest use** before 12th December 1996.
- **Exemptions from the Act:** It includes allowing **up to 0.10 hectares** of forest land for connectivity purposes along roads and railways, **up to 10 hectares for security-related infrastructure**, and up to **5 hectares in Left Wing Extremism Affected Districts** for public utility projects.
  - Additionally, strategic projects related to national security within **100 kilometres of international borders**, **Line of Actual Control (LAC)**, and **Line of Control (LoC)** are also exempted.

- **Permitted Activities in Forest Land:** It includes conservation, management, and development efforts, with additional activities like **zoos**, **ecotourism facilities**, **silvicultural operations**, and **specified surveys** being exempted from non-forest purposes.
- **Assignment/Leasing of Forest Land:** It extends the prerequisite for obtaining prior approval from the central government for the assignment of forest land to **any entity**, broadening the scope beyond private entities.
  - Furthermore, it grants the central government the authority to **stipulate the terms and conditions** governing such assignments.

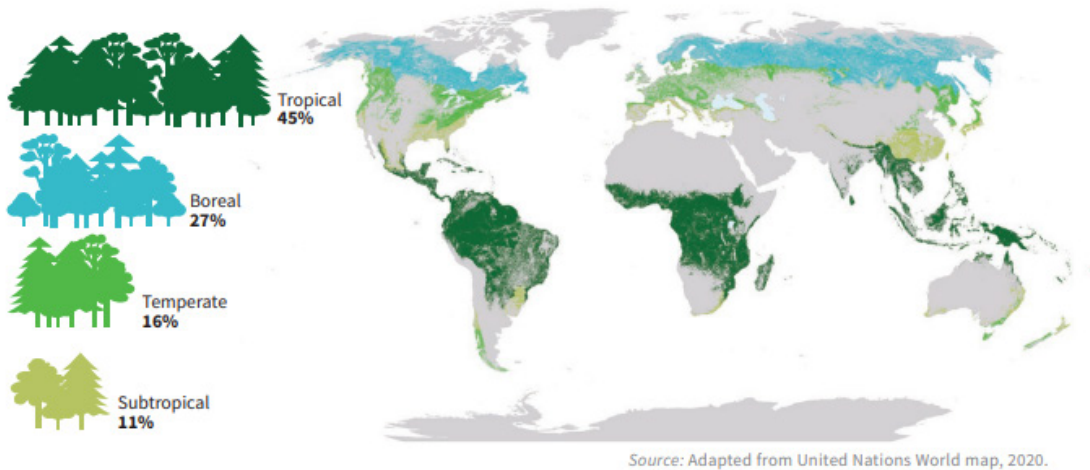
### **What is the Current Status of Forest Cover in India?**

- According to the **India State of Forest Report 2021**, the total forest and tree cover in India accounts for **24.62% of the country's geographical area**.
  - Specifically, the total forest cover constitutes **21.71% of the country's geographical area**, while the **tree cover constitutes 2.91%**.
- **Madhya Pradesh** has the largest forest cover (in terms of area) in the country, followed by **Arunachal Pradesh, Chhattisgarh, Odisha, and Maharashtra**.
  - In terms of **forest cover as a percentage of the total geographical area**, the top five states are **Mizoram, Arunachal Pradesh, Meghalaya, Manipur, and Nagaland**.
- States with a **positive change in forest cover** include Andhra Pradesh, Telangana, Odisha, Karnataka and Jharkhand.
  - **States with a negative change** include Arunachal Pradesh, Manipur, Nagaland, Mizoram & Meghalaya.
- According to the **Global Forest Resources Assessment (FRA) 2020** report by the **United Nations Food and Agriculture Organization (FAO)**, **India ranks 3<sup>rd</sup> in the world for net gain in average annual forest area** between 2010 and 2020.
  - Also, **more than half (54%) of the world's forests are in only five countries:** Russian Federation, Brazil, Canada, the United States of America and China.

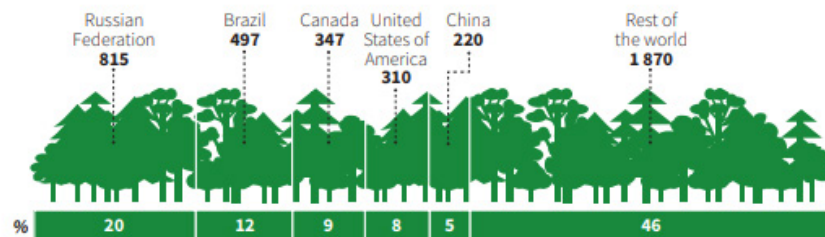
Note:



## Proportion and distribution of global forest area by climatic domain, 2020



## Top five countries for forest area, 2020 (million ha)



## African Union Banned Donkey Skin Trade

### Why in News?

Recently, during the 37<sup>th</sup> African Union Summit, 2024 in Ethiopia, African heads of state unanimously agreed to a historic ban on the trade of donkey skin, thereby prohibiting the killing of donkeys across the continent for their hides.

- This is a significant outcome following the Dar es Salaam declaration adopted at the first African Union-Interafrican Bureau for Animal Resource (AU-IBAR) Pan-African Donkey Conference in December 2022.

### What is the Dar es Salaam Declaration?

- **About:**
  - The Dar es Salaam declaration was signed in Tanzania during the Pan African Donkey Skin Conference, organised by the AU-IBAR, where

government ministers gathered to understand the harmful effects of the donkey skin trade on animals and communities in Africa.

- It underscores the rapid decrease in Africa's donkey population and advocates for increased investment in research, policies, and legislation to safeguard the species.
- It advocates for an African Union Commission resolution proposing a 15-year halt on the commercial slaughter of donkeys for their skins, alongside the creation of an African donkey strategy addressing exploitation, production, and productivity, to integrate these concerns into the global development agenda.

### Why is Donkey Skin Traded?

- **About:**
  - The donkey skin trade, which is largely unregulated, involves cruel practices such as viciously slaughtering donkeys for their skins, which are then exported to China.

Note:

- The trade is **illegal** in some countries and **legal in others** causing cruelty and suffering to donkeys globally.

➤ **Uses:**

- The collagen from the donkey skins is used to create a product known as **ejiao** (a traditional Chinese medicine) which is then used in food, drink, and beauty products.

➤ **Negative Effect:**

- **On Donkeys:** The treatment of donkeys throughout the skin trade, from **sourcing to slaughter**, has caused intense suffering, with hundreds of thousands slaughtered over the past decade.
- **On Owners:** The global trade in donkey skin jeopardises efforts towards achieving **at least nine out of the 17** United Nations **sustainable development goals**, including **ending poverty**, as donkeys are crucial to millions of people for whom equid ownership serves as the sole means to escape extreme poverty.

- The donkey skin trade significantly **impacts women and children**, reducing economic and educational opportunities by depriving them of the support of these animals, which are crucial for completing tasks efficiently. **E.g. fetching water, and using as a draught animal.**

**Key Facts about Indian Wild Ass**

- Sub-species of Asian Wild Ass (*Equus hemionus*)
- Distinguished by **unique white markings** on the front of the rump and back of the shoulder, along with a stripe down the back outlined in white.
- **Distribution:** The World's last population of Indian Wild Ass is restricted to **Rann of Kachchh, Gujarat.**
- **Habitat:** Desert and grassland ecosystems.
- **Conservation Status:**
  - **IUCN:** Near threatened
  - **CITES:** Appendix II
  - **Wildlife Protection Act (1972):** Schedule-I

**SHOW OF STRENGTH**

*Donkey breeds found in India are primarily used to carry heavy loads*

Breed	Native region; characteristics	Use
<b>Kachchhi</b>	Kutch region of Gujarat; grey, white, brown or black in colour	For weed removal in farms and as pack animal during pastoralist migration. It can carry 80-100 kg and pull 200-300 kg on carts.
<b>Halari</b>	Saurashtra region of Gujarat; white in colour, docile temperament	As pack animal during pastoralist migration and to pull carts. It can walk around 30-40 km in a day
<b>Sindhi</b>	Barmer and Jaisalmer districts of Rajasthan; brown in colour	As pack animal to transport water, soil, earthenware, construction material, fodder and to pull carts and for ploughing by small and marginal farmers. They can carry 1,000-1,500 kg.
<b>Spiti</b>	Cold desert areas of Himachal Pradesh; dark brown, brown or black in colour	For immediate transport of highly perishable cash crops and fruits, food grains and other items to far flung areas; to fetch wood, logs and other minor forest produce; and to bring dung or manure from pastures to villages or fields.

*Source: Indian Council of Agricultural Research-National Bureau of Animal Genetic Resources*

Note:

## Concerns Raised on Plastic Waste Pollution

### Why in News?

Recently, A parliamentary panel raised concerns over the ineffective handling of plastic waste in the country, citing a report from the **Comptroller and Auditor General (CAG)**.

- The panel criticised the **Central Pollution Control Board (CPCB)** for its lax approach to addressing the issue and urged the **Ministry of Environment Forest and Climate Change** to improve coordination and take concrete steps to combat plastic pollution.

### What is the Finding of the PAC Report?

- **Acknowledgment of Ministry's Efforts:** The **Public Accounts Committee (PAC)** acknowledged the Ministry's efforts on **plastic waste** since May 2021 but stressed the need for more effective measures to protect people from plastic pollution hazards.
- **Increasing Plastic Waste Generation:** Plastic waste generation has increased substantially from 15.9 lakh tonnes per annum (TPA) in 2015-16 to 41.2 lakh TPA in 2020-21.
- **Unutilized Plastic Waste and Environmental Impact:** Data from 2019-20 shows that **50% of the total plastic waste** in the country (34.7 lakh TPA) **remained unutilised**, leading it to pollute air, water and soil, and ultimately affecting human health.
- **Data Gap and Inconsistencies:** The PAC noted a big data gap, observing from **CAG's 2022 audit findings** that many **State Pollution Control Boards (SPCBs)** did not provide data on plastic waste generation for the period 2016-18 to the **Central Pollution Control Board (CPCB)**.
  - It also noted that data received from **SPCBs** was not validated by **CPCB** and in certain cases, there were inconsistencies in data shared by **Urban Local Bodies (ULBs)** with SPCBs.
- **Importance of Finding Alternatives to Plastic:** It observed that "finding a cost-effective and dependable alternative to plastic" was a prerequisite for its elimination.

### What are the Measures Taken to Curb Plastic Pollution?

- **Measures Taken at Global Level:**
  - **Resolution to End Plastic Pollution:**
    - In 2022, 124 countries, parties to the **United Nations Environment Assembly**, including India, signed a resolution to draw up a **legally binding agreement** for an **end to plastic pollution**.
  - **Closing the loop:**
    - It is a project of the **United Nations Economic and Social Commission for Asia and the Pacific** to assist cities in developing more inventive policy solutions to tackle the problem.
  - **The Global Tourism Plastics initiative:**
    - It aims to reduce plastic pollution from the tourism sector through a set of actionable commitments by **2025**.
  - **European Union:**
    - In July 2021, the **Directive on Single-Use Plastics** took effect in the **European Union (EU)**.
- **Measures taken by Indian Government:**
  - **Ban on Hard-to-Collect/Recycle Single-Use Plastics (SUP):** The Ministry of Environment, Forest and Climate Change had banned hard-to-collect/recycle, **Single-Use Plastic (SUP)** items.
    - The manufacturing, importation, sale, and **usage of plastic carry bags thinner than 120 microns** were prohibited.
  - The **Plastic Waste Management (Amendment) Rules, 2022**, introduce guidelines on **Extended Producer Responsibility (EPR)** for plastic packaging.
    - These guidelines set mandatory targets for **EPR**, recycling of plastic packaging waste, reuse of rigid plastic packaging, and the use of recycled plastic content.
  - **Local Body Responsibility:** **Plastic Waste Management Rules, 2016** state that every local body has to be responsible for setting up infrastructure for **segregation**, collection, processing, and disposal of plastic waste.
  - **Other Important Initiatives:**
    - **National Dashboard on Elimination of Single-Use Plastic and Plastic Waste Management**
    - **India Plastics Pact**
    - **Project REPLAN**
    - **National Green Tribunal (NGT)**

Note:

### What are the Recommendations of the PAC Report?

- **Importance of Reliable Data Assessment:** Underlining gaps in data, the panel expressed the need to have a “reliable assessment” of the amount of plastic waste being generated and it should be the first step towards managing the problem efficiently.
- **Mandatory Reporting on National Dashboard:** It recommended “mandatory” reporting of data online on the national dashboard.
- **Urgent and Effective Measures for Enforcement:** Immediate and effective steps, in addition to EPR, including spreading awareness about eco-friendly alternatives and ill-effects of SUP, providing funds for R&D on finding alternatives, making implementing agencies accountable, promoting use of recycled plastic content and increasing recycling facilities may be taken to “efficiently enforce the ban on SUP on ground”.
- **Vigilance over Industrial Practices:** There is a need to keep a close watch on industries to see whether they actually do require collection and recycling or instead make false claims.
- **Embracing a Bottom-Up Approach:** There is also a need to adopt a **bottom-up approach** where every block in the country should have at least one plastic waste recycling unit.
- **Encouraging Industry Participation:** Industries or private entities should be incentivised to set up such units at local levels and they should, in turn, work closely with waste pickers through effective remunerative measures.

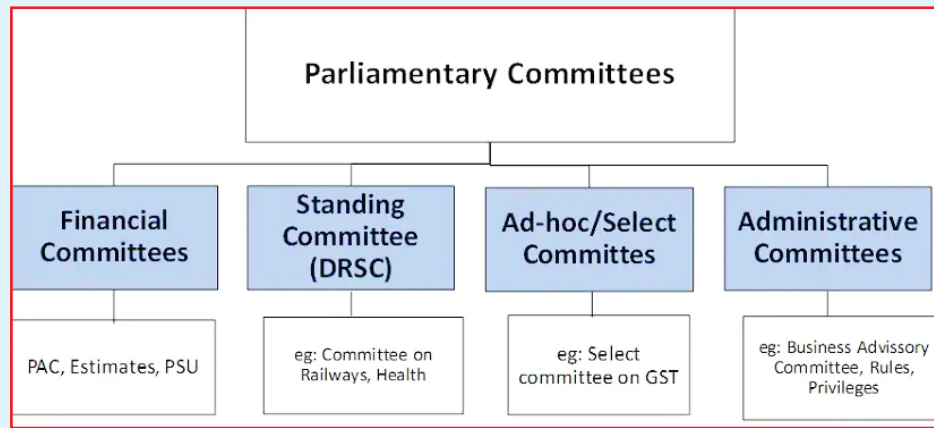
#### CPCB

- The **Central Pollution Control Board (CPCB)**, is a statutory organisation, was constituted in **1974** under the **Water (Prevention and Control of Pollution) Act, 1974**.
- CPCB was also entrusted with the powers and functions under the **Air (Prevention and Control of Pollution) Act, 1981**.
- It serves as a field formation and also provides technical services to the **Ministry of Environment and Forests and Climate change** of the provisions of the **Environment (Protection) Act, 1986**.

#### Public Accounts Committee (PAC)

- PAC is one of the three **Financial Parliamentary committees**, the other two are the **Estimates Committee** and the **Committee on Public Undertakings**.
- Parliamentary committees draw their authority from **Article 105** (on privileges of Parliament members) and **Article 118** (on Parliament’s authority to make rules for regulating its procedure and conduct of business).
- **Establishment:**
  - The **Public Accounts Committee** was introduced in **1921** after its first mention in the **Government of India Act, 1919** also called **Montford Reforms**.
  - The Public Accounts Committee is now constituted every year under Rule 308 of the Rules of Procedure and Conduct of Business in **Lok Sabha**.
- **Appointment:**
  - The **Chairman** of the Committee is appointed by the **Speaker of Lok Sabha**.
    - It is to be noted that the Committee, not being an executive body, can only make decisions that are advisory by nature.
- **Members:**
  - It presently comprises **22 members** (15 members elected by the **Lok Sabha Speaker**, and **7 members** elected by the **Rajya Sabha Chairman** with a term of **one year only**).

Note:



### What is EPR?

- It makes **producers responsible for the environmental impacts** of their products throughout their life cycle.
- EPR aims to promote better waste management and reduce the burden on municipalities.
- It integrates environmental costs into product prices and encourages the design of environmentally sound products.
- EPR applies to various types of waste, including **plastic waste, e-waste, and battery waste**.

## TN-SHORE

### Why in News?

The Tamil Nadu government has announced a new scheme called TN-SHORE, to revive the **coastal resources and protect the endangered species** in the 2024-2025 State Budget.

- TN-SHORE, aims to enhance coastal biodiversity, and coastal protection, improve livelihoods of coastal communities, and control pollution in coastal areas.
- Additionally, the Tamil Nadu government also highlighted the **Tamil Nadu Endangered Species Conservation Fund** aimed at **Endangered Species Conservation** and the pursuit of **Blue Flag certification** for 8 beaches.

### What are the Key Highlights of TN-SHORE?

- **About:**
  - TN-SHORE (Neithal Meetchi Iyakkam) is announced to **restore coastal resources** across 14 districts, spanning 1,076 km, at an estimated cost of Rs 1,675 crore.
  - The scheme aims to enhance coastal biodiversity, and coastal protection, improve livelihoods of coastal communities, and **control pollution in coastal areas**.

