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Current Affairs (Consolidation)

DECEMBER 2024 (Part – II)

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Note:

Polity and Governance

Highlights

- *Office of Governor and Related Concerns*
- *Data of Lok Sabha Elections 2024*
- *Mediation Council of India*
- *PM Shram Yogi Maandhan Yojana*
- *Good Governance Day 2024*
- *Centre Scrapped "No Detention Policy"*
- *NHRC and Associated Challenges*
- *National Programme for Prevention and Control of NCD*
- *SAFE Accommodation: Worker Housing for Manufacturing Growth Report*
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- *One Nation One Election 'The Constitution 129th Amendment Bill 2024'*
- *Reimposition of Protected Area Regime*
- *Jharkhand HC Stays on Private Sector Job Quota Law*
- *Restructuring of NTA*
- *Removal of Vice-President*
- *Applying POSH Act in Political Parties*
- *Enhancing Parliamentary Productivity*

Office of Governor and Related Concerns

Why in News?

Recently, the **President** appointed former Union Home Secretary **Ajay Bhalla as Manipur's Governor, General V.K. Singh (Retd.) as Mizoram's Governor,** and reassigned Kerala Governor **Arif Mohammed Khan to Bihar.**

What are the Provisions Related to the Office of the Governor?

- **Constitutional Provision: Article 153** of the Constitution of India mandates a Governor for each State, with the provision allowing tshe **same person to serve as Governor for multiple States**.
  - He is the **constitutional head of the state**, bound by the advice of his **council of ministers.**
  - **Article 154** of the Constitution of India grants the executive power of the State to the Governor.
    - The executive authority of the State is **vested in the Governor** and may be **exercised by him either directly or through officers subordinate to him**, as per the provisions of this Constitution.
- **Appointment of Governor: Article 155** states that the **President appoints the Governor of a State**.
  - Although appointed and reappointed by the President, the **Governor is not considered an employee of the Government of India**.
  - A Governor **must not hold any office of profit** during their tenure.
- **Qualification for the Office of Governor:** The Person must be an Indian citizen, at least 35 years old, and **not a member of Parliament or any State Legislature**.
- **Oath:**
  - Under **Article 159**, the **Governor** must take an **oath before the High Court's Chief Justice** or, in their absence, the senior-most available judge before assuming office.
- **Legislature Power:**
  - Under **Article 174**, the Governor may **recommend dissolving the Legislative Assembly** if no party can form a government or upon the **Chief Minister's advice**, but this power is **subject to specific conditions** and is **not entirely discretionary**.
  - Under **Article 175(2)**, the Governor can call for a **floor test to verify government** majority and **send messages to the legislature** for consideration of bills or other matters.

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Note:

- Under **Article 176**, the Governor **addresses** the legislature at the **first session** after **general elections** and **annually**, explaining the reasons for summoning the assembly or both Houses.
- The Governor, like the President, can **delay assent to money bills** and make recommendations, but the **legislature is not obligated** to accept them.

➢ **Constitutional Discretionary Powers:**

- **Appointment of chief minister when no party has a clear-cut majority** in the state legislative assembly or when the chief minister in office dies suddenly and there is no obvious successor.
- **Dismissal of the council of ministers** when it cannot prove the confidence of the state legislature.
- **Dissolution** of the state legislative assembly if the council of ministers has **lost its majority.**

➢ **Term of Governor:**

- **Article 156** stipulates that the Governor holds office at the President's pleasure, with a typical **term of five years** from the date of assuming office.
- The Governor can be **dismissed by the President on the advice of** a council of ministers headed by the **Prime Minister**.
- A Governor remains in **office until their successor assumes charge**, even after their **term expires**.

Governor
(Part - III)

President - **Article 52 -78 in (Part V);** Governor - **Article 153 -167 (Part VI)**

Governor and President - Similarities

Point of Similarity	Characteristics
Head	• Both are **nominal executive heads** (constitutional/ titular heads) at their level
Promulgating Ordinances	• Both are empowered (under **Article 123/213 - President/Governor**)
Civil and Criminal Proceedings	• Both are **immune from any criminal proceedings during tenure**; cannot be arrested or imprisoned • **Civil proceedings can be instituted** after giving a 2-months' notice
Re-appointment/Re-election	• Both are **eligible for reappointment/re-election** to the same office
Appointing Officers	• What President appoints at National level, Governor appoints at state level (members of Public Service Commission, Judges of courts, Election Commissioners etc.)
Role in Legislature	• Power to **summon or prorogue the State/Union Legislature** and **dissolve the State LA/Lok Sabha**
Financial Powers	• Constituting **Finance Commission** at State/Union level
Situational Discretionary Power	• **Appointing PM/CM** (in case of PM/CM's death or when no party has clear majority) • **Dismissal of Council of Ministers** • **Dissolution of Lok Sabha/ State LA**

Governor v/s President - Differences

Point of Difference	President	Governor
Election	Indirectly elected	**Appointed** by President
Pleasure Doctrine	No concept of Pleasure doctrine	Serves at the **Pleasure of the President**
Declaring Scheduled Area	Can declare any area as scheduled area	Role is **limited to consultation**
Amending Constitution	His assent to the bill is required	**No role** in a Constitutional Amendment Bill
Pardoning Power	Can pardon a death sentence/punishment by a court-martial	**Can't pardon** a death sentence, no role in affairs of military
Constitutional Discretionary Power	No Constitutional Discretion	Constitutional Discretion in **reserving a bill**, imposition of **President's rule** & **administrating an adjoining UT**
Condition of Impeachment	Violation of the Constitution	**No grounds laid**

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Note:

What are the Challenges Related to the Office of Governor?

- **Political Neutrality and Impartiality:** Governors, **appointed by the President on the advice of the central government**, often face **criticism for political ties** to the ruling party, raising concerns about **impartiality** and acting as agents of the central government.
- **Misuse of Article 356:** The Governor's power under **Article 356 to recommend President's Rule** is often subjected to debate regarding constitutional ethos and federalism.
- **Delayed Assent to Bills:** Governors **sometimes delay or withhold assent to state bills**, stalling legislation. This raises concerns about their accountability and adherence to democratic principles, creating uncertainty in governance.
  - In 2023, **Tamil Nadu Governor R.N. Ravi** faced criticism for allegedly using a "pocket veto" by delaying assent to state bills.
- **Interference in State Administration:** Governors' interference in state administration, such as **involving themselves in active politics**, often creates conflicts with elected officials and democratic functioning.

Data of Lok Sabha Elections 2024

Why in News?

Recently, the **Election Commission** of India has released comprehensive data for the **2024 Lok Sabha elections** to enhance **transparency and accessibility** for all stakeholders.

What are the Key Highlights of the Data?

- **Electors:** There were **97,97,51,847 registered electors**, marking a **7.43% increase** from 91,19,50,734 in 2019.
  - A total of **64.64 crore votes were cast**, compared to 61.4 crore in 2019.
    - **Dhubri (Assam)** recorded the **highest turnout at 92.3%**, while **Srinagar (J&K)** had the lowest at **38.7%**, (up from 14.4% in 2019).
  - **NOTA** received **63,71,839 votes (0.99%)** in 2024, and transgender voter turnout stood at 27.09%.
- **Polling Stations:** In the 2024 Lok Sabha elections, there were **10,52,664 polling stations**, an increase from 10,37,848 in 2019.
  - **Bihar** saw the **highest increase** in polling stations, adding **4,739,** followed by West Bengal (1,731).
  - **Repoll** held only in **40 Polling Stations (0.0038%** of Total Polling Stations) compared to **540 in 2019**.
- **Nominations:** In the 2024 Lok Sabha elections, **12,459 nominations** were filed, up from 11,692 in 2019.
  - **Malkajgiri (Telangana)** had the highest with **114 nominations**, while **Dibrugarh (Assam)** had the lowest with **3 nominations (excluding Surat).**
- **Women Empowerment:** In the 2024 Lok Sabha elections, there were **47,63,11,240 female electors (48.62% of total electors),** up from 43,85,37,911 (48.09%) in 2019.
  - **Highest** percentage share of Female electors in 2024: **Puducherry (53.03%) followed by Kerala (51.56%).**
    - **Dhubri (Assam)** recorded the highest female voter turnout at **92.17%,** followed by **Tamluk (West Bengal) with 87.57%**.
  - The number of **female electors per 1,000** male electors increased to **946 in 2024,** up from 926 in 2019.
    - State with the highest number of Female Contesting candidates: Maharashtra (111) followed by UP (80) and Tamil Nadu (77).
- **Inclusive Elections:** In the 2024 Lok Sabha elections, **third-gender electors** rose by **23.5%** to 48,272 (39,075 in 2019), with **Tamil Nadu** having the highest at **8,467.**
  - **Voter turnout** among transgender voters nearly doubled to **27.09%** from 14.64% in 2019.
  - The number of registered **persons with disabilities (PwD)** electors rose to **90,28,696,** compared to 61,67,482 in 2019.
  - **1,19,374 overseas electors** were registered in 2024 (99,844 overseas electors in 2019).
- **Results:** In the 2024 Lok Sabha elections, **six national parties participated**, securing a combined vote share of **63.35%** of the total valid votes.

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Note:

- The **Surat (Gujarat)** constituency was **uncontested.**
- Of the **3,921 independent candidates**, only 7 were elected.
- Independent candidates received **2.79% of the total valid votes,** with 279 independent female candidates.

Note: The winning candidate won the **Surat Lok Sabha seat unopposed** after the nomination of one candidate was **rejected**, and eight other candidates **withdrew their nominations**.

Election Commission of India (ECI)

About

- **Autonomous Constitutional Authority** - Administers Union/state election
  - LS, RS, State LA, the offices of the President and VP
- Estd - **25th Jan1950** (National Voters' Day)

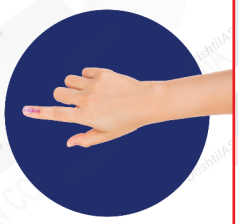


Constitutional Provisions

Part XV - Article 324 to 329

Structure

- 1 Chief Election Commissioner and 2 Election Commissioners **appointed by President**
- **Tenure- 6 years, or up to the age of 65 years,** whichever is earlier
- Retiring ECs – **eligible for further appointment by the govt.**
- **Removal of CEC-** Resolution on the **ground of proven misbehaviour or incapacity,** with majority of 2/3rd members present and voting, supported by more than 50% of the total strength of the house



Major Roles and Responsibilities



- Determining Electoral Constituencies
- Preparing/Revising electoral rolls
- Notifying the schedules and dates of elections
- **Registering political parties and granting them the status of national or state parties**
- Issuing the Model Code of Conduct (MCC) for political parties
- Advising the President on **matters concerning the disqualification of MPs**

Challenges

- Truncated Tenure of CEC
- Executive Influence in Appointments
- Dependence on Centre for Finance
- Lack of Independent Staff

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Mediation Council of India

Why in News?

The push for establishing a **Mediation Council of India (MCI)** has intensified amid growing calls for faster, cheaper dispute resolution.

Note: Mediation is a process where a neutral mediator facilitates communication between parties to help them reach a mutual agreement, without making decisions for them.

- **Types of Mediation: Settlement Conference** (attorney-led, focuses on reaching a settlement), **Facilitative Mediation** (focuses on improving relationships and mutual understanding), and **Transformative Mediation** (empowers parties to resolve the conflict themselves, with settlement as a secondary goal).

Why is the Mediation Council of India Needed?

- **2023 Mediation Act:** The Mediation Act, 2023 mandates the creation of the **Mediation Council of India (MCI)**.
  - Although the government aimed to set up the **MCI by the end of 2023,** its formation has been delayed.
- **Role of Proposed MCI:** The MCI will be responsible for **setting the rules and procedures** for mediation in India.
  - It will grant **authority to mediators and ensure that mediation practices** adhere to established standards.
  - The Council will oversee the **education, assessment, and certification of mediators**, making the process more transparent and regulated.
- **Need:** A **functional mediation council** is essential for reducing legal bottlenecks and fostering a business-friendly environment by resolving commercial disputes more **quickly and cost-effectively** than arbitration.

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Note:

- Mediation provides a **flexible, less adversarial alternative to litigation,** aiding in mutually agreeable settlements. An efficient MCI can reduce judicial burdens.
- While mediation is **often court-mandated,** the MCI's establishment is expected to lead more businesses to choose **mediation voluntarily,** enhancing its role in resolving commercial disputes.
  - For instance, under the **Commercial Court Act, 2015,** parties are mandated to try mediation before entering courts.
- **Online dispute resolution (ODR) services,** including **e-mediation,** are set to grow rapidly.
- A well-regulated mediation framework will **boost confidence in India's commercial dispute resolution,** enhancing its **global business standing,** attracting investors, and facilitating smoother transactions.

How is Commercial Dispute Resolution Currently Handled in India?

- **Commercial Courts:** Established under the **Commercial Courts Act, 2015,** these courts expedite the resolution of disputes involving monetary thresholds above Rs 3 Lakhs.
  - They are staffed with judges experienced in commercial law and aim to reduce litigation delays and enhance business efficiency.
  - Commercial courts also encourage **arbitration, before formal litigation.**
- **Arbitration:** Governed by the **Arbitration and Conciliation Act, 1996,** (amended in 2015, 2019, and 2021) enhances neutrality, reduces judicial intervention, and ensures timely resolutions.
  - Arbitration, with a neutral arbitrator chosen by both parties, offers binding decisions. It can be ad hoc or institutional, such as through the **Indian Council of Arbitration.**
  - The **India International Arbitration Centre Act, 2019** established the India **International Arbitration Centre** for domestic and international arbitration.
- **Conciliation:** It is an out-of-court dispute resolution method where a neutral conciliator helps parties resolve their commercial disputes.
  - Conciliation, governed by the **Arbitration and Conciliation Act, 1996,** helps preserve relationships by facilitating discussions and proposing solutions, without imposing decisions like Arbitration.
- **Negotiation:** Negotiation is a voluntary, non-binding **Alternate Dispute Resolution (ADR) process** where parties directly engage to settle differences without third-party intervention, commonly used in commercial disputes.

PM Shram Yogi Maandhan Yojana

Why in News?

A **Parliamentary Standing Committee (PSC)** report has raised concerns over the underperformance of the **Pradhan Mantri Shram Yogi Maandhan Yojana (PM-SMY),** a pension scheme for workers in the **unorganised sector.**

What is the Pradhan Mantri Shram Yogi Maandhan Yojana?