### ➤ TN-SHORE and Blue Economy:

- The **Blue Economy** refers to the **sustainable use of ocean resources for economic growth**, improved livelihoods, and jobs while preserving the health of the ocean ecosystem.
- The scheme will capitalise on the potential of the Blue Economy by focusing on the **restoration of mangroves, coral reefs, and salt marshes**, which are vital for the marine environment and the coastal economy.
- The scheme will also help in achieving the **Sustainable Development Goals (SDGs), especially SDG 14** (Life Below Water).
- **Benefits the Coastal Communities:**
  - The scheme will involve the participation of the local communities, especially the youth, in the conservation and management of the coastal resources.
  - The scheme will provide alternative livelihood opportunities for the coastal communities, such as ecotourism, waste management, and **circular economy** solutions.
  - The scheme will also contribute to the preservation of the cultural and natural heritage of the coastal areas.

Note:

## Tamil Nadu (TN) Government's Conservation and Certification Initiatives

- **Endangered Species Conservation:**
  - The TN government emphasised initiatives to **protect endangered species** through the establishment of the **Tamil Nadu Endangered Species Conservation Fund**.
  - Various stakeholders, including government entities, **corporate social responsibility initiatives**, and national and international funds, will contribute to this fund to protect endangered and critically endangered species.
- **Blue Flag Certification for Beaches:**
  - The government is actively pursuing **Blue Flag certification (BFC)** for eight beaches in Tamil Nadu, including the iconic **Marina Beach in Chennai**.
    - BFC is an **eco-label given to beaches**, marinas, and sustainable tourism boats that meet certain criteria. The criteria include environmental, educational, safety, and accessibility concerns.
    - It is accorded by the international jury composed of eminent members-**United Nations Environment Programme (UNEP)**, **United Nations World Tourism Organisation (UNWTO)**, Denmark-based NGO Foundation for Environmental Education (FEE) and **International Union for Conservation of Nature (IUCN)**.

## Gupteswar Forest as Biodiversity Heritage Site

### Why in News?

The pristine Gupteswar Forest, adjacent to Gupteswar Shiva temple in Odisha's Koraput district has been declared as the **4<sup>th</sup> Biodiversity Heritage Site (BHS)** of the state.

### What are the Key Points Related to Gupteswar Forest?

- **Area and Importance:**
  - The forest covers **350 hectares of demarcated area** and holds immense cultural significance with its sacred groves, traditionally revered by the local community.
- **Flora and Fauna Diversity:**
  - It harbours a **remarkable diversity of flora and fauna**. The forest is home to at least 608 faunal species, including 28 species of mammals.

### Significant Species:

- Notable faunal species documented in the forest include the mugger crocodile, **kanger valley rock gecko**, **sacred Grove Bush Frog**, and various avifauna such as black baza, Jerdon's baza, Malabar trogon, common hill myna, white-bellied woodpecker, and banded bay cuckoo.
- The limestone caves within the forest are **home to eight species of bats**, two of which are under the near-threatened category.
  - **Hipposideros galeritus** and **Rhinolophus rouxii** are under the near-threatened category of the **IUCN**.
- **Floral Diversity:**
  - The forest also boasts a rich floral diversity. It includes threatened medicinal plants like the **Indian trumpet tree** and **Indian snakeroot**.

### What is a Biodiversity Heritage Site?

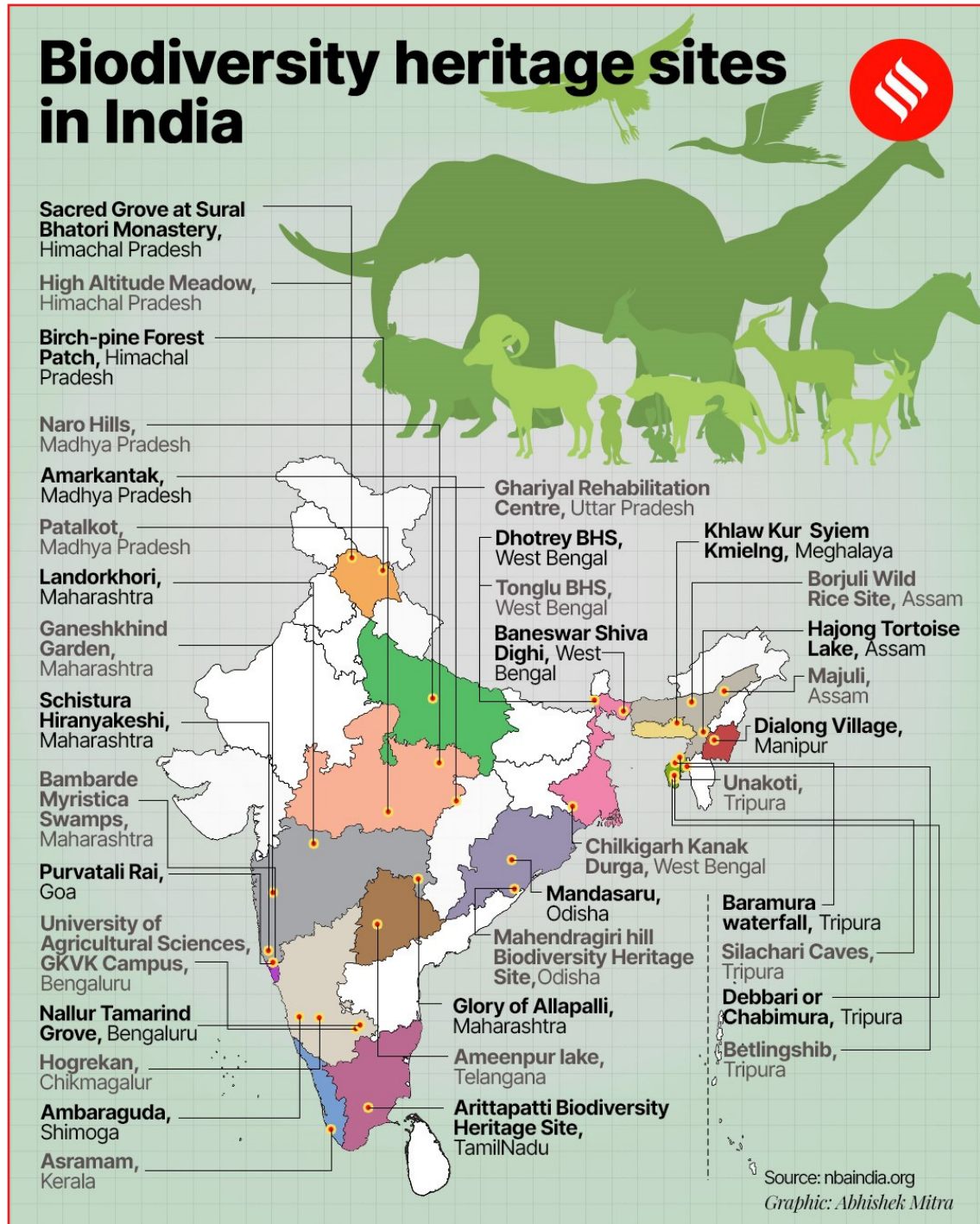
#### About:

- **Biodiversity Heritage sites (BHS)** are well-defined areas that are unique, ecologically fragile ecosystems with a high diversity of wild and domesticated species, the presence of rare and threatened species, and keystone species.
- **Legal Provision:**
  - As per provision under **Section 37(1) of 'The Biological Diversity Act, 2002'** State Governments are empowered to notify in the official gazette, in consultation with **'local bodies'**, areas of biodiversity importance as Biodiversity Heritage Sites.
- **Restrictions:**
  - Creation of BHS may not put any restriction on the prevailing practices and usages of the local communities, other than those voluntarily decided by them. The purpose is **to enhance the quality of life of the local communities** through conservation measures.
- **First BHS of India:**
  - **Nallur Tamarind Grove in Bengaluru**, Karnataka was the first Biodiversity Heritage Site of India, declared in 2007.
  - According to the **National Biodiversity Authority**, India has a **total of 45 Biodiversity Heritage Sites** as of **February 2024**.

Note:

➤ **Last Five Additions to BHS:**

- Haldir Char Island West Bengal (May 2023)
- Birampur-Baguran Jalpai West Bengal (May 2023)
- Tungkyong Dho Sikkim (June 2023)
- Gandhamardan Hill Odisha (March 2023)
- Gupteswar Forest Odisha (Feb 2024)



Note:

## CMS COP14

### Why in News?

The Fourteenth Meeting of the Conference of the Parties (CoP) to the **Convention on the Conservation of Migratory Species of Wild Animals** (CMS 14) has been concluded in Samarkand, Uzbekistan.

### What are the Key Highlights of CMS COP 14?

- **Adoption of Listing Proposals:**
  - Parties agreed to **adopt listing proposals for 14 migratory species**, including the Eurasian lynx, Peruvian pelican, Pallas's cat, guanaco, Lahille's bottlenose dolphin, harbour porpoise, Magellanic plover, bearded vulture, Blackchin guitarfish, Bull ray, Lusitanian cownose ray, Gilded catfish, and Laulao catfish.
  - These listings aim to **enhance protection and conservation efforts for these species.**
- **Cooperation and Conservation Efforts:**
  - The proposals emphasised the importance of cooperation between **range states to address threats to migratory species**, conduct research, and implement conservation activities.
    - **Range states** refer to countries or territories that are within the geographical range where a particular species occurs naturally. These countries or territories are directly involved in the management, conservation, and protection of the species and its habitat.
  - Efforts were focused on maintaining existing populations, improving connectivity, safeguarding **habitats, and restoring populations.**
- **Focus on Threats:**
  - Various threats to **migratory species were highlighted**, including habitat degradation, fragmentation, illegal trade, bycatch, contaminants, and human activities such as fencing, oil and gas development, mining, and underwater noise.
  - The inclusion of these species in the CMS appendices aims to address **these threats and promote their conservation.**
- **International Collaboration:**
  - Range states collaborated to propose listing amendments and adoption of conservation measures.

- Countries like North Macedonia, Kazakhstan, Uzbekistan, Chile, Argentina, Peru, Brazil, Uruguay, Ecuador, Panama, and others supported listing proposals and urged for **joint efforts to protect migratory species and their habitats.**

#### ➤ **Recognition of Endangered Status:**

- Several species, such as the Lahille's bottlenose dolphin, Peruvian pelican, and Magellanic plover, were recognized as **'Vulnerable,' 'Endangered,' or 'Critically Endangered'** in **IUCN Red List**, due to population decline and various threats.
- **Listing these species in CMS appendices** aims to improve their conservation status and provide support for habitat protection.

#### ➤ **Regional and Global Conservation Initiatives:**

- The adoption of proposals reflected efforts to address conservation issues at regional and global levels.
- Measures were recommended to protect specific populations, such as the Baltic Proper population of the harbour porpoise and the Mediterranean Sea populations of various species, while also considering broader conservation strategies.

### What is a Migratory Species?

- A species or **lower taxon of wild animals** of which the entire population or any geographically separate part of the population cyclically and predictably cross one or more national jurisdictional boundaries.
  - The word 'cyclically' relates to a cycle of any nature, such as astronomical (circadian, annual, etc.), life or climatic, and of any frequency.
  - The word 'predictably' implies that a phenomenon can be anticipated to recur in a given set of circumstances, though not necessarily regularly in time.

### What is CMS?

#### ➤ **About:**

- It is an intergovernmental treaty under the **UNEP (United Nations Environment Programme)-popularly known as Bonn Convention.**
- It was signed in 1979 and in force since 1983.
- As of 1<sup>st</sup> March 2022, the **CMS** has 133 Parties.
- India has also been a party to CMS since 1983.

Note:



- **Aim:**
    - It aims to conserve terrestrial, marine and avian migratory species throughout their range.
    - It lays the legal foundation to conduct conservation measures on a global scale.
      - The legal instruments under CMS may range from legally binding Agreements to less formal MoU.
  - **Two appendices under CMS:**
    - **Appendix I** lists 'Threatened Migratory Species'.
    - **Appendix II** lists 'Migratory Species requiring international cooperation'.
  - **India and the CMS:**
    - India has signed a non-legally binding Memorandum of Understanding (MoU) with CMS on conservation and management of Siberian Cranes (1998), Marine Turtles (2007), Dugongs (2008), and Raptors (2016).
    - With 2.4% of the world's land area, India contributes to around 8% of the known global biodiversity.
      - India also provides temporary shelter to several migratory species including **Amur Falcons, Bar-headed Geese, Black-necked Cranes, Marine Turtles, Dugongs**, Humpback Whales, etc.
- What are Initiatives Taken by India for Migratory Species?**
- **National Action Plan for the Conservation of Migratory Birds (2018-2023):** India has launched the National Action Plan for the conservation of migratory species along the Central Asian Flyway.
    - To reduce pressure on critical habitats and migratory routes by addressing the various challenges migratory birds face.
    - To stop the decline of migratory birds and reverse the scenario by 2027.
    - To avoid threats to habitats and migratory routes and ensure their sustainability for future generations.
    - To support transboundary cooperation among countries along the **Central Asian Flyway** to conserve migratory birds and their habitats.
    - To improve the database on migratory birds and their habitats to enhance our understanding of their conservation needs.
  - **India also Announced:**
    - Conservation of marine turtles- by launching its **Marine Turtle Policy and Marine Stranding Management Policy, by 2020**,
    - Reduction of pollution from **micro-plastic and single-use plastic**,
    - Transboundary protected areas for conservation of species like **Tigers, Asian elephants, Snow Leopard, the Asiatic Lion, the one-horned rhinoceros, and the Great Indian Bustard**, and
    - Sustainable infrastructure development like **Linear Infrastructure Policy Guidelines** to tailor development in ecologically fragile areas.
  - **Project Snow Leopard (PSL):** PSL was launched in 2009 to promote an inclusive and participatory approach to conserve snow leopards and their habitat.
  - **Dugong Conservation Reserve:** India has established its first **Dugong conservation reserve** in Tamil Nadu.
  - **Wildlife Protection Act, 1972:**
    - Rare and endangered species of birds including migratory birds are included in **Schedule-I** of the Act thereby according to them highest degree of protection.
    - Important habitats of birds, including migratory birds have been notified as **protected Areas under the Act** for better conservation and protection of birds and their habitats.
  - **Other Initiatives:**
    - Focused protection measures involving the local communities have been taken up in the State of Nagaland for protection of **Amur Falcons** that migrate to Northeast India on their route to Southern Africa.
    - India has taken several steps to **conserve vultures** like imposing ban on veterinary use of **diclofenac**, establishment of Vulture breeding centres etc.
    - **Wildlife Crime Control Bureau** has been established for control of illegal trade in wildlife and its parts and products.
- 
- ## Tripling Renewables by 2030
- Why in News?**
- Recently, a report has been published by **Think-Tank Climate Analytics** titled-**Tripling renewables by 2030: Interpreting the global goal at the regional level**, which breaks down what a **1.5°C-aligned Renewables** rollout would look like at the regional level and calculates the associated investment needs.

Note:

- At **COP (Conference of Parties) 28**, governments agreed to triple global renewable capacity by 2030. This, alongside **doubling energy efficiency**, is possibly the most powerful action the world can take in the transition away from fossil fuels this critical decade.

### What are the Key Highlights of the Report?

- **Tripling Renewables for 1.5°C Target:**
  - To align with the 1.5°C target set in the **Paris Agreement**, global renewable capacity needs to grow to **11.5 TW by 2030**, which is 3.4 times higher than 2022 levels.
  - To achieve this, different regions scale at different rates relative to their current renewable capacity, driven by the pace of fossil **phase-out needed and future electricity demand growth**.

A regional breakdown of 1.5°C compatible renewables deployment				
	Renewable capacity in 2030 (GW)	Capacity additions needed over 2023–2030 (GW)	Renewable capacity in 2030 (relative to 2022)	Renewable capacity growth from 2014–2022
Sub-Saharan Africa	300	260	x 6.6	x 1.9
Middle East and North Africa	500	460	x 11.8	x 1.8
Latin America	730	420	x 2.3	x 1.6
Eurasia	340	240	x 3.6	x 1.2
Asia	5350	3850	x 3.6	x 2.7
OECD	4290	2910	x 3.1	x 1.7
World	<b>11510</b>	<b>8130</b>	<b>x 3.4</b>	<b>x 2.0</b>

- **Regional Contributions:**
- **Asian Region:** Asia makes the biggest **overall contribution**, providing around half (47%) of the 8.1 TW of renewable capacity additions needed globally by 2030.
  - Asia is the only region that is broadly on track to triple renewables in line with 1.5°C by 2030.
    - This is primarily driven by growth in China and India which compensates for laggards like South Korea, where renewable capacity is set to grow at half the rate of the region as a whole.
  - However, the spree of coal-fired power plant

construction in China and India is a huge concern. If this continues, it will either **jeopardise a 1.5°C-aligned power sector transition** or create large-scale stranded assets.

- **OECD:** The **OECD (Organisation for Economic Co-operation and Development)** provides the next biggest share of global capacity additions at around a third (36%).
  - Renewables in the region scale at a slower rate of 3.1x due to **lower electricity demand growth** and a higher level of existing renewable capacity installed in 2022.
- **Sub-Saharan Africa:** Sub-Saharan Africa scales

Note:



relatively quickly at 6.6x due to low levels of existing renewable capacity and high energy access needs.