- **About:** It is a **Central Sector Pension Scheme** launched in 2019, administered by the **Ministry of Labour and Employment,** and **Life Insurance Corporation of India (LIC)** acts as the Pension Fund Manager.
- **Target Beneficiaries**: The scheme targets **unorganised workers** aged 18 to 40, such as street vendors, domestic workers, construction labourers, and agricultural workers, with a monthly **income up to Rs 15,000.**
- **Contribution**: Workers are required to make monthly contributions (premium) ranging from **Rs 55 to Rs 200,** depending on their entry age, with the government matching their contribution.
- **Pension Benefits**: The scheme promises a pension of **Rs 3,000 per month** after the **worker turns 60.** However, if the worker dies before 60, there is **no lump sum payment to their family.**
  - In case of the subscriber's demise, their spouse will receive 50% of the pension amount as family pension.

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Note:

What are the Highlights of the PSC Report on PM-SMY?

- **Poor Performance of PM-SMY:** The PM-SYM scheme has seen dismal performance due to low enrolment and reduced government funding.
  - Government contributions halved over two years, with actual expenditure dropping to **Rs 162.51 crore in FY 2023-24 from Rs 324.23 crore in FY 2021-22.**
    - The reduction in expenditure reflects a **drop in contributions from both workers and the government,** further undermining the scheme's viability.
  - The **PM-SYM aimed to enroll 100 million workers by 2023** but reached only **5 million by FY24,** covering less than **1% of the 565 million-strong unorganised workforce.**
    - However, the government has extended the scheme for another year, until 2025-26, while awaiting a revision to enhance its appeal.
- **Reasons for Poor Performance:**
  - **Income Challenges:** Irregular income and unstable employment make it **difficult for unorganised workers,** especially daily wage earners, **to afford the monthly premium** of Rs 55- Rs 200, further reducing their ability to participate.
  - **Impact of Covid-19**: The pandemic worsened the financial situation for many unorganised workers, hindering their ability to contribute to the scheme.
  - **Structural Barriers:** Lack of a formal **employer-employee relationship in the unorganized sector** leads to challenges for workers in accessing the scheme due to insufficient **documentation and awareness.**
  - **Existing Pension Alternatives**: The presence of other pension schemes like **Atal Pension Yojana (APY)** may cause confusion, leaving workers uncertain about which one to opt for.
- **Recommendations for Revamping the Scheme:**
  - **Expand Entry Age:** Increase the eligibility age from 40 years to 50 years to include older unorganised workers.
  - **Scheme Merger:** Combine PM-SMY with **APY** and **Pradhan Mantri Laghu Vyapari Maan-Dhan Yojana** for better alignment and coverage.
  - **e-Shram Portal:** The **e-Shram portal,** with a database of over 305 million workers, can play a critical role in onboarding beneficiaries for PM-SMY.
    - Integrating **PM-SMY with the e-Shram database** could streamline enrolment and ensure wider reach.
  - **Direct Benefit Transfer (DBT):** Introduce **subsidies** to cover contributions for workers who cannot afford to pay out of pocket.
  - **Awareness Campaigns:** Launch targeted outreach programs to improve awareness and reduce misinformation about the scheme.

Parliamentary Committees

- **About:** Parliamentary Committees (PC) are panels of **Members of Parliament (MPs)** appointed or elected by the House or nominated by the Speaker/ Chairman.
  - These committees draw their authority from **Article 105 (privileges of MPs)** and **Article 118 (rules for procedure and conduct of business).**
- **Need:** Due to limited time in **Parliament,** PCs are essential for **detailed discussions, expert input, and cross-party consensus.**
  - They thoroughly examine Bills, and policies, ensuring effective legislative work and avoiding political polarisation.
- **Types of Parliamentary Committees:**
  - **Standing Committees** are **permanent and ongoing bodies** within Parliament that play a crucial role in legislative work.
    - These include Financial Committees (scrutinize expenditure), Departmental Committees (oversee ministries), Enquiry Committees (investigate issues), Scrutiny Committees (ensure policy accountability), Day-to-Day Business Committees (manage procedures), and House-Keeping Committees (handle logistics).
  - **Ad Hoc Committees** are temporary panels formed for specific tasks, including Inquiry Committees and Advisory Committees for expert recommendations.
    - They dissolve once their task is completed.

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Note:

Who are Unorganised Workers?

- **About:** The term unorganized worker, as defined under the **Unorganized Workers' Social Security Act, 2008,** refers to home-based workers, self-employed workers, or wage workers in the unorganized sector.
  - Additionally, **workers in the organized sector are also classified as unorganized** if they are not covered under **key labor laws,** including the **Employees' Compensation Act, 1923,** Industrial Disputes Act, 1947, Employees' State Insurance Act, 1948, Provident Funds Act, 1952, Maternity Benefit Act, 1961, or the Payment of Gratuity Act, 1972.
- **Initiatives for Unorganized Workers:**
  - e-Shram Portal
  - Atal Pension Yojana
  - Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)
  - Pradhan Mantri Shram Yogi Maan-dhan (PM-SYM)
  - Mahatma Gandhi Bunkar Bima Yojana
  - Pradhan Mantri Kaushal Vikas Yojana
  - Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)

Good Governance Day 2024

Why in News?

Good Governance Day is celebrated on **25th December** to raise awareness among citizens about **government accountability and effective administration**.

- The **theme** for 2024 is **"India's Path to a Viksit Bharat: Empowering Citizens through Good Governance and Digitalisation."**
- It was started in the year **2014** to honor the birth anniversary of former Prime Minister **Atal Bihari Vajpayee**.
- The birth anniversary of **Pt. Madan Mohan Malaviya** is also observed on **25th December.**

Atal Bihari Vajpayee

- **Birth:** Born on **25th December, 1924, in Gwalior, Madhya Pradesh**, he was a poet and politician**.**
- **Political Career**: He served as **India's Prime Minister three times**: briefly in **1996**, for 13 months in **1998 and 1999**, and full-time from **1999 to 2004**.
- **Recognition:** In **2015**, he was conferred India's highest civilian honour, the **Bharat Ratna.** He received **Padma Vibhushan** in **1994.**
- **Key Achievements**:
  - **Golden Quadrilateral Project:** Network of four national highways that connect **Delhi, Mumbai, Chennai, and Kolkata.**
  - **Economic Reforms:** Liberalized India's economy, fostering **industrial growth and foreign investment.**
  - **Nuclear Tests of 1998:** Established India as a **nuclear power,** promoting peace and non-aggression.

Pt. Madan Mohan Malaviya



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Note:

What Initiatives were Launched on Good Governance Day 2024?

- **New iGOT Karmayogi Dashboard:** It allows Ministry/ Department/Organization (MDO) leaders and state administrators to **monitor the progress and effectiveness** of their entities more efficiently.
- **1600th iGOT Karmayogi Course:** It aims to create a **learning ecosystem** for **government employees,** promoting continuous development and lifelong learning.
- **Viksit Panchayat Initiative:** It aims to strengthen **PRIs' ability to deliver quality services,** ensure effective governance, and empower Panchayat leaders with essential skills.
- **CPGRAMS Annual Report, 2024:** It underscores the progress made in enhancing the effectiveness of **public service delivery** through a robust grievance redressal mechanism.