- Electricity demand is forecast to grow 66% per capita between 2020-2030 in the region,

resulting in a renewables scale up rate that is double the global average.

- Achieving such a rapid renewables rollout in Sub-Saharan Africa would require significantly upscaled international climate finance.

## INDIA'S CLIMATE TARGETS: EXISTING AND NEW

Target (for 2030)	Existing: First NDC (2015)	New: Updated NDC (2022)	Progress
Emission intensity reduction	33-35 per cent from 2005 levels	45 per cent from 2005 levels	24 per cent reduction achieved in 2016 itself. Estimated to have reached 30 per cent
Share of non-fossil fuels in installed electricity capacity	40 per cent	50 per cent	41.5 per cent achieved by the end of June this year
Carbon sink	Creation of 2.5 to 3 billion tonnes of additional sink through afforestation	Same as earlier	Not clear.

### ➤ Investment Requirements:

- Achieving the 1.5°C-aligned target requires USD 12 trillion of investment in the power system by 2030, with an average of USD 2 trillion per year from 2024 onwards.
- Two-thirds of this investment would be allocated to renewable installations, while the remainder would be for grid and storage infrastructure.

### ➤ Investment Gap and Potential Solutions:

- There exists a considerable investment gap, with the world set to invest USD 5 trillion less than required over 2024-2030.
- Shifting investments from fossil fuels to renewables and grids could cover this gap entirely, **aligning the power sector with the 1.5°C target.**

### ➤ Challenges and Urgency:

- Sub-Saharan Africa faces significant challenges due to a lack of investment and international support, risking millions missing out on the benefits of renewable energy.
- Urgent action is needed to mobilise finance and support renewables deployment in less wealthy regions to ensure the COP28 pledge is fulfilled.

### ➤ Policy Recommendations:

- In addition to scaling up renewables, governments must end public support and subsidies for fossil fuels to effectively reduce emissions.
- To guide efforts towards the goal, governments need a clear roadmap and information on investment and climate finance needs, while civil society needs benchmarks to hold governments to account.

### **What are the Indian Initiatives towards Clean Energy Transition?**

- **India has signalled a commitment to clean energy** with ambitious targets like 500GW of non-fossil, including 450 GW **Renewable Energy (RE)** capacity addition and 43% RE purchase obligation by 2030.
  - These targets are supported through complementary policy and legislative mandates (**Energy Conservation (Amendment) Act**), missions (**National Green Hydrogen Mission**), fiscal incentives (**production-linked incentives**) and market mechanisms (upcoming **national carbon market**).
- **Net Zero Target:**
  - India has set itself an ambitious long-term goal of reaching net zero **emissions by 2070.**

Note:

- In August 2022, India updated its **Nationally Determined Contributions (NDC)** under the Paris Agreement to reflect its aim of achieving 50% cumulative electric power installed capacity from non-fossil fuel based energy sources by 2030.
- **Energy Conservation Amendment Bill, 2022:**
  - In August 2022, the Lok Sabha passed the Energy Conservation Amendment Bill, 2022 which aims to **mandate the use of non-fossil fuel sources** including green hydrogen, green ammonia, biomass and ethanol for energy and feedstock in industries.
  - The Bill also gives the power to the Central Government to establish carbon markets.

## Challenges of Sustainable Fashion

### Why in News?

An overwhelming majority of clothes and fashion items now claim to be made from “**recycled materials.**” However, concerns are rising about the **effectiveness and sustainability of this approach.**

### What is Sustainable Fashion?

- Sustainable fashion refers to the concept of **creating fashion items in a way that reduces the environmental impact** and promotes social responsibility throughout the entire production process. It aims to create fashion items that are **environmentally friendly, socially responsible, and economically viable.**
- One of the primary focuses of eco-fashion is on the materials used in production. Sustainable fashion emphasises using natural and organic materials, such as wool, linen, and cotton, grown and harvested without harmful pesticides and chemicals.
- These materials are **biodegradable** and do not contribute to the buildup of waste in landfills.

### What is the Significance of Sustainable Fashion?

- **Environmental Impact:**
  - The fashion industry is a major contributor to global carbon emissions, water consumption, and waste production.
  - Sustainable fashion aims to **minimise these impacts by using renewable materials**, reducing resource

consumption, and implementing eco-friendly production processes.

#### ➤ Waste Reduction:

- Traditional fashion often leads to vast amounts of clothing ending up in landfills or being incinerated. Sustainable fashion **promotes circularity, where materials are reused, recycled, or biodegraded**, reducing waste and conserving resources.

#### ➤ Health and Safety:

- The use of harsh chemicals in conventional textile production can lead to health issues for both workers and consumers.
- Sustainable fashion avoids or minimises the use of toxic chemicals, promoting safer and healthier products for all.

#### ➤ Consumer Awareness:

- Sustainable fashion encourages consumers to consider the environmental and social impact of their clothing choices.
- By raising awareness and promoting conscious consumption, it empowers individuals to make more informed and **ethical purchasing decisions.**

### What are the Challenges to Sustainable Fashion?

#### ➤ Textile Recycling is More Complex:

- Textile recycling is more complex compared to recycling materials like glass or paper.
- The vast majority (93%) of recycled textiles come from plastic bottles or PET bottles (polyethylene terephthalate), which are made from fossil fuels.
- However, unlike plastic bottles that can be recycled multiple times, a **T-shirt made from recycled polyester cannot be recycled again.**
  - In Europe, most textile waste is either dumped or burned, with **only 22% being recycled.** However, the recycled textile is often repurposed into insulation, mattress stuffing, or cleaning cloths, rather than being reused in clothing production.
  - **Less than 1% of fabric used in clothing production is recycled** into new clothing.

#### ➤ Expensive and Labor-Intensive:

- Clothes containing more than two fibres are considered unrecyclable.
- Recyclable clothes must undergo colour sorting and removal of zips, buttons, studs, and other

Note:



materials. This process is usually **expensive and labour-intensive**.

- **Decline in Quality:**
  - When **materials are recycled**, especially in the case of textiles like cotton, the **quality often diminishes**.
  - This reduced quality can **limit the applications of the recycled material** and may necessitate blending with virgin materials, defeating the purpose of recycling.
- **Contamination:**
  - Materials intended for recycling can become **contaminated with other substances**, such as food residue in plastic containers or dyes in textiles.
  - Contamination can **degrade the quality of the recycled material** and complicate the recycling process.
- **Technological Limitations:**
  - Recycling technologies are still developing, particularly for certain materials like mixed-fibre textiles or impure plastics. As a result, the effectiveness and efficiency of recycling processes may be limited.
- **Carbon Footprint:**
  - After Western consumers deposit their unrecyclable polyester and mixed fabrics into recycling bins, a significant portion of this waste finds its way to African second hand markets, particularly in Ghana, or is dumped into open landfills.
    - Approximately **41% of the textile waste collected in Europe is shipped to Asia**, mainly to designated economic zones where it undergoes sorting and processing.
  - Europe's textile waste sent to Asia ends up in Export Processing Zones, notorious for lax labour standards and environmental regulations.
  - Exporting clothes to countries with low labour costs for sorting also raises concerns about the carbon footprint associated with transportation.

### ***What can be the Solution for Sustainable Fashion?***

- **Reducing Dependence on Polyester:**
  - Experts advocate for reducing reliance on polyester altogether, due to its detrimental environmental impact from production to recycling.

- **Embracing Alternative Fibres:**
  - Some fashion brands are exploring alternative fibres, such as **Pinatex made from pineapple leaves**, as a more sustainable option. However, caution is advised, as these fibres may still require thermoplastic materials for cohesion, limiting recyclability.
- **Addressing Overconsumption:**
  - Ultimately, **tackling overconsumption is deemed essential** for achieving sustainability in the fashion industry. Calls for consumers to buy fewer clothes and prioritise repair, reuse, and **upcycling** are echoed by environmental advocates.

### ***What are the Initiatives for Sustainable Fashion?***

- **At Global level:**
  - **United Nations Alliance for Sustainable Fashion:**
    - It is an initiative of **United Nations** agencies and allied organizations designed to contribute to the **Sustainable Development Goals** through coordinated action in the fashion sector.
  - **Traceability for Sustainable Garment and Footwear:** As part of this initiative, **UNECE (United Nations Economic Commission for Europe)** has launched "**The Sustainability Pledge**" inviting governments, garment and footwear manufacturers and industry stakeholders to pledge to apply toolkit of measures and take a **positive step towards improving the environmental and ethical credentials of the sector**.
  - **World Cotton Day (7<sup>th</sup> October):** It creates awareness of the **need for market access for cotton and cotton-related products** from **least-developed countries**, fosters sustainable trade policies and enables developing countries to benefit more from every step of the cotton value chain.
- **At National Level:**
  - **Project SU.RE:** SU.RE stands for '**Sustainable Resolution**'. It is the first-ever holistic effort towards gradually introducing a broader framework for establishing critical sustainability goals for the Indian textile industry. It was **launched in 2020**.
    - Objective: The project aims to **move towards sustainable fashion** that contributes to a clean environment.
  - **Khadi Promotion: Khadi and Village Industries Commission (KVIC)** promotes Khadi products.

Note:

They have tied up with leading brands to promote Khadi products.

- **Brown Cotton:** Brown Cotton, is a **local (to Karnataka) indigenous variety of desi cotton** that is recognised for its natural brown colour. This effort is a larger encompassing exercise that involves the environment, the economy as well as local communities.

## Marine Heatwaves in Arctic Ocean

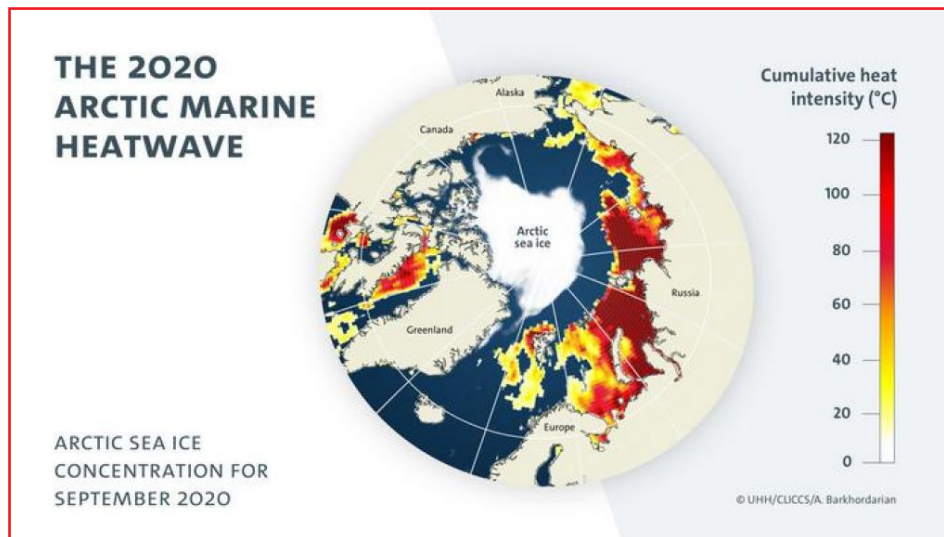
### Why in News?

Recently, a new study has been published in the journal Nature Communications titled- '*Arctic marine*

*heatwaves forced by greenhouse gases and triggered by abrupt sea-ice melt'*, which shows that since 2007, unprecedented **Marine Heatwave** (MHW) events have occurred over the **Arctic Ocean**.

### What are the Key Highlights of the Study?

- **Arctic Marine Heatwaves (MHWs) Characteristics:**
  - There have been 11 MHW events in the Arctic from 2007 to 2021, characterized by prolonged **high Sea Surface Temperatures (SST)**.
  - These events coincide with record **declines in Arctic Sea ice**.
    - In 2022, the Arctic saw severe and extreme marine heatwaves in the Laptev and Beaufort seas from spring to autumn, **according to the State of the Global Climate 2022** report.



- **Decrease in Ice Cover:**
  - The perennial sea ice cover over the Arctic Ocean, known to reflect solar radiation, has seen a marked decrease in both summer and winter since the mid-1990s.
  - Since 2007, there has been a **pronounced regime shift from a thicker and deformed ice cover** to a thinner and more uniform one.
    - The thin ice is less durable and melts more quickly, allowing incoming solar radiation to warm the water's surface.
- **Drivers of Arctic MHWs:**
  - Arctic MHWs primarily occur over marginal seas, including the **Kara, Laptev, East Siberian, and Chukchi seas**.
- These regions are characterized by **shallow mixed-layer depths** and predominantly first-year ice cover, creating conditions conducive to MHW development.
  - First-year ice refers to sea ice that forms and grows during a single winter season and typically melts away completely during the following summer melt season.
- **Abrupt sea ice retreat is another concern** as it could trigger marine heatwave events.
- **Impact of GreenHouse Gas (GHG):**
  - Without GHGs, marine heatwaves exceeding **1.5°C couldn't happen**.
    - GHGs are a sufficient cause for moderate marine heatwaves, with a 66-99% probability.

Note:

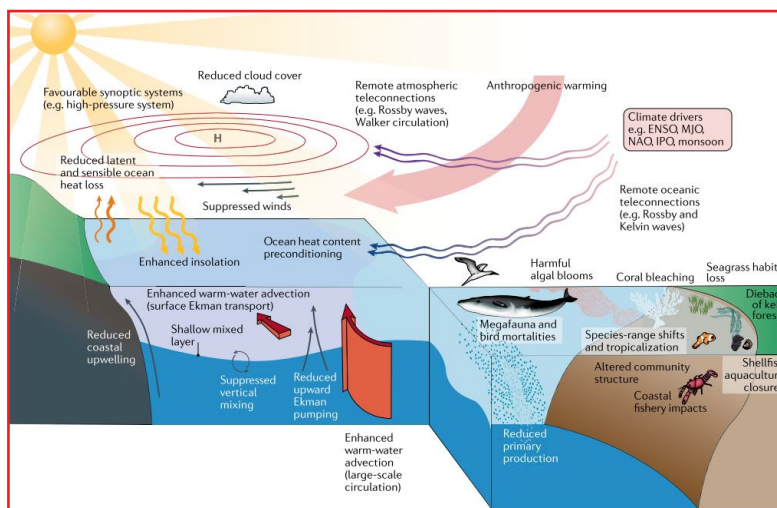


- **Long-Term Trends:**
  - There is a pronounced **long-term warming trend in the Arctic**, with SST increasing at a rate of 1.2°C per decade from 1996 to 2021.
  - Over the last two decades, there has been an increase in the frequency of extreme SST events in the eastern Arctic marginal seas.
- **Concerns:**
  - The study warned of dramatic consequences of Marine heatwaves like impact on **food chains**, fish stocks and reduction of overall biodiversity.
- **Technique Used in the Study:**
  - The study employs an **Extreme Event Attribution (EEA) technique** to assess the role of **Greenhouse Gas (GHG) forcing** in Arctic MHWs.
  - The EEA technique determines the **extent to which human-induced climate change influences** the likelihood and severity of specific extreme weather events.

### What are Marine Heat Waves (MHWs)?

- **About:**
  - A MHW is an extreme weather event. It occurs when the surface temperature of a particular region of the sea rises to 3 or 4 degree Celsius above the **average temperature for at least five days**.
  - According to the **National Oceanic and Atmospheric Administration (NOAA)**, MHWs can last for **weeks, months or even years**.
- **Impacts:**
  - **Impact on Ocean:** An increase of 3 or 4 degrees Celsius in average temperatures can be **catastrophic for marine life**.

- MHWs along the Western Australian coast in 2010 and 2011 caused some **“devastating” fish kills**, the sudden and unexpected death of many fish or other aquatic animals over a short period and mainly within a particular area.
- MHWs destroyed kelp forests and fundamentally **altered the ecosystem of the coast**.
  - Kelps usually grow in cooler waters, providing habitat and food for many marine animals.
- **Leading to Coral Bleach:** In 2005 high ocean temperatures in the tropical Atlantic and Caribbean led to a massive coral bleaching event.
  - Corals are very sensitive to the temperature of the water in which they live. When water gets too warm, they **expel the algae known as zooxanthellae**, living in their tissues, causing them to turn entirely white. This is called coral bleaching.
- **Impact on Humans:** Higher ocean temperatures, which are associated with MHWs, can make **storms like hurricanes and tropical cyclones stronger**.
  - With warmer temperatures, **the rate of evaporation escalates** and so does the transfer of heat from the oceans to the air. When storms travel across hot oceans, **they gather more water vapour and heat**.
  - This results in **more powerful winds, heavier rainfall and more flooding when storms** reach the land — meaning heightened devastation for humans.



Note:

### What are the other Impacts of Marine Heatwaves?

- **Affect the Structure of Ecosystem:**
  - Marine heatwaves influence the composition of ecosystems by favouring certain species while inhibiting others.
  - They have been linked to **widespread mortality among marine invertebrates** and can compel species to alter their behaviour, potentially exposing wildlife to greater risks of harm.
- **Change Habitat Ranges:**
  - Marine heatwaves can change the habitat ranges of certain species, such as the spiny sea urchin off southeastern Australia which has been expanding southward into Tasmania at the expense of kelp forests which it feeds upon.
- **Economic Losses:**
  - Marine heatwaves can cause economic losses through impacts on fisheries and **aquaculture**.
- **Affect Biodiversity:**
  - Biodiversity can be drastically affected by marine heatwaves.
    - The previous marine heatwave led to the bleaching of 85% of corals in the Gulf of Mannar near the Tamil Nadu coast.
- **Increase the Risk of Deoxygenation and Acidification:**
  - Often, they occur alongside other stressors such as **ocean acidification**, deoxygenation, and overfishing.
  - In such cases, MHWs not only further damage habitats but also increase the risk of deoxygenation and acidification.

### What are the Key Facts About the Arctic?

- **About:**
  - The Arctic is a **polar region located in the northernmost part of Earth**.
  - The Arctic consists of the **Arctic Ocean, adjacent seas**, and parts of Alaska (United States), Canada, Finland, Greenland (Denmark), Iceland, Norway, Russia, and Sweden.
    - The **Arctic Ocean** consists of the **Barents Sea, Kara Sea, Laptev Sea, Chukchi Sea, Beaufort Sea, Wandel Sea, Lincoln Sea**.
  - Land within the Arctic region has seasonally varying snow and ice cover.
- **Ecological Impact of Warming on the Arctic:**
  - The loss of ice and the warming waters will affect sea levels, salinity levels, current movement and precipitation patterns.
  - The Tundra is **returning to the swamp, the permafrost is thawing, sudden storms are ravaging coastlines and wildfires** are devastating interior Canada and Russia.
    - **Tundra:** A type of vegetation, found in regions north of the Arctic Circle and south of the Antarctic Circle. **These are treeless regions.**
  - The Arctic is also home to about 40 different indigenous groups like Chukchi in Russia, Aleut, Yupik and Inuit in Alaska.



Note:



# Art and Culture

## AYUSH Systems of Medicine

AYUSH encompasses Ayurveda, Yoga & Naturopathy, Unani, Siddha, Sowa Rigpa, and Homeopathy, with Ayurveda having a documented history of 5000+ years.

### Ayurveda

- ➔ **Samhita Period (1000 BC):**  
Emerged as mature medical system
  - ➔ **Charaka Samhita:** Oldest and most authoritative text
  - ➔ **Sushruta Samhita:** Gives fundamental principles and therapeutic methods in eight specialties
- ➔ **Main Schools:**
  - ➔ **Punarvasu Atreya** - School of physicians
  - ➔ **Divodasa Dhanvantari** - School of surgeons

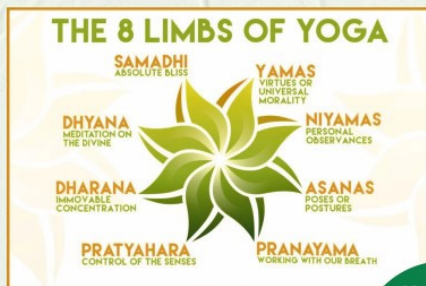
Lord Brahma is believed to be the 1<sup>st</sup> proponent of Ayurveda

### Branches of Ayurveda:

- |   |  |
|---|--|
| ■ Kayachikitsa (internal medicine)                    | ■ Agada Tantra (toxicology)                      |
| ■ Shalya Tantra (surgery)                             | ■ Bhootavidya (psychiatry)                       |
| ■ Shalaky Tantra (disease of supra-clavicular origin) | ■ Rasayana Tantra (rejuvenation and geriatrics)  |
| ■ Kaumarabhritya (paediatrics)                        | ■ Vajikarana (eugenics & science of aphrodisiac) |



### Yoga & Naturopathy



- ➔ **Naturopathy:** Healing with help of 5 natural elements - Earth, Water, Air, Fire and Ether
  - ➔ Based on theories of self-healing capacity of body and principles of healthy living
  - ➔ Encourages a **person-centred approach** rather than disease-centred

Yoga first propounded by Maharishi Patanjali in systematic form Yogsutra

### Unani

Pioneered in Greece, developed by Arabs as 7 principles (Umoor-e-Tabbiya)

- ➔ Based on the framework of teachings of **Buqrat** (Hippocrates) and **Jalinoos** (Galen)
  - ➔ Hippocratic theory of **four humors** viz. blood, phlegm, yellow bile, and black bile
- ➔ **Recognised by WHO** and granted official status by India as an alternative health system

### Siddha

Dates back to 10000 – 4000 BC;  
Siddhar Agasthiyar - Father of Siddha Medicine

- ➔ Preventive, promotive, curative, rejuvenative, and rehabilitative health care
- ➔ **4 Components:** Latro-chemistry, Medical practice, Yogic practice & Wisdom
- ➔ Diagnosis based on 3 humors (**Mukkutram**) and 8 vital tests (**Ennvagai Thervu**)

### Sowa Rigpa

Origin: Lord Buddha in India before 2500 years

- ➔ Traditional medicine in Himalayan regions of Ladakh, Himachal Pradesh, Arunachal Pradesh, etc.
- ➔ Recognised in India by Indian Medicine Central Council Act, 1970 (As amended in 2010)

### Homeopathy

German physician **Dr. Christian F. S. Hahnemann** codified its fundamental principles

- ➔ Medicines prepared mainly from natural substances (plant products, minerals, animal sources)
- ➔ Brought in India by European missionaries - 1810; official recognition - 1948
- ➔ **3 Key Principles:**
  - ➔ **Similia Similibus Curentur** (let likes be cured by likes)
  - ➔ Single Medicine
  - ➔ Minimum Dose



Drishti IAS

Note:

# History

## Highlights

- Rani Chennamma

## Rani Chennamma

### Why in News?

Commemorating 200 years of Rani Chennamma's rebellion against the **British East India Company**, several social groups across India have organised a national campaign, **Naanoo Rani Chennamma (I am Rani Chennamma too)** on 21<sup>st</sup> February.

- The Campaign is trying to invoke Chennamma's memory to show that women can be the vanguards of safeguarding dignity and justice. Rani Chennamma's bravery is an inspiration to the women of the country.
- Her stride and quick thinking to safeguard her homeland can be seen as a testament to her commitment and dedication to protecting her kingdom.



### Who was Rani Chennamma?

- **About:**
  - Chennamma was born on 23<sup>rd</sup> October 1778, in Kagati, a small village in present-day Belagavi district in Karnataka.
  - At the age of 15, she married Raja Mallasarja of Kittur, who ruled the province until 1816.
  - After Mallasarja's death in 1816, his eldest son, Shivalingarudra Sarja, ascended the throne. But it wasn't long before Shivalingarudra's health started deteriorating.

- Kittur needed an **heir apparent to survive**. However, Shivalingarudra had no natural heir and Chennamma too had lost her son.
- Before his death in 1824, Shivalingarudra adopted a child, **Shivalingappa**, as the successor. However, the **British East India Company** refused to recognise Shivalingappa as the successor of the kingdom under the **'Doctrine of Lapse'**.
  - **Under the doctrine**, any princely state without a natural heir would collapse and would be annexed by the Company.
- **John Thackery, the British official** at Dharwad, launched an attack on Kittur in **October 1824**.
- **Battle Against British:**
  - In 1824, a fleet of 20,000 British soldiers was positioned on the foothills of the Kittur fort as they attempted to invade the former princely state of Karnataka.
  - But Rani Chennamma retaliated and killed a British official to protect and safeguard her homeland.
  - Trained in martial arts and military tactics, she was a **formidable leader**.
  - She led her army into battle, **employing guerrilla warfare tactics to surprise the British forces**.
    - The conflict lasted several days, but ultimately, the British prevailed due to their superior firepower.
- **Legacy:**
  - Despite her capture and imprisonment in Bailhongal Fort (Belagavi, Karnataka), Rani Chennamma's spirit remained unbroken.
  - Her rebellion inspired countless others to stand up against British rule. She became a symbol of courage and defiance.
  - In 2007, the Indian government honoured her by **issuing a postage stamp in her name**.
  - Several Kannada **lavanis or folk songs** are recited that fondly remember Rani Chennamma as a protector and guardian.

Note:



- Lavani is a vibrant and expressive folk art form that has its roots in the cultural heritage of Maharashtra, but it has also found a place in certain parts of Karnataka. The word “**Lavani**” is derived from the Marathi term “lavanya,” which means beauty.
- Lavani is a combination of traditional song and dance, performed to the rhythmic beats of the Dholki, a percussion instrument.

### ***What is the Doctrine of Lapse?***

- It was an annexation **policy followed widely by Lord Dalhousie** when he was India’s **Governor-General from 1848 to 1856**.
- According to this, any princely state that was under the direct or indirect control of the East India Company

where the ruler did not have a legal male heir would be annexed by the company.

- As per this, any adopted son of the Indian ruler could not be proclaimed as heir to the kingdom.
- By applying the doctrine of lapse, **Dalhousie annexed the States of:**
  - Satara (1848 A.D.), Jaitpur, and Sambalpur (1849 A.D.), Baghat (1850 A.D.), Udaipur (1852 A.D.), Jhansi (1853 A.D.), and Nagpur (1854 A.D.).

### ***Conclusion***

- The Rebellion of Kittur Rani Chennamma remains a significant chapter in India’s struggle for freedom. Her unwavering leadership and resilience serve as a reminder that even in the face of daunting challenges, courage can prevail.



Note:

# Geography

## Highlights

- La Nina Links with Air Quality

## La Nina Links with Air Quality

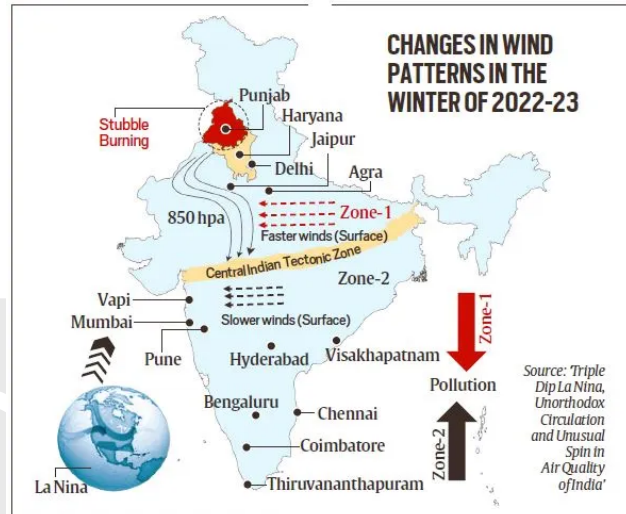
### Why in News?

Recently, a new study has been published by researchers at the Pune-based **Indian Institute of Tropical Meteorology** and the Bengaluru-based National Institute of Advanced Studies, suggesting that even air quality in India could be influenced by **El Nino and La Nina events**.

- The study has suggested that the unusual air quality in some Indian cities in the winter of 2022 could be attributed to the record-breaking spell of **La Nina** prevailing at that time.

### What are the Key Findings of the Study?

- **Link between Pollution and Winter Months in India:**
  - During October to January, northern Indian cities, like Delhi, typically have high levels of **PM2.5** due to various meteorological factors and pollution transport from regions like Punjab and Haryana.
  - The western and southern parts of the country have always had **relatively lower levels of pollution**, because of their proximity to oceans.
  - The **winter of 2022**, however, showed a significant deviation from this normal.
    - **Northern Indian cities**, including Delhi, were **cleaner** than usual, while cities in the west and the south, like Mumbai, Bengaluru and **Chennai**, experienced **worse-than-usual air quality**.
- **Anomalous Behaviour in Winter 2022:**
  - PM2.5 concentrations in Ghaziabad and Noida reduced significantly, while Delhi saw a slight reduction. In contrast, Mumbai and Bengaluru experienced rises in PM2.5 levels.
    - Northern Indian cities had cleaner air than western and southern cities.



### Factors Causing Anomaly:

- The most crucial factor in explaining the anomaly of winter 2022 was a change in the normal wind direction.
- During winter, the wind usually **blows in the northwesterly direction**. For example, from Punjab towards Delhi and further into the **Gangetic plains**.
  - It is a reason for transporting agricultural waste pollutants from Punjab and Haryana into Delhi.
- In the winter of 2022, however, the **wind circulation was in the north-south direction**.
  - The pollutants being carried from Punjab and Haryana **bypassed Delhi** and surrounding areas and **flew over Rajasthan and Gujarat** to southern regions.
- **La Nina's Influence:**
  - Extended **La Nina persisted** for an unusually long **three years** by the winter of 2022, impacting wind patterns.
    - The three consecutive years of La Niña conditions (2020-23) — a rare **“Triple-Dip”** phenomenon — had widespread impacts on the ocean and climate across the globe.

Note:

- Not all La Nina events might produce noticeable changes in wind circulation over India.
- The 2022 event is particularly strong. And the impact on air circulation became evident only in the third year of La Nina. So, there may be an accumulative effect.
  - The study suggests an **unclear impact of El Nino on air quality in India.**

## El Niño and La Niña

### El Niño

- Warming of the ocean surface/ Above average sea surface temp. (SST)
- Easterly winds either weaken or start blowing in the opposite direction
- First noticed by Peruvian fishermen in the 1600s
- More frequent than La Niña

#### Impacts

- Drastically higher rainfall in S. America (coastal flooding and erosion)
- Droughts in Indonesia and Australia; wildfires
- Weaker monsoons and even droughts in India and SE Asia
- Reduces the upwelling of cooler, nutrient-rich waters from the deep - along the west coast of South and Central America.

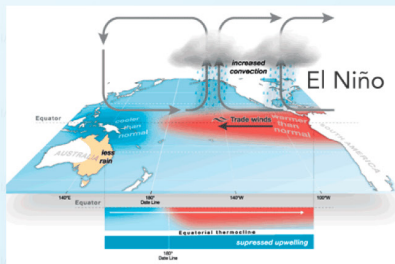


Fig. 1 - Depiction of El Niño Phenomenon

### La Niña

- Also called El Viejo, anti-El Niño, or simply "a cold event"
- Normal easterly winds along the equator become even stronger
- May last 1-3 years, unlike El Nino (which usually lasts no more than a year)

#### Impacts

- Heavier rains in SE Africa, catastrophic floods in Australia
- Drier-than-normal conditions in S. America
- Summer Monsoon rainfall - greater than normal rainfall in India; beneficial for agriculture dependent Indian economy
- Off the west coast of the Americas, upwelling increases, bringing cold, nutrient-rich water to the surface.

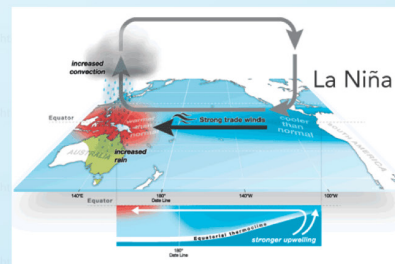


Fig. 2 - Depiction of La Niña Phenomenon

### Oceanic Niño Index (ONI)

- It is a measure of the departure from normal sea surface temperature in the east-central Pacific Ocean.
- It is the standard means by which each El Nino episode is determined, gauged, and forecast.

# El Nino Southern Oscillation (ENSO)

Describes the fluctuations in temperature between the ocean and atmosphere **in the east-central Equatorial Pacific**

## Significance:

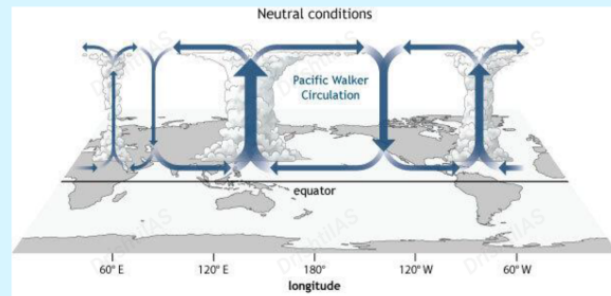
- Ability to change the global atmospheric circulation, influencing temperature and precipitation worldwide

## States of ENSO:

- The two opposite phases - **El Niño** and **La Niña**
- The middle of the continuum - **Neutral**

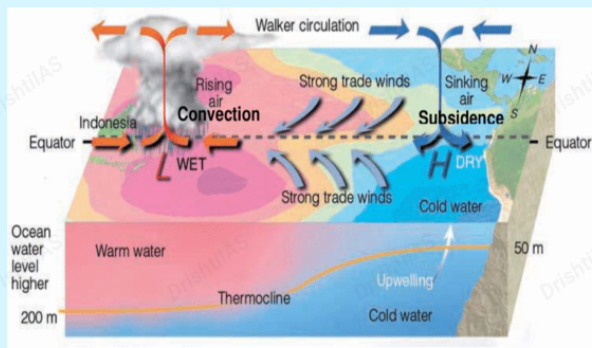
## Walker Circulation (WC)

- An **atmospheric system of air flow** in the equatorial Pacific Ocean
  - The trade winds across the tropical Pacific flow from east to west: air rises above the warm waters of the western Pacific, flows eastward at high altitudes, and descends over the eastern Pacific
- WC and ENSO:
  - A weak/reverse WC produces **El Niño**
  - Stronger WC results in **La Niña**



## Normal (non ENSO) Conditions in the Pacific Ocean

### NEUTRAL ENSO



- **Trade winds (easterlies) blow west** along the equator, taking warm water from S. America towards Asia
- To replace that warm water, **cold water rises from the depths** — a process called **upwelling**
  - **El Niño and La Niña** are two climate patterns that **break these normal conditions**
- During an El Niño, sea level pressure tends to be lower in the eastern Pacific and higher in the western Pacific while the opposite tends to occur during a La Niña
  - This see-saw in atmospheric pressure between the eastern and western tropical Pacific is called the **Southern Oscillation (SO)**

**Indian Institute of Tropical Meteorology (IITM)**

- IITM is a **scientific institution** based in Pune, Maharashtra. It specializes in expanding research related to tropical meteorology, with a **special focus on the tropical Indian Ocean**.
- Key areas of study include monsoon meteorology and air-sea interactions in the South Asian climate.
- IITM operates **as an autonomous institute under the Ministry of Earth Sciences**, Government of India.