What is Good Governance?

- **About:** Good governance is the process of **decision-making and the process** by which decisions are implemented that are necessary to achieve the **goals of development.**
  - According to the **World Bank** report titled **"Governance and Development, 1992"**, Good Governance is the manner in which **power is exercised** in the management of a country's **economic and social resources for development.**
  - The true test of **'good' governance** is the degree to which it delivers on the promise of **human rights: civil, cultural, economic, political and social rights**.
- **Key Attributes:** According to the **World Bank**, good governance has **8 major characteristics.**
  - It is participatory, consensus oriented, **accountable**, transparent, responsive, effective and efficient, equitable and inclusive and follows the **rule of law**.
    - **Participatory: Gender-inclusive** participation is vital for good governance, whether **direct** or through **representatives or institutions.**
    - **Consensus Oriented:** Good governance involves **mediating societal interests** to build consensus on the community's best interests and sustainable development goals.
    - **Accountable:** An organization or an institution should be **accountable** to those who will be **affected by its decisions or actions.**
    - **Transparent:** Transparency means decisions are made according to **rules**, with **information accessible** to those affected by them.
    - **Responsive:** Institutions should **serve all stakeholders** within a reasonable timeframe.
    - **Effective and Efficient:** Good governance ensures processes and institutions **meet societal needs** while **efficiently** using available **resources.**
    - **Equitable and Inclusive:** A society's well-being depends on including **all members**, especially **vulnerable groups**, in opportunities to improve or maintain their well-being.
    - **Rule of Law:** It requires **fair, impartial legal frameworks**, supported by an **independent judiciary** and a **corrupt-free police force.**



- **AB Vajpayee and Good Governance:** His tenure saw transformational initiatives like the **Kisan Credit Card, Pradhan Mantri Gram Sadak Yojana, Sarva Shiksha Abhiyan**, and the **National Rural Health Program** that transformed governance in the country.

What is the Significance of Good Governance?

- **Economic Growth:** Initiatives under good governance provide **equal rights and protection** to both men and women in the workforce that could **boost India's GDP by USD 770 billion by 2025**.
- **Social Development: SWAYAM and Skill India** empower marginalized groups with education and employability skills.

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Note:

- Aadhaar integration prevents leakages while direct benefit transfer (DBT) eliminates middlemen in welfare schemes.

- **Strengthening Democracy:** Platforms like MyGov allow citizens to **voice their opinions** and e-Governance helps reduce corruption.
- **Accountability:** The RTI Act, 2005 ensures citizens' right to **access government information** for transparency, while the PFMS tracks **fund flows** to ensure accountability in public expenditure.
- **Reducing Inequality:** Pradhan Mantri Jan Dhan Yojana (PMJDY) promotes financial inclusion for the unbanked population.
  - MGNREGA provides guaranteed wage employment to rural households.
- **Building Trust:** The e-Courts project digitizes court processes for efficiency and accessibility, while CPGRAMS offers a platform to address **citizen grievances.**

What are Initiatives for Good Governance in India?

- Good Governance Index
- PRAGATI (Pro-Active Governance and Timely Implementation)
- Right to Information, 2005
- National e-Governance Plan
- e-Court System
- Public Financial Management System
- Mission Karmayogi

What are the Hurdles with Good Governance in India?

- **Corruption:** Corruption costs India **0.5% of its GDP annually** and **hampers the business environment** for investors and organizations, according to the **World Bank**.
  - India ranked **93rd out of 180 countries** on the **corruption perceptions index for 2023.**
- **Lack of Accountability:** Lack of accountability **erodes citizens' trust** in the government, leading to **political apathy, lower voter turnout, and diminished civic engagement,** weakening institutional legitimacy.
- **Criminalisation of Politics:** Politicians with criminal backgrounds **weaken efforts to ensure justice and equal treatment for all citizens.**
  - The **Association of Democratic Reforms (ADR)** reports that **251 (46%)** of the **543 newly elected 18th Lok Sabha** members have criminal cases, with **27 convicted.**
- **Ineffective Implementation of Laws:** India's anti-corruption laws, like the Prevention of Corruption Act, 1988 are criticized for ineffective enforcement, causing public disillusionment.

Centre Scrapped "No Detention Policy"

Why in News?

Recently, the Central Government has abolished the **"no-detention" policy** for **Classes 5 and 8** in schools governed by it including **Kendriya Vidyalayas** and **Jawahar Navodaya Vidyalayas**.

- It was done through a **gazette notification** titled **"Right of Children to Free and Compulsory Education (Amendment) Rules, 2024"**.
- This amendment allows schools to **detain students who fail to meet promotion criteria.**

No-Detention Policy

- The no-detention policy was introduced under **Section 16 of the Right to Education Act (RTE)**. **Section 16** of the Act stipulates **two key provisions**:
  - Firstly, **no child** receiving elementary education shall be **expelled from school,** and secondly, **no child shall be retained in any class.**
  - It **prohibited schools from detaining students up to Class 8** to ensure children receive a minimum level of education without the fear of failure, thereby reducing dropout rates.

What is Right of Children to Free and Compulsory Education (Amendment) Rules, 2024?

- The Right to Education (RTE) Act, 2009, was amended in 2019 to eliminate the **no-detention policy.** The

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Note:

Rules to implement the amended Act were delayed and passed in 2024 to keep them in sync with the National Curriculum Framework (NCF) following the introduction of the National Education Policy (NEP) 2020.

- Following the **RTE amendment Act, 2019**, 18 states and UTs, including Assam, Bihar, Gujarat, and Tamil Nadu, have abolished the policy.
  - Haryana and Puducherry are yet to decide, while states like Andhra Pradesh, Maharashtra, and Uttar Pradesh continue to implement it.

➢ **Key Provisions Under Amended Rules:**

- **Revised Promotion Criteria**: Exams and re-exams will assess holistic development, focusing on learning rather than rote memorization.
  - **Students failing in annual exams will receive 2 months** of additional instruction and a **re-exam opportunity** to address learning gaps.
- **Retention in Case of Non-Promotion**: Students failing after re-exams will be retained in the same class.
- **Specialized Interventions for Detained Students**: Class teachers must guide detained students and their parents, **providing targeted interventions.**
  - School heads are responsible for monitoring progress and ensuring remedial effectiveness.
  - Under the NEP, students who are weak in studies should be paid special attention.
- **Inclusive Learning Approach and Safeguards**: The rules prioritize holistic development, ensuring no student is expelled before completing elementary education, in line with the RTE Act.

What are the Arguments in Favour and Against the No-Detention Policy in School Education?

➢ **Arguments in Favor:**

- **Reduces Dropouts**: The policy aimed to **reduce the number of students dropping out** of school due to the **fear of failure and detention**.
- **Focus on Continuous and Comprehensive Evaluation (CCE):** It emphasized CCE, which focuses on **continuous assessment of a child's progress in various aspects**, rather than a single high-stakes examination.
  - This holistic approach aimed to **reduce exam-related stress and anxiety.**
- **Inclusive Education:** The policy promoted **inclusive education** by ensuring that all children, regardless of their academic performance, stay in school and receive an education.
- **State Demands:** Several states **passed resolutions against the policy,** emphasizing the need for accountability in elementary education.
  - By 2019, the RTE Act was amended, allowing states to decide on implementing detention policies for Classes 5 and 8.
- **Alignment with NEP 2020:** The decision to scrap the policy aligns with the objectives of NEP 2020 which emphasizes **competency-based learning and accountability** in school education.
- **Global Practices:** Countries like Finland emphasize remedial measures and continuous assessment over automatic promotion.
  - **Grade retention in the US** is a common practice where **students who fail to meet grade-level standards** are required to r**epeat a grade.** The policy varies across different grade levels and states.