**National Institute of Advanced Studies (NIAS)**

- NIAS is an **autonomous research institution** located in Bengaluru, India. It was established in 1988 with the vision and initiative of the late Mr. J.R.D. Tata.
- The institute **aims to nurture a broad base of scholars**, managers, and leaders who can address complex societal challenges through interdisciplinary approaches.
- NIAS conducts advanced multidisciplinary research in various fields, including humanities, social sciences, natural sciences, engineering, and conflict and security studies.



Note:

# Miscellaneous

## Highlights

- Paruveta Utsavam
- Global Initiative on Digital Health
- Jnanpith Award 2023

## Paruveta Utsavam

### Why in News?

The Indian National Trust For Art And Cultural Heritage (INTACH) is making efforts to get the **United Nations Educational, Scientific and Cultural Organization (UNESCO)** to declare the annual 'Paruveta' (mock hunting festival), as an '**intangible cultural heritage**'.

### What is Paruveta Utsavam?

#### ➤ About:

- It is an **annual mock hunting festival** celebrated at the Sri Narasimha Swamy temple in **Ahobilam, Andhra Pradesh**.
  - The temple, under the governance of the 600-year-old **Ahobila Mutt** through the '**Guru Parampara**', has promoted **Srivaishnavism** among tribal communities, as evidenced by the Sanskrit drama **Vasanthika Parinayam** authored by the **Mutt's 7<sup>th</sup> Jeeyar (pontiff)**.
- This festival **symbolises communal harmony**, during which the deity from the temple's sanctum sanctorum is taken to the **32 Chenchu tribal hamlets** around **Ahobilam for 40 days (a Mandala)**.
- The spiritual journey commences with tribal individuals aiming their bows and shooting two arrows at the palanquin, symbolising reverence and their protective watch over the deity.
- The **Sankranti festival** is celebrated on the day the deity reaches their hamlet.
  - While Paruveta is commonly observed in many temples during Vijayadasami or Sankranti, it is only in Ahobilam that it is conducted for a '**mandala**' (forty days).
  - Chenchus take '**Narasimha Deeksha**' by wearing yellow robes and 'Tulasi Mala' and observe celibacy during this period.

- The **Pancharatra Agama** (doctrine of temple worship) refers to **Paruveta** as '**Mrugayotsava**' and provides guidelines for its conduct, emphasising its significance in temple worship.

#### ➤ Folklore:

- In folklore, it's said that **Lord Vishnu**, in his Narasimha incarnation, wedded **Maha Lakshmi**, incarnated as a tribal girl named **Chenchulakshmi** in Ahobilam, where Chenchu tribes honoured Narasimha as their brother-in-law and invited him home for Makara Sankranti.

#### ➤ Chenchu Tribe:

- The **Chenchus**, also called 'Chenchuvaru' or 'Chenchwar' is numerically the **smallest Scheduled Tribe of Odisha**.
- They mainly inhabit in the **Nallamalai Hill ranges** in the southeastern part of India.
  - They are an **aboriginal semi-nomadic tribe** of the central hill religions of Andhra Pradesh.
- Their traditional way of life has been based on **hunting and food gathering**.
- **Chenchu tribes** are **Particularly Vulnerable Tribal Group (PVTGs)** of Andhra Pradesh and Telangana.

### What is Intangible Cultural Heritage?

- **Intangible cultural heritage** is the practices, expressions, knowledge, and skills that communities, groups, and sometimes individuals recognize as part of their cultural heritage.
- Also called living cultural heritage, it is usually expressed in one of the following forms:
  - Oral Traditions
  - Performing Arts
  - Social Practices
  - Rituals and Festive events
  - Knowledge and Practices concerning nature and the universe
  - Traditional Craftsmanship

Note:





Year	Recognition of Tradition by UNESCO as Intangible Cultural Heritage
2023	Garba of Gujarat
2021	Durga Puja in Kolkata
2017	Kumbh Mela
2016	Nawrouz, Yoga
2014	Traditional brass and copper craft of utensil making among the Thatheras of Jandiala Guru, Punjab, India
2013	Sankirtana, ritual singing, drumming and dancing of Manipur
2012	Buddhist chanting of Ladakh: recitation of sacred Buddhist texts in the trans-Himalayan Ladakh region
2010	Chhau dance, Kalbelia folk songs and dances of Rajasthan
2009	Ramman, religious festival and ritual theatre of the Garhwal Himalayas, India
2008	Kutiyattam, Sanskrit theatre, Tradition of Vedic chanting Ramlila, the traditional performance of the Ramayana

### What is the Indian National Trust for Art and Cultural Heritage (INTACH)?

The **INTACH** was founded in 1984 with the vision to spearhead heritage awareness and conservation in India.

- It is a **non-profit charitable organisation** registered under the **Societies Registration Act, of 1860**.
- It has pioneered the **conservation and preservation** of not just our natural and built heritage but intangible heritage as well.
- In 2007, the **United Nations** awarded INTACH a special consultative status with the United Nations Economic and Social Council.

## Global Initiative on Digital Health

### Why in News?

During India's **G20 presidency** in 2023, the **World Health Organization (WHO)** initiated the **Global Initiative**

on **Digital Health (GIDH)** virtually, focusing on one of the three priority areas agreed upon during this period.

- GIDH will support countries in three ways by **listening to their needs, by aligning resources to avoid fragmentation and overlap**, and by providing **quality-assured products**.

### What is the Aim of the GIDH?

#### ➤ About:

- The new **GIDH initiative** will operate as a **WHO-managed network and platform** to support the implementation of the **Global Strategy on Digital Health 2020–2025**.

- The Global Strategy on Digital Health 2020–2025 outlines a comprehensive framework for leveraging digital technologies to enhance health and healthcare systems worldwide.

- As a **WHO Managed Network (“Network of Networks”)**, GIDH aims to consolidate and **amplify recent and past gains in global digital health** while strengthening mutual accountability.

#### ➤ Aim:

- Developing clear priority-driven investment plans for digital health transformation.
- Improving reporting and transparency of digital health resources.
- Facilitating knowledge exchange and collaboration across regions and countries to accelerate progress.
- Supporting whole-of-government approaches for digital health governance in countries.
- Increasing technical and financial support to the implementation of the **Global Strategy on Digital Health 2020–2025** and its next phase.

#### ➤ Four Main Components:

- **Country Needs Tracker:** A mechanism to identify and track the digital health needs of different countries.
- **Country Resource Portal:** A map of available digital health resources within each country.
- **Transformation Toolbox:** A repository of quality-assured digital tools for health transformation.
- **Knowledge Exchange:** Facilitation of knowledge sharing among participating nations.

#### ➤ Role of India:

- India played a crucial role in establishing this institutional framework for digital health during its G20 presidency.

Note:

- India's **Ayushman Bharat Digital Mission** is working toward creating a seamless electronic health record system.

### What is Digital Healthcare?

#### ➤ About:

- Digital healthcare is a system of medical care delivery that uses an array of digital technologies to make quality medical care services accessible, affordable, and sustainable.
- The broad scope of digital health includes categories such as mobile health (mHealth), health information technology (IT), wearable devices, telehealth and telemedicine, and personalised medicine.

#### Initiatives of India Related to Digital Health:

- **Ayushman Bharat Digital Mission (ABDM)**,
- **e-Sanjeevani Teleconsultation Service**
- **Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)**
- **CoWIN App**

## Jnanpith Award 2023

### Why in News?

The Jnanpith selection committee announced that the **58<sup>th</sup> Jnanpith Award** will be given to two writers, **Sanskrit** scholar Jagadguru Rambhadracharya and **Urdu** poet and lyricist Gulzar, for 2023.

- It is the second time the award is being given for Sanskrit and the fifth time for Urdu.

### What is the Jnanpith Award?

#### ➤ About:

- The Jnanpith Award is **India's oldest and highest literary award**. It's given annually to an author for their "**outstanding contribution towards literature**". The award was established in 1961 and first awarded in 1965.
- The Award considers **both English and other Indian languages**. However, eligibility is restricted to **Indian citizens**. It is not given posthumously.
- It is presented by **Bharatiya Jnanpith** to recognize outstanding contributions to Indian literature.
  - Bharatiya Jnanpith, established in 1944 by **Sahu Shanti Prasad Jain and his wife Rama Jain**, is a

prestigious literary and research organization headquartered in **New Delhi**, India.

- It is renowned for nurturing literature and culture, it has been actively promoting literary endeavours such as **awards, publications, fellowships, and research for several decades**.

#### ➤ Cash Prize and Recognition:

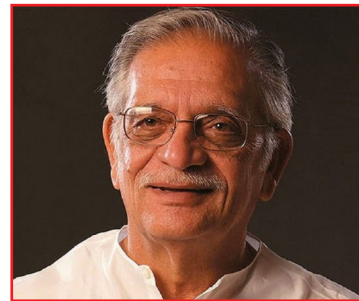
- Awardees receive a cash prize of Rs 11 lakh, a statue of Vagdevi, and a citation, honouring their literary achievements.



### What are the Contributions of Gulzar and Jagadguru Rambhadracharya?

#### ➤ Gulzar:

- Gulzar (**Sampuran Singh Kalra**) was born on 18<sup>th</sup> August 1934, in the village of Dina, Jhelum district of undivided India.
- He is one of the most respected names not just in cinema but also in literary circles. He is considered one of the finest Urdu poets of his era.
- Gulzar received the **Sahitya Akademi Award** (2002) for Urdu, the **Dadasaheb Phalke Award** (2013), the **Padma Bhushan** (2004), and the **National Film Awards** for his works.
- In poetry, he invented a new genre '**Triveni**' which is a **non-mukaffa poem of three lines**.
- Some of his finest works include the song "Jai Ho" for the film "Slumdog Millionaire", which received an **Oscar award** in 2009 and a **Grammy Award** in 2010.



Note:

➤ **Jagadguru Rambhadracharya:**

- Jagadguru Ramanandacharya, is a **polyglot**, Hindu spiritual leader, educator, poet and writer. He was born in 1950 in Jaunpur, Uttar Pradesh and **speaks 22 languages**.
  - Rambhadracharya is a poet and writer in several Indian languages, including Sanskrit, Hindi, Awadhi, and Maithili. He has written more than 240 books and texts in various Indian languages and received the **Padma Vibhushan in 2015**.
  - Arundhati, Aṣṭāvakra, Avadha Kai Ajoriya and Dashavtar are some of the literary works composed by Rambhadracharya.
- He is the founder and head of **Tulsi Peeth in Chitrakoot, Madhya Pradesh**.
  - Tulsi Peeth is one of the leading publishers of Hindu religious literature.

- Rambhadracharya is one of the four Jagadguru Ramanandacharyas of the **Ramananda sect (Sampradaya)** and has been holding this position since 1982.
  - The **Ramanandi Sampradaya** is one of the largest and most egalitarian Hindu sects in India, around the Ganges Plain, and Nepal today. It mainly emphasises the worship of Rama, as well as Vishnu directly and other incarnations.



Note:

# Rapid Fire Current Affairs

## Highlights

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- RBI Regulates Card-Based Commercial Payments
- Sangam: Revolutionising Infrastructure through Digital Twins
- United Kingdom Economy in Technical Recession
- Security Printing and Minting Corporation of India Limited

## Hungary Ratifies Sweden's NATO Membership

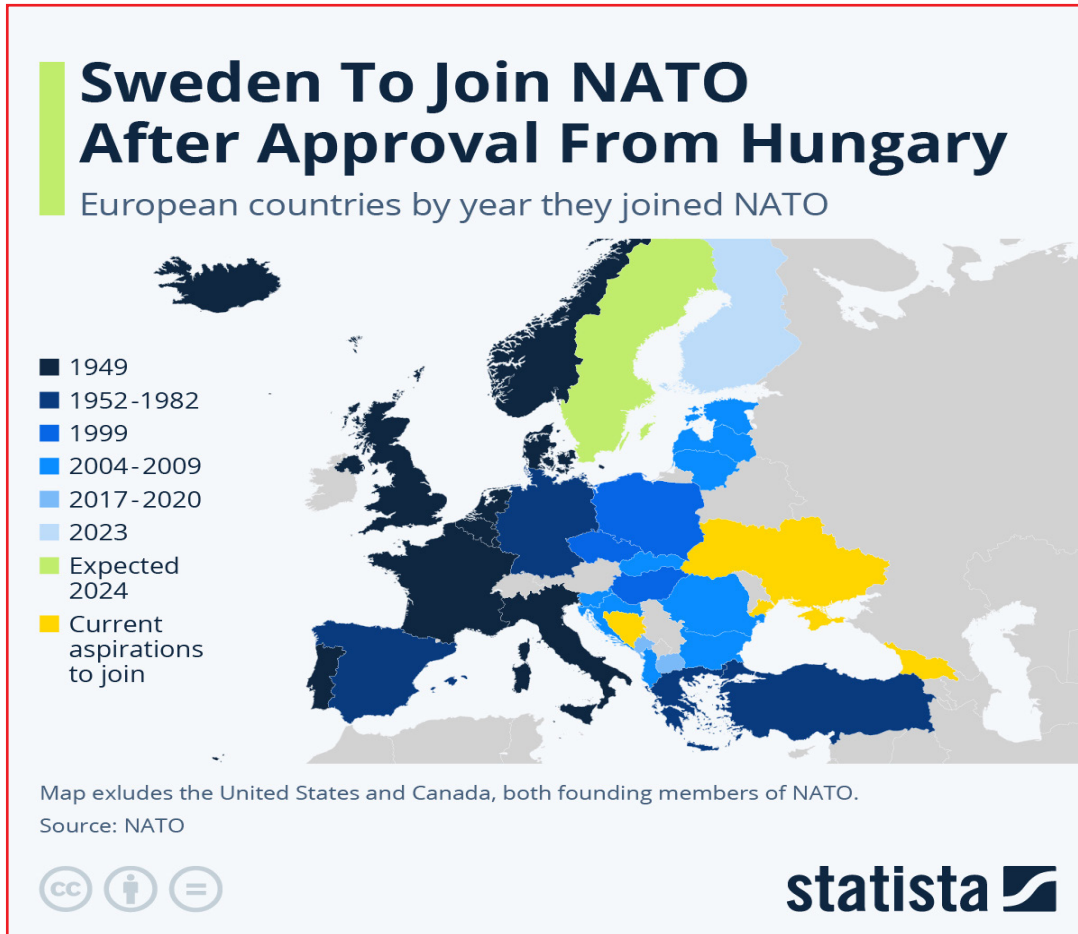
Hungary's parliament voted to approve Sweden's bid to join the **North Atlantic Treaty Organization (NATO)**, making it the 32<sup>nd</sup> nation to join the alliance.

- NATO, a vital **transatlantic military and political alliance**, ensures **collective security** for its member countries. Established in 1949 by 12 founding nations, with a majority from Europe and North America, it remains a cornerstone of international stability.
- NATO is headquartered at **Boulevard Leopold III in Brussels, Belgium**.
- **Alliances of NATO:**
  - **Euro-Atlantic Partnership Council (EAPC)**

Note:



- **Mediterranean Dialogue** fosters security and stability in the Mediterranean by enhancing relations between participating countries and NATO Allies.
- **Istanbul Cooperation Initiative (ICI)** offers non-NATO countries in the broader Middle East region the opportunity to cooperate with NATO, aiming to enhance regional security.
- **“NATO plus”** refers to a security arrangement of **NATO and the five treaty allies** of the U.S. — **Australia, New Zealand, Japan, Israel, and South Korea** as members — to enhance **“global defence cooperation”** and win the **“strategic competition with the Chinese Communist Party”**.
- **NATO Plus is not an officially recognised or established concept** within NATO.



Read more: [North Atlantic Treaty Organization \(NATO\)](#)

## Homosep Atom

**Homosep Atom**, developed by the startup named **Solinas**, is India's first **septic tank/manhole** cleaning robot, is revolutionising sanitation efforts nationwide, replacing **manual scavenging** with a comprehensive robotic solution, bolstering the **Swachh Bharat Campaign**.

- It streamlines sewer cleaning with multifunctional capabilities, **curbing costs** and fostering **robotic sanitation** while **mitigating blockages** in congested areas.
  - Extending its reach to large complexes and individual residences, it has enhanced municipal waste management, prioritising worker safety and efficiency.