➢ **Arguments Against:**

- **Low Learning Outcomes:** The no-detention policy has **led to complacency among students and educators,** resulting in a **decline in education standards** as schools focus more on administrative tasks like mid-day meals than on improving learning outcomes.
  - The ASER **2022 report** highlighted that **only 20% of Class 3 students in rural India could read a Class 2-level text** and as per 2023 report about **25% of the youth** cannot read a **Class II level text fluently** in their regional language.
    - Over half struggle with division problems, with only 43.3% of 14-18-year-olds able to solve such problems correctly.
- **High Failure Rates in Higher Classes:** As per Education Ministry **65 lakh students failed Classes 10 and 12** in 2023, reflecting **foundational learning gaps.**

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Note:

- Automatic promotion without necessary skills and knowledge in lower standards leads to **increased failure rates in secondary school.**

❍ **Lack of Accountability:** The policy is seen to reduce accountability among students and teachers, **as students are automatically promoted to the next grade** regardless of their performance.

❍ **Does Not Address Root Causes:** The policy is criticized for not adequately addressing the root causes of poor learning outcomes, such as **inadequate teacher training, lack of infrastructure**, and **socio-economic factors.**

Right to Education

➢ **Education** was originally a state subject in India under the **Government of India Act 1935.** However, during the **42nd Amendment Constitutional Amendment 1976**, education was moved to the **Concurrent List**.

❍ Thus now **both the central and state governments** can legislate on matters concerning education.

➢ The **Eighty-sixth Amendment Constitution Act, 2002** made the **Right to Education** a **fundamental right** under **Article 21A** for children aged **6-14 years.**

❍ It added **Article 21A** under **Fundamental Rights,** making education a fundamental right for children aged six to fourteen, mandating free and compulsory education.

❍ In the **Directive Principles of State Policy (DPSP)**, **Article 45** was substituted to **emphasize the state's responsibility to provide early childhood care and education** until the age of 6.

❍ Additionally, **Article 51A** was amended to **include a duty for parents or guardians** to ensure **educational opportunities for their children** or wards between 6 and 14 years.

➢ Later, **Parliament** passed the **Right to Education Act, 2009**, enforcing RTE as a **fundamental right** under **Article 21-A.**

Government Initiatives Related to Educational Reforms

➢ National Education Policy, 2020

➢ National Programme on Technology Enhanced Learning

➢ Sarva Shiksha Abhiyan

➢ PRAGYATA

➢ Mid-Day Meal Scheme

➢ PM SHRI Schools

➢ Samagra Shiksha Scheme 2.

NHRC and Associated Challenges

Why in News?

Recently, **Justice (Retd.) V Ramasubramanian,** a former **Supreme Court judge**, has been appointed as the **Chairperson** of the **National Human Rights Commission (NHRC)** by the **President** of India.

➢ The post had been vacant since Justice (Retd.) Arun Kumar Mishra completed his tenure on 1st June 2024.

What is the National Human Rights Commission (NHRC)?

➢ **About:**

❍ The **NHRC** of India is an **autonomous statutory body** established to **promote and protect human rights.**

➢ **Establishment:**

❍ It was constituted on **12th October 1993** under the **Protection of Human Rights Act (PHRA), 1993**, which was later amended in 2006 and 2019.

❍ The Commission was established in conformity with the **Paris Principles**, which are international standards adopted for promoting and protecting human rights.

- The **Paris Principles** are the set of international standards adopted for the **promotion and protection of human rights** in **Paris (October, 1991)** and endorsed by the **General Assembly** of the **United Nations (UN)** on 20th December, 1993.
- These principles guide the work of National Human Rights Institutions (NHRIs) across the world.

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Note:

NATIONAL HUMAN RIGHTS COMMISSION (NHRC)

According to NHRC, Human Rights are the rights relating to life, liberty, equality and dignity of the individual guaranteed by the Constitution or embodied in the International Covenants and enforceable by courts in India

- Watchdog of Human Rights in India
- **Estd:** 1993 (in conformity with Universal Declaration of Human Rights)
- **Act:** Protection of Human Rights Act (PHRA), 1993

State Human Rights Commissions

- Also constituted under the PHR Act, 1993
- **Appointment of Members:** by Governor
- **Removal of Members:** by President

Human Rights Day: 10 December

Functions

- Investigates Complains of human rights violations
- *Suo Moto* cognizance of cases
- Reviews and recommends human rights implementation
- Spreading human rights awareness
- Conduct studies, publish reports on human rights issues

Powers

- Summon individuals, examine witnesses, and receive evidences
- Inspect prisons and other institutions to ensure conditions are humane
- Intervene in court proceedings relating to human rights

Members of NHRC

Composition

- 5 full-time members and 7 deemed members
- **Chairperson:** Retired CJI/Judges of the SC
- **Administrative Head:** Secretary-General

Tenure

- 3 years / till age 70 (whichever is earlier)

Removal

- President can remove the chairman or any member
- **Ground:** Charges of proved misbehaviour or incapacity

Appointment

- All members appointed by **President** on recommendations of a **6-member** committee (PM, Speaker of LS, Deputy Chairman of RS, Union Home Minister and Leaders of Opposition of both Houses of Parliament)

Global Alliance of National Human Rights Institutions (GANHRI) Status

- **NHRC** has been accredited **'A' Status** since **1999**
- **Retained 'A' Status:** 2006, 2011 and 2017
- **Suspension of 'A' Status:** 2023 and 2024

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- **Role and Functions:**
  - **Intervention in Court Proceedings**: It **intervenes in court cases** involving allegations of human rights violations, with prior approval from the concerned court.
  - **Review of Safeguards**: It **analyzes constitutional provisions** and existing laws related to **human rights** protection and **proposes measures** for their effective enforcement.

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Note:

- **Evaluation of Inhibitors to Human Rights**: It examines factors, including **terrorism,** that hinder the enjoyment of human rights and suggest appropriate remedies.
- **Study of International Instruments**: It also analyzes **treaties and international conventions on human rights,** offering recommendations for their implementation in the Indian context.
- **Research and Promotion**: It undertakes research in human rights and encourages its study across disciplines.
  - It also promotes **human rights literacy and awareness** through publications, seminars, media, and other means.

- **Powers of NHRC:** NHRC is vested with powers equivalent to those of a **civil court** as per the **Code of Civil Procedure, 1908**. These powers include:
  - Ordering the discovery and production of **documents.**
  - **Receiving evidence** presented through affidavits.
  - Requisitioning **public records or certified copies** from any court or office.
  - Issuing commissions for the examination of **witnesses or documents.**
  - Exercising any **additional powers** prescribed under relevant laws.
- **NHRC Investigation Team:** The NHRC has its own investigation team led by a **Director General of Police.**
  - It can also utilize the services of Central or State Government officers and **collaborate with NGOs** for investigations.

What are the Challenges Related to NHRC?

- **Non-Binding Recommendations:** The NHRC can **only make recommendations** to the government, which are **not legally binding.** This limits its ability to enforce its decisions and ensure compliance.
  - The Commission has been referred to as a **"toothless tiger,"** by **former Chief Justice H.L. Dattu**, who served as its chairperson in 2016, due to its perceived passivity in addressing human rights violations.
- **Jurisdictional Limitations:** The NHRC's jurisdiction is limited to human rights violations committed by **public and private authorities**.
  - It cannot address violations by **private individuals or entities.** It also has **limited jurisdiction over cases related to armed forces.**
- **Lack of Enforcement Power:** The NHRC **does not have the authority to penalize** authorities that fail to implement its recommendations.
- **Resource Constraints:** The NHRC often faces **resource constraints**, including **inadequate funding and staffing**, which hampers its ability to investigate and address human rights violations effectively.
- **Heavy Workload**: The NHRC receives a large number of complaints and petitions, which can overwhelm its capacity to handle cases promptly and thoroughly.
- **Awareness and Accessibility:** Many people are unaware of the NHRC's existence and its mandate, which limits the number of complaints it receives.
  - Additionally, the process of filing complaints can be cumbersome and inaccessible to marginalized communities.
- **Lacking Recognition at Global Stage:** The **Global Alliance of National Human Rights Institutions (GANHRI)**, a UN-affiliated body based in Geneva, has **deferred the accreditation of India's NHRC,** highlighting concerns regarding its compliance with international standards.
- **Exceptions:** The NHRC **does not consider cases** that are **older than one year**, **anonymous, pseudonymous, or vague.**
  - It also **excludes frivolous cases** and those **related to service matters**, as they fall outside its jurisdiction or mandate.
  - It is also observed that sometimes **NHRC takes politically influenced cases** and leaves another.

What Measures Should be Taken to Enhance the Effectiveness of the NHRC?

- **Granting Enforcement Powers**: Empowering the NHRC to **enforce its recommendations** would enhance compliance and ensure **greater accountability** in addressing human rights violations.
- **Expanding Investigative Authority**: The NHRC's mandate should be extended to include **violations by private individuals or entities**, especially in the **corporate and healthcare sectors**.

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Note:

- **Time-bound Investigations**: Introducing **time limits** for the completion of investigations would expedite justice for victims and ensure timely resolutions of complaints.
- **Increasing Financial Autonomy**: Allocating a **dedicated, independent budget** for the NHRC, free from government control, would increase its operational efficiency and reduce external influence.
- **Addressing Emerging Issues**: The NHRC must adapt to emerging human rights challenges such as **digital privacy**, **artificial intelligence**, **and environmental rights.**
  - Establishing **specialized committees or research divisions** within the NHRC to address these issues would enable a proactive response to contemporary challenges.
- **Regular Training and Capacity Building**: Continuous **training and skill development** for NHRC members and staff would ensure they are well-equipped to handle complex and evolving human rights cases effectively.
- **Institutional Accountability**: India needs to **adopt international standards** and **recognitions from global bodies** like UNHRC.
  - This would ensure that the NHRC's performance is continuously assessed, improving its effectiveness in achieving its mandate.

Various National Commissions Related to Protection of Vulnerable Sections

- **National Commission for Scheduled Castes (NCSC):**
  - The **NCSC** was established by Article 338. It consists of a chairperson, a vice-chairperson and three other members appointed by the **President**.
- **National Commission for Scheduled Tribes (NCST):** The **NCST** was established under Article 338 A.
  - It consists of a chairperson, a vice-chairperson and three other members appointed by the **President**.
- **National Commission for Backward Classes (NCBC):** The **102nd Amendment Act of 2018** elevated the Commission from a statutory body to a **constitutional body** by inserting **Article 338 B.**
  - The Commission consists of a **chairperson, a vice-chairperson** and 3 other members.

Note: The aforementioned trio of Commissions (NCSC, NCST, NCBC) possess the authority equivalent to that of a civil court.

- **National Commission for Women (NCW):** The NCW was set up as a statutory body in 1992 under the **National Commission for Women Act, 1990** to review the Constitutional and Legal safeguards for women.
  - The Commission shall consist of a Chairperson, 5 Members, at least 1 Member from SC and ST and a Member-Secretary nominated by the Central Government.
- **National Commission for Protection of Child Rights (NCPCR):** The NCPCR has been constituted under the **Commission for Protection of Child Rights (CPCR) Act, 2005.**
  - The commission includes a chairperson and 6 members, at least 2 of whom are women.
- **National Commission for Minorities (NCM):** The Minorities Commission was renamed and became a statutory body under the **National Commission for Minorities Act, 1992.**
  - Section 2 (c) of NCM Act, 1992 stipulates that 'Minority' for the purposes of the Act, means a community notified as such by the Central Government.
    - The government recognized **Muslims, Christians, Sikhs, Buddhists, Zoroastrians and Jains** as minority communities.
  - The Commission consists of a Chairperson, a Vice- Chairperson, 5 Members.
  - Each Member holds office for a period of 3 years.
- **Office of Chief Commissioner for Persons with Disabilities:** Section 74 of **Rights of Persons with Disabilities Act, 2016** provides for appointment of a Chief Commissioner for Persons with Disabilities and two Commissioners to assist the Chief Commissioner at the Centre.

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Note:

National Programme for Prevention and Control of NCD

Why in News?

Recently, the Ministry of Health and Family Welfare highlighted the progress of the **National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD)** across India.

What is the NP-NCD?