Note:

- **Solinas**, a **deep-tech startup** from IIT Madras, pioneers **miniature robots** for water-sewer pipelines, aided by the **Department of Science and Technology -Technology Business Incubator (DST-TBI)**, addressing contamination challenges, climate tech solutions, and **AI-based pipeline** diagnostics for sustainable water management.
- **DST's Technology Business Incubators (TBIs)** in academic, technical, and R&D institutions under the **NIDHI program** support innovative startups, encouraging youth to create knowledge-based enterprises, solve societal challenges, and contribute to national growth.



Read more: [Manual Scavenging](#)

## SWAYAM Plus Platform

Recently **SWAYAM Plus Platform** was inaugurated by the Union Minister of Education and Skill Development & Entrepreneurship in New Delhi.

- **SWAYAM**, the **Massive Open Online Course (MOOC)** platform providing educational opportunities for a vast number of learners, was launched by the Ministry of Education in 2017.
- Aligned with **NEP 2020**, **SWAYAM Plus** now offers industry-relevant courses to boost employability, with features like multilingual content, **AI guidance**, credit recognition, and pathways to **employment**, developed in collaboration with companies like L&T, Microsoft, CISCO, and others.
  - **SWAYAM Plus** primarily **focuses** on achieving the following:

- Creating an **ecosystem** that supports professional and career development for learners, course providers, industry, academia, and strategic partners.
- Implementing a system that acknowledges **high-quality certifications** and courses from top industry and academic partners.
- Reaching a broad learner base nationwide, especially in **tier 2 and 3 towns** and rural areas, by providing employment-focused courses in various disciplines with **vernacular language** resources.

Read more: [SWAYAM and SWAYAM Prabha](#)

## Ultra-high Net Worth Individuals in India

In India, the number of **Ultra-high Net Worth Individuals (UHNWIs)** has been steadily increasing, reaching 13,263 individuals in 2023 and projected to grow to nearly 20,000 by 2028, as per **Knight Frank's 'The Wealth Report 2024'**.

- UHNWIs are individuals with a net worth of **USD 30 million and above**.
  - The UHNWI population in India saw a 6.1% growth in 2023 it is **projected to rise 50% by 2028**, reflecting a positive trend in wealth accumulation.
- Globally, the number of wealthy individuals is expected to rise by 28.1% to 8,02,891 by 2028.
  - **Turkey leads in UHNWI growth with a 9.7% Yearly expansion**, followed by the US, South Korea, and Switzerland.

## Blanets

Interstellar, Christopher Nolan's 2014 sci-fi masterpiece, presents three captivating planets orbiting **black holes**, known as **blanets**, which scientists speculate **could exist in reality**.

- Scientists in Japan theorized in 2019 that **planets could form near supermassive black holes** from massive dust and gas clouds observed in their vicinity. These planets, termed "**blanets**," **are not anticipated to resemble Earth**.
- Planets are formed when the dust and gas swirling around a young star collide and clump together. A similar process could be in **play near supermassive black holes**, where planets take shape inside the disc and eventually become blanets.

Note:

- Planets are projected to be significantly larger than Earth, approximately 3,000 times its size.
  - To avoid gravitational destruction, **planets would need to orbit the black hole** at a distance of approximately 100 trillion kilometers.

# BLACK HOLES

## ABOUT

- A place in space with **extremely high gravity pull**; even light can't escape (hence, **invisible**)
- The strong gravity is due to matter being squeezed into a tiny space

The term 'black hole' was coined in the mid-1960s by American physicist John Archibald Wheeler

## DETECTION

- By seeing how stars very close to black holes act differently than other stars
- In April 2019, scientists at the **Event Horizon Telescope Project** released the first-ever image of a Black Hole (shadow, more precisely)

## Albert Einstein and Black Hole

- First predicted their existences in **Theory of General Relativity**
- It showed that when a massive star dies, it leaves behind a small, dense remnant core

India's first dedicated satellite, AstroSat observed for the very first-time rapid variability of high energy X-ray emission from a black hole system

## TYPES

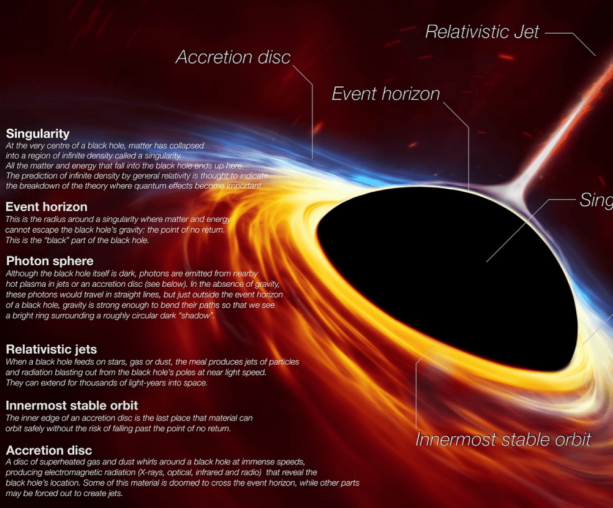
- **Miniature (Hypothetical):**
  - The smallest; size of just 1 atom
  - Mass: varies from 1/100th of a milligram to the mass of a large mountain
  - **Believed to be formed** when universe began
- **Stellar:**
  - Mass: **20x the mass of sun**
  - Believed to be **formed due to Supernovae explosion**

Supernova is an exploding star that has reached the end of its life

- **Supermassive**
  - The largest
  - Mass: >1 million suns together
  - Every large galaxy has a supermassive black hole at its centre
  - Believed to be made at the same time as their home galaxy

Sagittarius A is the supermassive black hole at the centre of Milky Way (mass: ~about 4 mn suns)

The Sun will never turn into a black hole as it is not big enough to make a black hole



**Singularity**  
At the very centre of a black hole, matter has collapsed into a region of infinite density called a singularity. All the matter and energy that fall into the black hole ends up here. The prediction of infinite density by general relativity is thought to indicate the breakdown of the theory where quantum effects become important.

**Event horizon**  
This is the radius around a singularity where matter and energy cannot escape the black hole's gravity; this point of no return. This is the "black" part of the black hole.

**Photon sphere**  
Although the black hole itself is dark, photons are emitted from nearby hot plasma in jets or an accretion disc (see below). In the absence of gravity, these photons would travel in straight lines, but just outside the event horizon of a black hole, gravity is strong enough to bend their paths so that we see a bright ring surrounding a roughly circular dark "shadow".

**Relativistic jets**  
When a black hole feeds on stars, gas or dust, the mass produces jets of particles and radiation blasting out from the black hole's poles at near light speed. They can extend for thousands of light-years into space.

**Innermost stable orbit**  
The inner edge of an accretion disc is the last place that material can orbit safely without the risk of falling past the point of no return.

**Accretion disc**  
A disc of superheated gas and dust whirrs around a black hole at immense speeds, producing electromagnetic radiation (X-rays, optical, infrared and radio) that reveal the black hole's location. Some of this material is doomed to cross the event horizon, while other parts may be forced out to create jets.

**Relativistic Jet**


**Accretion disc**

**Event horizon**

**Singularity**

**Photon sphere**

**Innermost stable orbit**



Drishti IAS

Read more: [Black Hole](#)

## Decade-long Economic Assessment by the Finance Ministry

Ahead of the **Interim Budget for 2024-25** the Finance Minister presented a 10-year review of the Indian economy.

- **Growth Projection:** The review predicts that **India's GDP** will grow close to **7% in 2024-25**, with the potential to go "**well above**" **7% by 2030**.

Note:

- The economy is expected to expand from about **\$3.7 trillion** this year to **\$5 trillion** in **three years**, making it the world's **third-largest**, and could even reach **\$7 trillion by 2030**.
- **Two Growth Phases:** The review divides India's growth story into two phases:
  - **1950-2014** and a "**decade of transformative growth**" since **2014**.
  - It highlights, the state of the economy was "**far from encouraging**" due to structural constraints, tardy **decision-making**, and **high inflation**.
  - However, **post-2014 reforms** have restored the economy's ability to grow healthily, making India the fastest-growing **G-20 nation**.
- **Qualitative Superiority:** The review asserts that India's **7% growth** (when the world grows at 2%) is "**qualitatively superior**" to the **8% - 9%** achieved during the previous era when the global economy grew at **4%**.

**Read More:** The Indian Economy: A Review ([Part I](#) and [Part II](#))

## India's First Ammunition-Missile Manufacturing Complex in UP

Recently, Adani Group has inaugurated **South Asia's largest ammunition and missile complex** in Kanpur, Uttar Pradesh spanning 500 acres.

- This facility is poised to become one of the region's most extensive integrated ammunition manufacturing complexes, producing **high-quality small, medium, and large-caliber ammunition** for the armed forces, paramilitary forces, and police.
- The complex has commenced production of **small-caliber ammunition**, with an initial batch of 150 million rounds, which accounts for approximately 25% of India's annual requirement.
- This unveiling coincides with the 5<sup>th</sup> anniversary of the **Balakot airstrike**, also known as '**Operation Bandar**,' a landmark operation by the **Indian Air Force** that showcased India's strategic assertiveness in countering external threats.

**Read more:** [RFID of Ammunition Stock](#)

## PM Unveils Three Space Facilities and Presents Astronaut Wings

Recently, the Prime Minister of India inaugurated three significant **space infrastructure** projects: **SLV Integration Facility (PIF)** at Satish Dhawan Space Centre, Sriharikota, **Semi-cryogenics Integrated Engine and Stage Test (SIEST) facility** at ISRO Propulsion Complex, Mahendragiri and **Trisonic Wind Tunnel** at Vikram Sarabhai Space Center, Thiruvananthapuram.

- They will enhance India's technical capabilities in the space sector and support its vision for space exploration.
  - The PIF will ramp up **PSLV launches** from **6 to 15 annually** and support **SSLV** and other small launch vehicles.
    - The SIEST facility will develop **semi-cryogenic engines**, enhancing payload capacity, with capabilities to test engines up to 200 tons of thrust.
    - The Trisonic Wind Tunnel marks a milestone in **aerodynamic testing** for rockets and aircraft.
  - These facilities are also crucial for the **Gaganyaan Mission**.
- Also, the Prime Minister announced the names of four pilots chosen for Gaganyaan mission and presented '**Astronaut Wings**' to them.
  - The designated pilots for the Gaganyaan mission are **Group Captain P Balakrishnan Nair**, **Group Captain Ajit Krishnan**, **Group Captain Angad Pratap**, and **Wing Commander S Shukla**.

**Read more:** [Gaganyaan Mission](#)

## Veer Savarkar

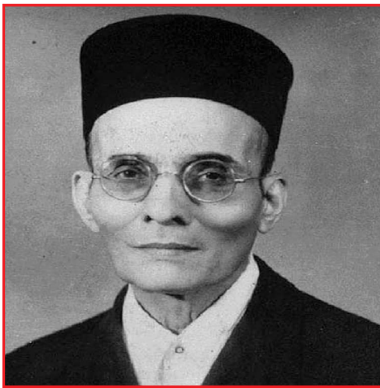
Recently, the Prime Minister paid tribute to freedom fighter Veer Savarkar on his **Punya tithi** (26<sup>th</sup> February).

- **Birth:** Born on 28th May, 1883 in **Bhagur**, a village near Nashik in **Maharashtra**.
- **Related Organisations and Work:**
  - **Founded** a secret society called **Abhinav Bharat Society**.
  - He was the **president** of **Hindu Mahasabha** from 1937 to 1943.

Note:



- The famous book includes '[The History of the War of Indian Independence](#)' and '[Hindutva: who is Hindu?](#)'.
- **Trial and Sentences:**
  - He was arrested in 1909 on charges of plotting an armed revolt against the [Morley-Minto reform \(Indian Councils Act 1909\)](#).
  - Arrested in **1910** for his connections with the revolutionary group **India House**.
    - Following the **two trials**, Savarkar was **convicted** and sentenced to **50 years imprisonment** and transported in 1911 to the **Cellular Jail in the Andaman and Nicobar Islands** (also known as **Kala Pani**).
- **Death:** He died on **26th February 1966** due to **fasting** on his wish of death.



Read more: [Veer Savarkar](#)

## Initiative for Flue-cured Virginia (FCV) Tobacco Farmers

- Flue-cured Virginia (FCV) Tobacco** is predominantly cultivated in India, primarily in **Andhra Pradesh** and **Karnataka**, with the current crop season underway.
- The [Michaung cyclone](#) caused heavy rains in Andhra Pradesh, severely affecting the FCV tobacco crop across several districts.
    - Against this backdrop, the Government of India has approved an **interest-free loan** of Rs 10,000 from the [Grower Welfare Fund](#) of the [Tobacco Board](#) for FCV Tobacco growers in Andhra Pradesh.
  - **Flue-cured Virginia (FCV) Tobacco:**
    - **FCV tobacco** is an important **commercial crop**

grown during kharif as **rainfed crop** predominantly on **red sandy loam soils**.

- The FCV tobacco cultivated in **Karnataka Light Soils** is known as '**Mysore style tobacco**'.
  - **Curing** prepares **harvested tobacco** for market by **standardising the process** to achieve **desired leaf qualities** and remove moisture.
- **India** grows **ten distinct types** of tobacco in 15 states, including **cigarette** (FCV, burley, Oriental) and **non-cigarette types** (Bidi, chewing, hookah and cigar), making it the **world's second-largest producer** and **exporter** of tobacco.

Read more: [Tobacco Cultivation and Food Insecurity](#)

## Cyclone Shelter HAMs Excel in IOTA Expedition

A dedicated team of **amateur radio operators (HAMs)** advocating last-mile connectivity, aimed to integrate HAM education in schools for enhanced disaster response, embarked on a significant journey from **cyclone shelters** in **Nachugunta Island, Andhra Pradesh**, to participate in the **Island on the Air (IOTA) expedition**.

- The expedition's success showcases HAM operators' **technical prowess**, emphasises community engagement and preparedness for **natural disasters**, and demonstrates India's amateur radio capabilities while enhancing emergency communication resilience in vulnerable regions.
- **Amateur Radio (HAM Radio)** is a widely enjoyed hobby that **uses radio frequencies** for **non-commercial purposes**, fostering technical learning, community engagement, and **global connectivity** through radio waves.
- **Islands On The Air (IOTA)**, is a program connecting **global radio amateurs** with **island stations**, managed by IOTA Ltd and **Radio Society of Great Britain (RSGB)**, categorising islands into communication groups since 1964.

Read More: [Amateur Radio \(HAM Radio\)](#)

## Exercise Dharma Guardian 2024

The **5<sup>th</sup> edition** of Joint Military Exercise '**Dharma Guardian**' between the **Indian Army** and the **Japan**

Note:



drishti

**Ground Self Defence Force** started on 25th February and will conclude on 9th March 2024 at Mahajan Field Firing Ranges in Rajasthan.

- Exercise 'Dharma Guardian' is an **annual exercise** conducted alternatively in India and Japan.
- The Exercise aims to foster **military cooperation** and enhance **combined capabilities** to execute joint operations in the semi-urban environment under Chapter VII of the **United Nations Charter**.
- The exercise will emphasise **high physical fitness**, joint planning, **tactical drills**, and basic special arms skills, including establishing a temporary operating base, creating an ISR grid, setting up mobile vehicle checkpoints, conducting cordon and search operations, heliborne operations, and house intervention drills.
  - The exercise will enhance **defence cooperation** and bilateral relations by fostering camaraderie and sharing **best practices** in tactical operations.
- A Weapon and Equipment Display will also be organised showcasing the '**Atmanirbhar Bharat**' initiative and the growing defence industrial capability of the country.
- India and Japan's defence forces also organise a series of bilateral exercises such as:
  - **JIMEX (naval)**, **Malabar exercise (Naval Exercise)**, 'Veer Guardian' and SHINYUU Maitri (Air Force), and **Dharma Guardian (Army)**.

Read more: [Exercise Dharma Guardian](#)

## Sudarshan Setu

Recently, the Prime Minister of India inaugurated the **Sudarshan Setu (also known as the Okha-Beyt Dwarka Signature Bridge)**, India's longest cable-stayed bridge connecting the Okha mainland and the **Beyt Dwarka island in Gujarat**.

- The bridge is technically a sea link, a first for Gujarat, with a total length of 4,772 meters, featuring a 900-meter-long cable-stayed section.
  - It also has **solar panels installed** on the upper portions of the footpath, **generating one megawatt of electricity**.
- The Union government funded the project, underscoring its strategic importance.
  - **Beyt Dwarka, is the second largest island off the Gujarat coast**, after the Union Territory of Diu.
- The bridge, constructed as a part of **National Highway (NH) 51** that runs along the sea coast of **Saurashtra**, was built by the NH division of Gujarat Roads and Buildings Department.
- **Atal Setu** is the longest bridge in India and also the longest sea bridge in the country.



Read more: [Atal Setu Nhava Sheva Sea Link](#)

## Sant Guru Ravidas

The Prime Minister inaugurated the Statue of **Sant Guru Ravidas** and paid tributes on his birth anniversary.