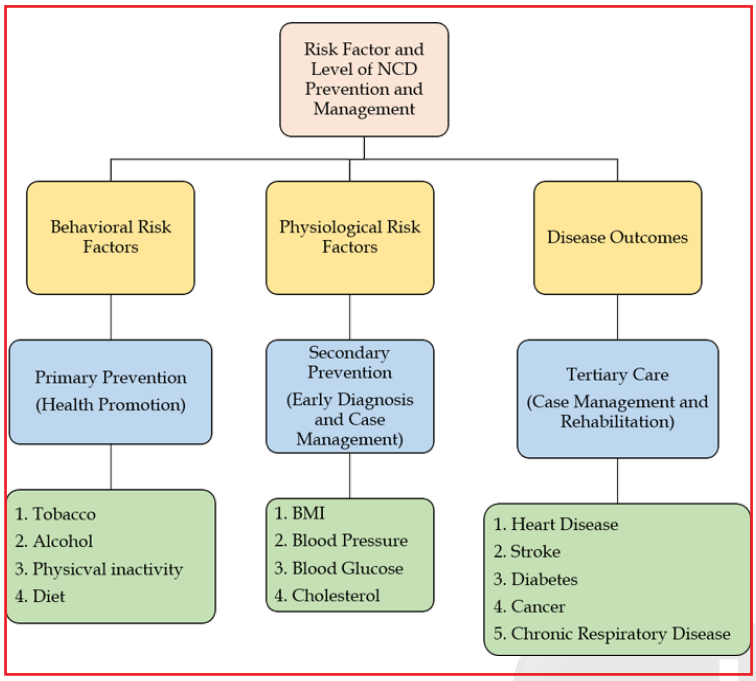
- **About:** The NP-NCD is aimed at addressing the growing burden of **non-communicable diseases (NCDs)** such as **cardiovascular diseases (CVDs), cancer**, and **diabetes.**
  - These diseases have emerged as major public health concerns, contributing to **approximately 63% of all deaths in India.**
- **Objectives:** The primary goal of NP-NCD is to prevent and control major NCDs through infrastructure strengthening, human resource development, health promotion, and **early diagnosis and management of diseases**.
- **Implementation:** The program is implemented at national, state, and district, with financial support provided under the **NCD Flexi-Pool** through the **National Health Mission (NHM).**
  - States receive financial aid to implement NCD-related activities at the district level and below, with a **60:40 Centre-State share** (90:10 for North Eastern and hilly states).
- **Key Components of NP-NCD:**
  - **NCD Screening**: Targeting individuals aged 30 years and above for screening of **diabetes, hypertension, and common cancers** such as oral, breast, and cervical cancer.
  - **NCD Clinics**: Establishment of **District NCD Clinics** and **Cardiac Care Units (CCUs), and Community Health Centre (CHC) NCD Clinics** for early diagnosis, treatment, and emergency care.
  - **Cancer Care**: Setting up **Day Care Centres** for cancer patients and supporting tertiary cancer care infrastructure.
  - **Training**: Health workers like **ASHAs (Accredited Social Health Activists), ANMs (Auxiliary Nurse Midwives),** and Medical Officers are trained in early detection, management, and prevention of NCDs.
  - **Digital Integration**: Use of the **National NCD Portal** and mobile applications to track and manage NCD data and screenings.
- **Impact:** Established 770 District NCD Clinics, 372 Day Care Centres, 233 CCUs, and around 6,410 CHC NCD Clinics for accessible NCD diagnosis and management.
  - Implemented population-based screening for common NCDs as part of **primary healthcare under NHM.**
  - ASHAs educate communities on NCD prevention, promote healthy habits, and stress early detection through screenings and check-ups.

Non-Communicable Diseases

- **About:** NCDs, also known as chronic diseases, are **long-lasting conditions** that are not transmitted from person to person.
  - These diseases develop over a long period and are influenced by **genetic, environmental, and behavioral factors.**
- **Risk Factors for NCDs:** Tobacco use, excess salt, alcohol abuse, inactivity, raised blood pressure, obesity, high blood lipids, and air pollution.
- **Impact: NCDs account for 74% of global deaths,** with over 15 million premature deaths annually (ages 30-69), 85% of which occur in low- and middle-income countries.
- **Prevention and Control Strategies:** Reduce tobacco, alcohol use, promote exercise, healthy diets, and better air quality. Early screening, primary care, and universal health coverage can improve outcomes and reduce costs.
- **WHO Response:** The **World Health Organization (WHO)** Global Action Plan for NCDs to 2030 includes an Implementation Roadmap to accelerate progress toward **Sustainable Development Goals (SDG) target 3.4**, aiming to reduce premature NCD deaths by one-third.

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Note:



SAFE Accommodation: Worker Housing for Manufacturing Growth Report

Why in News?

Recently, **NITI Aayog** released a report on **SAFE Accommodation: Worker Housing for Manufacturing Growth** that explores the crucial role of **secure, affordable, flexible, and efficient (SAFE) accommodations** for industrial workers.

- It identifies key **challenges, offers actionable solutions, and highlights the pivotal interventions** required to scale up such housing facilities across the country.

Note: SAFE accommodation originally stands for **Site Adjacent Factory Employee Accommodation.**

What is SAFE Accommodation?

- **About: SAFE Accommodation** is a concept aimed at providing **housing facilities** for employees **close to their workplace**, typically near industrial or factory sites.



- **Facilities:** It includes long term **dormitory-style accommodation** which is **rented** directly to **workers or their employers**.
  - It includes essential amenities such as **water, electricity, sanitation facilities,** and other basic services like **food, laundry, and dispensary facilities**.
  - It **excludes family** housing.
- **Objectives:**
  - Facilitate **labor mobility and productivity** through SAFE accommodations to enhance manufacturing competitiveness.
  - Designate workers' accommodations as **critical infrastructure** with tailored regulations for construction and operation.
  - Develop a **market-driven ecosystem** for private developers to provide affordable accommodations with attractive returns.

Note: Dormitory-style accommodation is a **large space** with **many rooms where people sleep**. It can also refer to a **room with multiple beds** for people to stay in.

What SAFE Accommodation Helps in Manufacturing Growth?

- **Manufacturing Growth:** According to the **Economic Survey 2023-24**, India needs to add **7.85 million jobs** every year until **2030** to sustain economic growth.

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Note:

- **Formal accommodations** near work sites can **attract and retain** the workforce necessary to support this expansion.

➢ **Women Empowerment:** In **China**, women contribute **41% to the GDP with a 61% labor participation rate**, nearly double **India's 18% GDP contribution** and lower participation.

- SAFE Accommodation can ensure **secure housing for women** while generating employment and opportunities for them.

➢ **Sectoral Transition:** Manufacturing employs **11% of the workforce but contributes 14% to nominal GVA**, while **agriculture** employs **46%** but contributes **only 18% to GVA**.

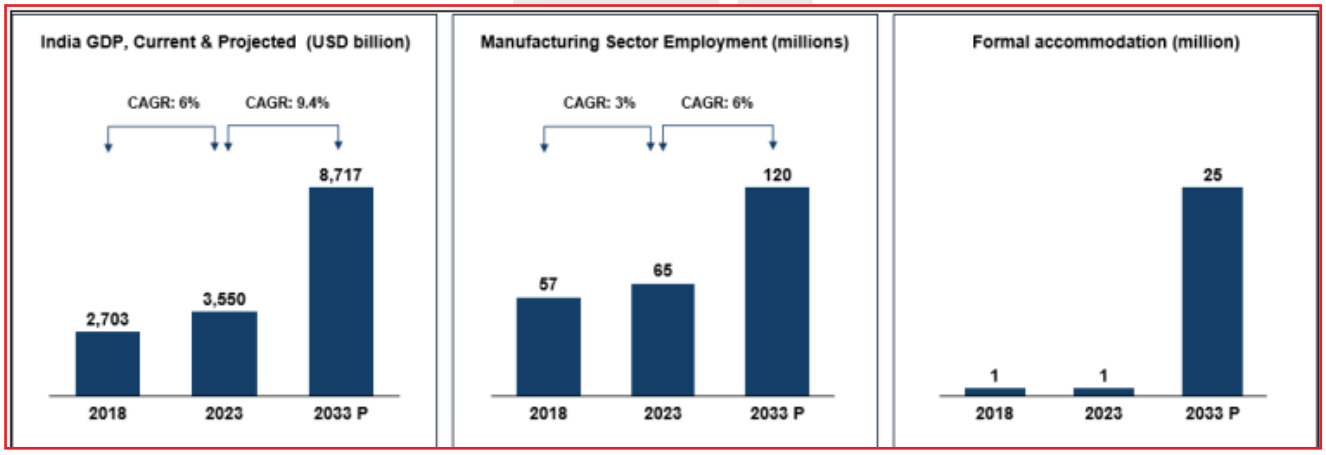
- SAFE Accommodation can help **transfer surplus labourforce** from agriculture to industry.
- India aims to **increase** the share of manufacturing in its **GDP to 25%**. However, it has been hovering around **14-16% since FY12.**

➢ **Supporting Make in India:** Specific industrial hubs are emerging, such as the assembly and packaging industry in **Sriperumbudur, Tamil Nadu**, the **Electric Vehicle (EV) hub** in **Hosur, Tamil Nadu**, and the **semiconductor hub** in **Dholera, Gujarat**.