Note:



- Guru Ravidas Jayanti is celebrated on **Purnima Tithi of Magha Month** i.e., 24<sup>th</sup> February 2024.
- Sant Guru Ravidas, born in 1377 CE in Seer Govardhanpur, Uttar Pradesh, is revered as a saint, philosopher, poet, and social reformer.
  - Known by various names like Raidas, Rohidas, and Ruhidas, he hailed from a community traditionally associated with leatherwork.
- Guru Ravidas made significant contributions to the **Bhakti Movement**, emphasising devotion to the divine and promoting spiritual equality.
- Guru Ravidas's teachings emphasised **human rights, equality, and spiritual enlightenment**.
  - Some of his compositions are included in the revered scripture, **Guru Granth Sahib Ji**, adding to his literary and philosophical significance.



Read more: [Guru Ravidas Jayanti](#)

## Inclusion of Additional Activities in National Livestock Mission

Recently, the **Union Cabinet** has approved additional activities for the **National Livestock Mission** (commenced in 2014-15). It includes-

- Entrepreneurship establishment for **horses, donkeys, mules, and camels** with 50% capital subsidy up to 50 lakhs for Individuals, **Farmer Producer Organizations, Self-Help Groups**, Joint Liability Groups, Farmer Cooperative Organizations, and Section 8 companies of **Companies Act 2013**.
- Entrepreneurs will receive **50% capital subsidy up to Rs. 50 lakhs for fodder seed processing infrastructure**, including construction, machinery, and seed storage godown.

- State government assistance will be provided for **fodder cultivation in non-forest land**, waste-land, range land, and degraded forest land to increase fodder availability.
- Simplification of the **Livestock Insurance program**, reducing farmer's premium share to **15%**, with the remaining premium shared by Centre and State.
  - The number of animals to be insured has also been increased to **10 cattle units** instead of 5 cattle units for **cattle, sheep and goats**.

Read more: [India's Livestock Sector](#)

## iMPEL-AI Program to Empower India's AI Innovators

Recently, **Microsoft** and iCreate have signed a **Memorandum of Understanding (MoU)** facilitated by the Ministry of Electronics & IT to advance **AI startups** in India.

- As a part of it, the **iMPEL-AI (iCreate-Microsoft programme for Emerging Leaders in Artificial Intelligence)** programme was launched.
  - The program will screen 1100 AI innovators across India to become **AI Most Valuable Players (MVPs)** and focus on priority themes of Healthcare, Financial Inclusion, Sustainability, Education, Agriculture, and Smart Cities.
  - Microsoft and iCreate will also provide **AI skilling opportunities to 11,000 innovators, startups**, and young Indians from across the country through Microsoft's Learning Management System.
  - On completion, participants will receive **globally recognized certifications from Microsoft**, providing a significant boost to their employability and career progression.
  - Additionally, the program will select and scale 100 startups to build with Azure OpenAI, with the top 25 receiving go-to-market support from **Microsoft's Global Network**.

Read more: [Artificial Intelligence Mission](#)

## Decline of Tropical Glaciers in East Africa

Recent analysis of high-resolution satellite images

Note:

for the years 2021-2022 has revealed a concerning trend of **disappearing ice in Africa**, particularly in the **tropical glaciers of East Africa**.

- Tropical glaciers in East Africa, including those in the **Rwenzori Mountains (Uganda / Democratic Republic of Congo)**, **Mount Kenya (Kenya)**, and **Kilimanjaro (Tanzania)**, all within **3° latitude of the equator** have significantly reduced in size.
- Kilimanjaro has retained only 8.6% of its glacier area since 1900, Mount Kenya 4.2%, and the Rwenzori Range 5.8%.
  - Studies indicate that more than 90% of the modern glacier extent in East Africa has disappeared by the early 2020s.
  - **Mount Kilimanjaro** is the tallest mountain on the African continent and the **highest free-standing mountain in the world** (5,895 meters above sea level).
- The study underscores the critical importance of **tropical glaciers as indicators of climate variability and climate change**, emphasizing the urgent need for further research and conservation efforts in the face of this environmental challenge.
- Tropical glaciers are typically located near the **Equator and within the Intertropical Convergence Zone (ITCZ)**, making them sensitive to climate variations.
  - The ITCZ is where the trade winds of the Northern and Southern Hemispheres converge near the equator.

Read more: [Disappearing African Rare Glaciers, Global Glacier Change in the 21st Century](#)

## Ayush Holistic Wellness Centre

The **Chief Justice of India**, inaugurated the '**Ayush Holistic Wellness Centre (AYUSH HWC)**' at the **Supreme Court (SC) of India**, marking a significant milestone in promoting holistic health within the judiciary.

- The AYUSH HWC is a collaborative effort between the SC and the **All-India Institute of Ayurveda** under the **Ministry of Ayush**.
- The centre is furnished to deliver cutting-edge holistic care, in harmony with **Ayurvedic principles** and methodologies, targeting enhancing physical, mental, and emotional wellness for **comprehensive health promotion**.

- AYUSH HWC is a component of **Ayushman Bharat** in the **National AYUSH Mission (NAM)**.

Read more: [Ayush Wellness Centres under National Ayush Mission](#)

## Government's Sugarcane Price Hike

Recently, the central government announced an 8% increase in the **fair and remunerative price (FRP) of sugarcane**. The revised FRP of **Rs 340 per quintal** is slated to be effective from **1st October, 2024** for the 2024-25 sugar season.

- The Central Government announces FRP that is determined on the recommendation of the **Commission for Agricultural Costs and Prices (CACP)** and announced by the **Cabinet Committee on Economic Affairs (CCEA)**.
  - CCEA is chaired by the Prime Minister of India.
  - FRP is based on the **Rangarajan Committee Report 2012** on reorganising the sugarcane industry.
- Sugarcane is a **tall, perennial grass native to tropical regions**. It is cultivated for its high sugar content, primarily used for sugar production. But it can also be processed into various other products such as ethanol and **biofuels**.
  - **Heavy soils with good drainage** are preferred for sugarcane cultivation, though it grows well on medium & light-textured soils also with assured irrigation.

Read more: [Fair and Remunerative Price](#)

## Initiative on Public Health of Tribal Students

The **Ministry of Ayush**, through the **Central Council for Research in Ayurvedic Sciences (CCRAS)** in collaboration with the **Ministry of Tribal Affairs** and **ICMR-National Institute of Research in Tribal Health (NIRTH)** Jabalpur, has initiated a joint **National Level Project of Health Screening and Management** through Ayurvedic Interventions benefiting over 20,000 Tribal Students.

- The joint initiative seeks to meet the health requirements of children in **Eklavya Model Residential**

Note:

**Schools (EMRS)** in tribal regions, targeting students aged 10-18, in 55 identified EMRS across **14 states**.

- It will focus on major areas like **malnutrition, anemia, sickle cell diseases, hemoglobinopathies, and tuberculosis** through Ayurvedic interventions.
  - Efforts will be made to instil **healthy lifestyle practices** among children based on Ayurvedic principles, aiming to improve their health, well-being, and disease prevention, while also adopting an **integrated approach** to disease management.

- **Ekalavya Model Residential Schools (EMRSs)** provide quality education to **Scheduled Tribes (ST)** children in remote areas. The schools focus on holistic development, including sports, **skill training**, and **healthcare**, to facilitate access to higher education and employment opportunities.

Read more: [Ekalavya Model Residential Schools \(EMRSs\)](#)

## Unexpected Lake Formation in Death Valley

North America's driest region, **Badwater Basin**, nestled within **Death Valley** has experienced a significant increase in precipitation since **August 2023**, leading to the unexpected formation of **Manly Lake**.

- **Manly Lake** was formed after **Hurricane Hilary in August 2023**. While it initially got smaller as expected, it surprisingly stayed throughout the fall and winters.
  - It grew again in **February 2024** because a strong **atmospheric river** brought more water.
    - An **atmospheric river** is a narrow band of concentrated moisture in the atmosphere that carries water vapour from the tropics to higher latitudes.
    - Unlike a **visible water body**, an atmospheric river is an invisible, elongated corridor in the sky that carries large amounts of water vapour, influencing weather patterns and precipitation.
  - This disrupted the basin's usual pattern of rapid evaporation, allowing the unexpected formation and persistence of Manly Lake.



Read more: [Death Valley](#)

## Umbrella Scheme on "Safety of Women"

The **Union Cabinet** approved the proposal of the **Ministry of Home Affairs (MHA)** for the continuation of the implementation of the **Umbrella Scheme on 'Safety of Women'** for the period from **2021-22 to 2025-26**.

- Of the overall project cost, a portion will be financed by the MHA from its budget, while the remaining will be sourced from the **Nirbhaya Fund**.
- The Government of India has proposed to continue the following projects under the Umbrella Scheme for "Safety of Women":
  - **112 Emergency Response Support System (ERSS) 2.0**
  - Upgradation of Central Forensic Sciences laboratories, including setting up of National Forensic Data Centre
  - Strengthening of DNA Analysis, Cyber Forensic capacities in State Forensic Science Laboratories (FSLs)
  - **Cyber Crime** Prevention Against Women and Children
  - Capacity building and training of investigators and prosecutors in handling **sexual assault cases against women and children**
  - **Women Help Desk & Anti-human Trafficking Units**.

Note:

- According to the NCRB data, the rate of crime against women per one-lakh population stood at 66.4, while the chargesheeting in such cases was logged at 75.8.

Read more: [Mission Shakti](#)

## Flood Management and Border Areas Programme

The Union Cabinet, has approved the continuation of the **centrally sponsored Scheme, "Flood Management and Border Areas Programme (FMBAP),"** proposed by the Department of Water Resources, River Development and Ganga Rejuvenation (DoWR, RD & GR), for the period of 2021-22 to 2025-26.

- FMBAP includes two components: **Flood Management Programme (FMP) and River Management and Border Areas (RMBA).**
- FMP component for flood control, anti-erosion, drainage development, and anti-sea erosion works.
  - **Funding pattern:**
    - 90% (Centre): 10% (State) for Special Category States (8 North-Easter States and Hilly States of Himachal Pradesh, Uttarakhand and UT of Jammu & Kashmir).
    - 60% (Centre): 40% (State) for General/Non-Special Category States.
- RMBA component (**100% central assistance**) focuses on **flood control, anti-erosion works, and** safeguards security installations on border rivers, including joint water projects with neighbouring countries.
- The Scheme incentivizes states to implement **flood-plain zoning**, an effective flood management measure.
  - **Flood-plain zoning** designates areas prone to flooding and dictates permissible developments to minimise damage during floods.

Read more: [Flood Management and Border Areas Programme \(FMBAP\)](#)



Read more: [Medaram Jathara Festival](#)

## Sammakka Saralamma Jathara

Recently, the Prime Minister of India extended greetings at the start of the **largest tribal festival, Sammakka Saralamma Jathara or Medaram Jathara**

- Medaram Jathara (primarily celebrated by the **Koya tribe**) is the **largest tribal religious congregation in the world**, held biennially, with approximately 10 million people converging on the place, over four days in the month of **'Magha' (February)** on the full moon day in Medaram.
  - Medaram is a remote place in the **Eturnagaram Wildlife Sanctuary, Telangana.**
- Medaram Jathara commemorates the **bravery of Sammakka and Saralamma**, tribal goddesses who fought against injustice.
  - It is a festival with **no Vedic or Brahmanic influence.**
- **Folklore:**
  - Sammakka, found as a newborn amidst tigers, grew up to become a tribal chief and married Pagididda Raju (Kakatiya feudatory chief), she had two daughters, **Sarakka and Nagulamma, and a son named Jampanna.**
- During the Jathara people offer **bangaram (gold) in the form of jaggery** of a **quantity equal to their weight** to the goddesses and take holy baths in the **Jampanna Vagu** (stream).
- **Jampanna Vagu, a tributary of River Godavari**, named after tribal warrior Jampanna, runs red with his blood from battle against the **Kakatiya Army**. Tribals bathe here to honour his sacrifice and gain courage.

Note:

## Spur-winged Lapwing

Recently, a group of birdwatchers spotted an **African-Mediterranean wader bird, the Spur-winged Lapwing (*Vanellus spinosus*)**, at Ammavaripet Lake in Warangal, Telangana. It is believed to be the first time the bird has been spotted in India.

- **Family:** Spur-winged Lapwing belongs to the family of Charadriidae.
- **Range:** Central, sub-Saharan Africa; eastern Mediterranean.
- **IUCN Red List Category:** Least Concern.
- **Diet:** Carnivore - Primarily insects, insect larvae, and small invertebrates.
- **Active:** Diurnal - Variably diurnal or nocturnal.
  - Spur-winged lapwings are active day and night, depending on the concentration of prey and predators in a given area.



## Statehood Day of Arunachal Pradesh

Recently, the **Prime Minister** of India extended his wishes to the people of **Arunachal Pradesh** on its **38<sup>th</sup> Statehood Day**.

- The modern history of Arunachal Pradesh commences with British control initiated through the **Treaty of Yandaboo (after the First Anglo-Burmese War) in 1826**, evolving into the establishment of the **North East Frontier Agency (NEFA)** by 1838.
  - In 1914, the **Shimla Treaty** established the boundary between **Tibet and NEFA**, recognized by China, Tibet, and British rulers.
  - Before 1962, Arunachal Pradesh was under **Assam's constitutional jurisdiction**, later transitioning into a **Union Territory** under separate administration due to its strategic significance.
- Arunachal Pradesh attained full statehood on **20th February 1987** becoming the **24th state** of the Indian Union through the **55th constitutional amendment** in alignment with the national policy of granting tribal regions distinct state identities.



Read more: [Arunachal Pradesh](#)

Note:

## Statehood Day of Mizoram

Recently, the **Prime Minister** of India extended his wishes to the people of **Mizoram** on its **38<sup>th</sup> Statehood Day (20th February)**.

- The **Mizo Hills** area became the **Lushai Hills** district within **Assam** at the time of independence. Further, in 1954 it was renamed the Mizo Hills District of Assam.
- Mizoram was granted the status of a **Union Territory** in 1972 after signing an accord with the moderates of the Mizo National Front (MNF).
- The Union Territory of Mizoram was conferred the status of a **full state in 1986** after the signing of the **Mizoram Peace Accord** between the Central government and the MNF.
  - The formalization of **Mizoram State** took place on **20th February 1987** after the **53rd Amendment** of the Indian Constitution, 1986.
  - Mizoram has been designated as a “tribal area” under the **Sixth Schedule** of the Constitution (**Article 244(2)**).



Read more: [Mizoram](#)

## REC Limited's Commitment to Armed Forces Welfare

REC Limited (formerly Rural Electrification Corporation Limited), a **Maharatna Central Public Sector**

**Enterprise** under the Ministry of Power, has demonstrated its unwavering commitment to the **welfare of armed forces personnel** through a substantial contribution to the **Armed Forces Flag Day Fund (AFFDF)**.

- AFFDF has been established to assist **Armed Forces veterans, widows and their dependents** as well as the institutions and organizations created for the rehabilitation of paraplegic soldiers.
  - AFFD India, observed annually on **December 7<sup>th</sup> since 1949**, honours India's soldiers and veterans.
- REC, registered with the **Reserve Bank of India (RBI)** as a **Non-Banking Finance Company (NBFC)** and **Infrastructure Financing Company (IFC)**, finances various sectors including power infrastructure, renewable energy, and emerging technologies.
- REC Ltd. Serves as a key player in government flagship schemes such as **Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGAYA)**, **Deen Dayal Upadhaya Gram Jyoti Yojana (DDUGJY)**, **National Electricity Fund (NEF) Scheme** which resulted in strengthening of last-mile distribution system, **100% village electrification and household electrification in the country**.

Read more: [Maharatna Status to REC, Armed Forces](#)

[Flag Day](#)

## Empowering Youth Through Skill India Centre

Recently, the Union Minister of Education and Skill Development & Entrepreneurship inaugurated the **first Skill India Centre (SIC) of the country** in Sambalpur, Odisha, marking a significant step towards enhancing the **skill set of India's youth**.

- The SIC in Sambalpur, Odisha, **aims to upgrade the skills of the youth, particularly focusing on new-age job roles**.
- The SIC offers courses in high-demand trades such as Media & Entertainment, Leather, Tourism & Hospitality, and IT-ITeS.
- The initiative complements the **Kaushal Rath initiative** launched earlier to provide skill training and certification across various districts of Odisha.
- The **National Skill Development Corporation (NSDC)** will oversee the implementation of training programs to ensure adherence to quality standards and the overall functioning of the centre.

Note:



- NSDC is a unique **Public Private Partnership (PPP)** enterprise working under the **Ministry of Skill Development & Entrepreneurship (MSDE)**.
- It was established to catalyse the skilling ecosystem, NSDC partners with the private sector to implement the **Skill India Mission**, focusing on efficient vocational training initiatives. It supports enterprises, startups, and organisations by providing funding, concessional loans, and innovative financial products to enhance skilling initiatives.

Read more: [Skill Development in India, National Skill Development Corporation](#)

## Shri Kalki Dham Temple Foundation Ceremony

Recently, the Indian Prime Minister laid the foundation stone of the **Shri Kalki Dham Temple in Sambhal district, Uttar Pradesh**.

- It is dedicated to the Kalki Avatar (incarnation) that is yet to appear in the world. According to Hindu Mythology, it will be the **Tenth and final incarnation of Lord Vishnu**.
- The temple is considered the world's most special due to being the first temple where God's temple was established before the incarnation.
  - Ten **sanctums** within the temple symbolise the **ten incarnations of Lord Vishnu**.

Read more: [Temple Architecture](#)

## Chhatrapati Shivaji Maharaj Jayanti

**Chhatrapati Shivaji Maharaj Jayanti**, is celebrated on **19<sup>th</sup> February** every year.

- **Chhatrapati Shivaji**, the founder of the **Maratha Empire**, was born on 19th February 1630 at the **Shivneri Fort** in the Junnar district of present day Maharashtra.
  - He was born to **Shahaji Bhosale and Jijabai**.
- He introduced the collection of two taxes called the **Chauth and Sardeshmukhi**. He also divided his kingdom into four provinces, each headed by a **Mamlatdar**.
- He abolished the **Jagirdari System** and replaced it with the **Ryotwari System**.

- He took on the titles of **Chhatrapati, Shakakarta, Kshatriya Kulavantas and Haindava Dharmodhhaarak**.  
Read more: [Chhatrapati Shivaji Maharaj](#)

## Odysseus Spacecraft

Intuitive Mission's **Odysseus spacecraft**, a private Nova-C lunar lander, is on its way to the **Moon** after launching on a **SpaceX Falcon 9 rocket** from the **National Aeronautics and Space Administration (NASA)** Kennedy Space Center in Florida.

- Odysseus is the second private attempt after the **Peregrine lander's failure**.
- The Falcon 9 is a **two-stage rocket designed** and manufactured by SpaceX to transport people and payloads into Earth's orbit.
- The spacecraft carries six payloads for NASA under the CLPS initiative, testing new technologies and scientific instruments.
  - Key technologies being tested include a LIDAR-based sensor and an electrostatic dust-removal system for spacesuits.
- The spacecraft is set to land on the Moon on **22<sup>nd</sup> February 2024**.
- The mission aims to become the first American spacecraft to land on the Moon in over 50 years. The last time an American spacecraft landed on the Moon was in **1972, with Apollo 17**.
- The mission is part of NASA's **Commercial Lunar Payload Services (CLPS)** initiative and **Artemis campaign**.

Read more: [Challenges in Lunar Landing Missions, Space Missions in 2024](#)

## Doctor on Wheels

Recently, the Union Minister of Science & Technology stated that "**Aarogya-Doctor on Wheels**" has provided medical assistance to around **13,000 patients** in remote areas of the **Udhampur-Kathua-Doda Lok Sabha constituency**.

- The Doctor on Wheels initiative utilises **AI technology and remote consultations** from specialist doctors, delivering prompt and comprehensive medical care within 45 minutes.
- With a focus on inclusivity and cost-effectiveness, it addresses **healthcare disparities**, bridging the **urban-rural divide**.

Note:

Read more: [Shorter Medical Course to Address Rural Doctor Shortage, National Telemedicine Service of India: eSanjeevani](#)

## IEPFA Partners with DBS for Financial Awareness

In a significant move towards **enhancing investor awareness and protection**, a memorandum of understanding (MoU) was signed between the **Investor Education and Protection Fund Authority (IEPFA)** and the **Development Bank of Singapore Ltd (DBS)** in New Delhi.

- The IEPFA was set up on 7<sup>th</sup> September 2016, under the aegis of the Ministry of Corporate Affairs, Government of India, for administering the **Investor Education Protection Fund (IEPF)** for making refunds of shares, unclaimed dividends, and matured deposits/debentures, among other things, to investors.
  - IEPF promotes awareness and protects the interests of investors.
  - The IEPFA has conducted several Investor Awareness Programmes aimed at **increasing financial literacy and empowering investors** to protect themselves from financial fraud.
- DBS is a leading financial services group in Asia with a presence in 19 markets. DBS Bank India Limited is the **first major foreign bank to function as a wholly-owned, locally incorporated subsidiary** in India.
  - It offers banking services for enterprises and individuals across all scales.

Read more: [Investor Education and Protection Fund \(IEPF\)](#)

## National Conference on Jal Jeevan Mission and Swachh Bharat Mission- Grameen

The Department of Drinking Water and Sanitation recently organised a **National Conference on Jal Jeevan Mission and Swachh Bharat Mission -Grameen (G)** in Lucknow, Uttar Pradesh.

- It aimed to reach at **'A Unified Approach Towards Sustainable Solutions in Rural WASH Sector'**.

- State presentations offered insights into initiatives and progress from different regions, promoting discussions on replicability and sustainability.
  - Notable state experiences included Kerala's **Plastic Waste Management (PWM)** initiative, Tamil Nadu's use of plastics in road construction and Bihar's Toilet Clinic.
- **Water, Sanitation, and Hygiene (WASH)** interventions are designed to provide life-saving, long-term and sustainable access to safe water and sanitation, whilst promoting good hygiene practices that reduce the risk of water-related disease transmission.

Read more: [Global Burden of Unsafe Drinking Water, Sanitation, and Hygiene](#)

## SUFALAM 2024

**SUFALAM (Start Up Forum for Aspiring Leaders and Mentors) 2024** catalysed transformative discussions, shaping the trajectory of the **food processing industry** towards innovation-driven growth and fostering collaborations among **startups**, industry, and academia. It was inaugurated by the **Union Ministry of Food Processing Industries**.

- The event included knowledge sessions on **startup overview, food regulations, and business and financial modelling** for startups.
- The panel discussion on transforming food systems focused on **diversification of raw materials, climate-resilient options, and creativity in entrepreneurship** to meet **food safety standards** and optimise supply chains.
- Startups were encouraged to play a proactive role in sourcing **quality raw materials, collaborating with farmers, and venturing into protein-rich foods and sustainable packaging**.
- Two pitching sessions provided opportunities for startups to present their ideas to a panel of experts and receive mentoring support.

Read More: [Food Processing Sector in India](#)

## Operations of Railway Protection Force

The **Railway Protection Force (RPF)** is unwavering in its commitment to safeguarding **railway property, passenger areas, and the well-being of travellers**.

Note:

- RPF made certain commendable achievements under several operations run by it for the **safety, security and comfort of passengers**, like:
  - **Operation “Nanhe Faristey”**: Reuniting lost children with their families.
  - **Operation “Jeevan Raksha”**: Saving the lives of passengers from accidents on platforms and railway tracks.
  - **Meri Saheli Initiative**: Providing security assurance to lady passengers, with legal action taken against violators.
  - **Crackdown on Touts (Operation “Uplabdh”)**: Arresting individuals and seizing future reserved railway tickets worth Rs. 44.46 lakhs.
  - **Operation “NARCOS”**: Arresting individuals and seizing narcotics.
  - **Operation “Yatri Suraksha”**: Arresting criminals involved in offences against railway passengers.
  - **Operation Seva**: Providing assistance to elderly, sick, or injured passengers during rail travels.

Read More: [Operation Mahila Suraksha](#)

## India Extends Aid to Zambia Amid Cholera Outbreak

India has stepped in to provide **medical and material assistance to Zambia**, grappling with a **cholera outbreak**.

- India dispatched water purification supplies, chlorine tablets, and oral rehydration solution (ORS) sachets to Zambia.
- Cholera is an **acute diarrhoeal infection** caused by ingestion of food or water contaminated with the **bacterium *Vibrio cholerae***.
  - It remains a global threat to public health and an indicator of inequity and lack of social development.
  - Researchers have estimated that each year there are 1.3 to 4.0 million cases of cholera and 21,000 to 143,000 deaths worldwide due to cholera.
- Most of those infected **have no or mild symptoms** and can be successfully treated with ORS.
  - Currently there are three **World Health Organization (WHO)** pre-qualified oral cholera vaccines (OCV): Dukoral, Shanchol, and Euvichol. All three vaccines require two doses for full protection.



Read more: [Cholera, India's Vaccine Diplomacy](#)

Note:

## Badminton Asia Team Championships 2024

The Indian women's badminton team, led by PV Sindhu and Anmol Kharb, won a historic **gold medal at the Badminton Asia Team Championships 2024**, which was held in Shah Alam, Malaysia from February 13 to 18.

- This was **India's first-ever gold medal at the Badminton Asia Team Championships**. The Indian men's team had previously won two bronze - in 2016 and 2020.
- The tournament was organized by **Badminton Asia** along with the **Badminton Association of Malaysia** as the host organiser.
  - Badminton Asia is the governing body of the badminton sport in Asia under the flagship of the **Badminton World Federation (BWF)**.
    - It focuses on promoting, managing and developing the sport in Asia with principles of specificity and universality.
- The 2024 **Badminton Asia Team Championships** offered valuable Race to Paris 2024 ranking points. The points are **crucial for shuttlers** who want to compete in the **2024 Paris Olympics**.
- The 2024 Badminton Asia Team Championships also served as a qualifying tournament for the **2024 Thomas & Uber Cup Finals**, which will take place in Chengdu, China.

Read more: [Thomas Cup](#)

## Indian National Young Academy of Science

The **Indian National Young Academy of Science (INyas)** recently held its ninth Annual General Body Meeting.

- Since its establishment in 2014, INyas has been the **sole recognized academy** for **young scientists** in India.
- INyas is very active specifically in pursuing the promotion of science amongst the various strata of society through science camps, remote area lectures, conferences, and other forms of outreach.
- **INyas** has recently formed seven local chapters which will initiate new activities and exponentially increase the impact on the ground.
- It has also been a Member of the **International Science Council since 2023**.

## Purulia Chhau

Purulia Chhau, a folk dance, was recently performed in Kozhikode, Kerala.

- The **Chhau** is a semi-classical dance form from Eastern India which has tribal and folk origins. The performances range from **acrobatic to martial** and also include dances which are structured around religious themes.
- The name Purulia Chau comes from the district of **Purulia in Bengal** which is a Chhau stronghold. It represents one of the **three distinct styles of Chhau dance**, the other two being **Seraikella Chhau from Jharkhand** and **Mayurbhanj Chhau from Odisha**.
  - The costumes vary between the styles, with **Purulia and Serakeilla using masks** to identify the characters.
- It was inscribed in the **Representative List of the Intangible Cultural Heritage of Humanity** of **UNESCO** in 2010.

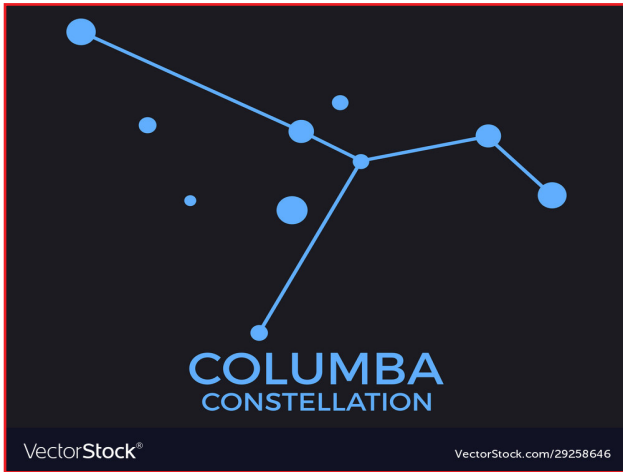


Read more: [Classical Dances of India](#)

## Mysterious Binary System Discovered in NGC 1851

- Researchers have found a mysterious pair of orbiting objects in the globular cluster NGC 1851, located in the Columba constellation.
- Using the **MeerKAT Radio Telescope** in South Africa, they **detected weak pulses emitted by the system**. One object, identified as a **Neutron Star pulsar**, emits regular radio pulses, while the other, possibly a **black hole** or another neutron star, is invisible in various spectra. The discovery raises the possibility of a **pulsar-black hole system**, offering insights into extreme conditions in the universe.

Note:



Read More: [Pulsar Glitches, Square Kilometre Array Telescope](#)

## MoD Achieves Rs 1 Lakh Crore Milestone on GeM Portal

The Ministry of Defence (MoD) has achieved a remarkable feat by surpassing the Rs 1 Lakh Crore mark in total order value transacted through the **Government e-Marketplace (GeM) portal**, signalling a significant milestone in government procurement practices.

- The GeM is a national **public procurement portal for Indian government**. The portal was launched in 2016 by the **Ministry of Commerce and Industry** to create an **open and transparent platform for government buyers**.
- GeM facilitates procurement ranging from **general store items to critical defence acquisitions**, including missile systems, and more.
- GeM leverages **demand aggregation modules** to maximise cost-effectiveness and efficiency in government transactions, showcasing commitment to transformative change.
- MoD becomes the first central government entity to achieve this milestone, showcasing its commitment to optimising public spending.
  - 50.7% of total orders awarded to **Micro and Small Enterprises (MSEs)**, aligning with GeM's core value of social inclusion.
- Defence PSUs actively engage on the GeM platform, facilitating both procurement and sales, marking a paradigm shift in the procurement landscape.

Read more: [Government e-Marketplace](#)

## ICGS Varaha Enhances Maritime Diplomacy in East Africa

Recently, the **Indian Coast Guard (ICG) Offshore Patrol Vessel (OPV) ICGS Varaha** conducted a significant port call at **Maputo Port, Mozambique**, as part of its strategic overseas deployment to East Africa.

- The visit aims to showcase **India's shipbuilding capabilities** and promote **"Aatmnirbhar Bharat."**
- The deployment strengthens ties between the **ICG and Mozambique's maritime agencies**.
- The visit aligns with the ICG's commitment to fostering **bilateral relationships with Foreign Friendly Countries (FFCs)** through maritime cooperation, aligning with India's maritime vision encapsulated in **"SAGAR – Security and Growth for All in the Region"** and the concept of **"Global South."**
- ICGS Varaha had previously visited Mombasa, Kenya, demonstrating continued diplomatic engagements in Africa.
  - The ICGS Varaha, the fourth in the series of seven 98-m OPV of the ICG.

Read more: [Indian Coast Guard\(ICG\), Indian Ocean Islands Diplomacy](#)

## RBI Regulates Card-Based Commercial Payments

Recently, the **Reserve Bank of India (RBI)** has directed Visa and Mastercard to stop card-based **business-to-business payments** routed through fintech firms.

- This only affects **business payments processed through specific third-party services** and does not impact other card transactions.
- A set of fintech firms in India currently operate in a category called **Business Payment Service Providers (BPSPs)** that enable businesses to use credit cards for payments to suppliers who do not accept cards directly.
  - The BPSP then transfers the funds to these suppliers using standard bank channels like **NEFT and RTGS**, acting as a third party. This is the focal point of regulatory scrutiny.

Note:

- This move aligns with the RBI's broader objective of ensuring regulatory compliance within the **fintech sector** and preventing fraudulent or unauthorised transactions in digital platforms.

Read more: [Payment and Settlement Systems in India](#)

## Sangam: Revolutionising Infrastructure through Digital Twins

The **Department of Telecommunications (DoT)** has introduced the '**Sangam: Digital Twin**' initiative, a venture inviting Expressions of Interest (EoI) from industry pioneers, startups, **MSMEs**, academia, innovators and forward-thinkers.

- It is a **proof-of-concept (PoC)** distributed in two stages to be conducted in one of the major cities of India.
  - The **first stage focuses on exploratory activities** and creative exploration, while the **second stage involves practical demonstrations** of specific use cases.
  - **POC** is a demonstration of a product, service, or solution that shows it can meet customer needs and provides a business case for adoption.
- **Digital Twin technology** involves creating a virtual replica or simulation of a physical object or system.
  - This digital counterpart mirrors the physical entity in real-time or near-real-time, allowing for monitoring, analysis, and simulation.
- Through Sangam, India aims to establish leadership in **digital infrastructure** and innovation.

Read more: [India's Digital Public Infrastructure](#)

## United Kingdom Economy in Technical Recession

The United Kingdom economy entered a **technical recession** at the end of 2023. The Office for National Statistics reported that the UK's **gross domestic product**

**(GDP) shrank by 0.3%** in the final three months of 2023, and by 0.1% in the third quarter.

- The **National Bureau of Economic Research** (an American NGO) defines recession as "a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in **production, employment, real income, and other indicators**."
  - Very short periods of decline are not considered recessions.
- A **recession** occurs when a **sustained decline in economic activity** persists, while a **technical recession** specifically entails **two consecutive quarters of GDP decline**.

Read more: [Recession and Yield Curve](#)

## Security Printing and Minting Corporation of India Limited

The Union Minister for Finance and Corporate Affairs presided over the 19<sup>th</sup> Foundation Day celebrations of the Security Printing and Minting Corporation of India Limited (SPMCIL) in New Delhi.

- SPMCIL is a **Miniratna Category-I, Central Public Sector Enterprise (CPSE)**, under the administrative control of the Department of Economic Affairs, Ministry of Finance.
- SPMCIL is responsible for printing various denominations of currency notes and coins for the **Reserve Bank of India (RBI)**, ensuring the highest standards of security to prevent counterfeiting.
- SPMCIL's initiatives were highlighted including the production of **visually impaired-friendly coin series** and **e-Passports with a Track and Trace system** for enhanced security.
  - The souvenir products of SPMCIL are presented by the Government of India to dignitaries of other countries at international forums and are appreciated globally.

Read more: [India's e-passports: Passport Seva Programme \(PSP\)](#)



Note:



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