- SAFE Accommodation can help secure adequate workforce in a **single concentrated location** which will typically include **migrant workers**.

➢ **Rising Accommodation Demand:** India needs to grow **economically** at a Compound **Annual Growth Rate (CAGR) of 9.4% per annum** to reach its **Viksit Bharat goals** and create more jobs.

- By **2033, ~20%** of the workforce may **prefer affordable formal housing**, requiring **25 million housing units** for manufacturing workers.



➢ **Enhances Productivity and Retention:** Proximate and well-designed housing **improves workers' quality of life, reduces commute times**, and enhances overall productivity.

- This leads to lower attrition rates and recruitment costs, ensuring a **stable and skilled workforce** for factories.

➢ **Attracting Global Investments:** Multinational corporations **prioritise worker welfare and efficiency**, with quality accommodations making India a preferred manufacturing hub.

- **It aligns with global labour standards** that prioritise adequate and safe worker housing.

Global Examples of SAFE Accommodation

➢ **China:** A majority of **migrant factory workers** were accommodated in workers' **dormitories** built by employers, often on land provided for free by local governments.

- About **80%** of the **thirty million assembly-line workers** in China's **Special Economic Zones** are **female** recruited from rural areas of interior provinces.
- Accommodation is often **part of the employment agreement.**

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Note:

- **Japan:** Early Japanese industrialisation **housed female labour force** from faraway villages in dormitory accommodation.
- **Singapore:** Singapore has a separate act for migrant housing called the **Foreign Employee Dormitories Act, 2015** and differential building regulations for workers' dormitories.
- **Vietnam:** Vietnam had approved a plan to build **1 million social housing units** for **low- and middle-income households** in urban areas and for workers in industrial parks to facilitate recruitment of female labour from rural areas.

What Challenges are Involved in Scaling Up Worker Accommodation?

- **Restrictive Zoning Laws:** Residential developments are often **prohibited in industrial zones** unless explicitly permitted, forcing workers to live far from their workplaces.
  - This **increases commute times and costs**, impacting productivity and retention.
- **Conservative Building Bye-Laws: Low Floor Area Ratios (FAR)** and other inefficient land-use regulations **limit the potential** for high-capacity housing on available land.
- **High Operating Costs:** Hostel accommodations in industrial zones are often classified as **commercial establishments**, leading to **higher property taxes and utility rates**.
  - These increased costs discourage private sector participation.
- **Financial Viability:** High capital costs and low returns make large-scale worker accommodation projects unattractive to private developers.
  - Infrastructure investors require a **lease rental of Rs. 4,000 per worker for 80 square feet** which is about **30% of a minimum-wage** worker's salary, making it **unaffordable** for many.
- **Coordination:** Coordination challenges also arise, as industrial hubs require **synchronized investments** in housing, infrastructure, and industries to succeed.

India Maritime Heritage Conclave 2024

Why in News?

Recently, the **1st India Maritime Heritage Conclave (IMHC 2024)** was organized by the **Ministry of Ports, Shipping and Waterways**, celebrating **India's maritime legacy** and contributions to global trade, while discussing future innovations.

What are the Key Highlights of the IMHC 2024?

- **Theme:** ***"Towards Understanding India's Position in Global Maritime History."***
  - Focused on India's historical and contemporary contributions to global maritime trade, culture, and innovation.
- **Key Highlights:** stalls at the conclave exhibited India's maritime legacy, showcasing ancient shipbuilding techniques and navigational tools, reflecting India's historical connection to global trade networks.
  - Leading maritime nations like Greece, Italy, and the United Kingdom participated, emphasizing the global significance of India's maritime heritage.
  - A key highlight was the emphasis on the upcoming **National Maritime Heritage Complex (NMHC) in Lothal,** which will showcase India's ancient maritime techniques, such as shipbuilding and bead-making.



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Note:

National Maritime Heritage Complex (NMHC)

- The **NMHC** is being built in **Lothal, Gujarat**, a historic **Indus Valley civilization(IVC)** site, under the **Ministry of Ports, Shipping, and Waterways**.
  - The NMHC project aims to become **one of the world's largest maritime complexes,** integrating past, present, and future maritime activities into a world-class facility.
- The NMHC project will feature a museum with 14 galleries, Lothal Town, an Open Aquatic Gallery, Lighthouse Museum, Coastal State Pavilions, eco resorts, theme parks, and a maritime research institute.



What is India's Maritime History?

- **Ancient India:**
  - **Indus Valley Civilization (IVC) (3300-1300 BCE) :** The origins of India's maritime activities can be traced to the **IVC**.
    - **Lothal's dry-dock (2400 BC)** is the **world's first known dry-dock,** reflecting advanced nautical knowledge.
    - Evidence indicates robust trade between the **Indus Valley and Mesopotamia.**
      - The discovery of **Harappan seals and jewelry in Mesopotamia** underscores this extensive exchange between the two ancient civilizations.
  - **Vedic Era (1500 - 600 BC):** **Vedic literature**, including the Rig Veda, mentions boats and sea voyages, with Varuna, the Lord of the Sea, guiding maritime routes.
    - The **Ramayana** and **Mahabharata** describe shipbuilding and sea travel.
  - **Nandas and Mauryas (500 – 200 BC):** The **Magadh kingdom's navy is the first ever recorded instance of a navy anywhere in the world**.
    - **Chanakya,** the advisor to the first Mauryan emperor, **Chandragupta Maurya,** detailed a waterways department led by a ***Navadhyaksha (Superintendent of Ships)*** in his **Arthashastra.**
    - **Emperor Ashoka** used maritime routes to spread **Buddhism** to Southeast Asia and Sri Lanka, further enriching India's cultural and religious influence.
  - **Satavahana Dynasty (200 BC-220 AD):** The **Satavahanas** controlled India's East coast, trading with the Roman Empire.
    - They were the **first native Indian rulers to issue coins inscribed with ships.**
  - **Gupta Empire (320-550 AD):** The **Gupta Dynasty** marked India's Golden Age, with prosperity, cultural growth, and advancements in astronomy and navigation, as noted by Chinese travelers **Fa-Hien** and **Huein Tsang**.
    - Astronomical advancements by **Aryabhata and Varahamihira** improved oceanic navigation, enabling precise voyages. The opening of several ports revived maritime trade with Europe and Africa.
  - **Southern Dynasties:**
    - **Cholas (3rd–13th century):** Extensive maritime trade with Sumatra, Java, Thailand, China. Built harbors, shipyards, lighthouses.
    - **Pandyas:** Controlled pearl farming and traded with Rome and Egypt.
    - **Cheras (12th Century):** They traded with the **Greeks and Romans,** using monsoon winds to sail from **Tyndis (near Kochi) and Muziris (near Kochi) to Arabian ports.**

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Note:

- **Medieval India:**
  - **Arabs:** By the **8th century**, Arabs emerged as prominent maritime traders, acting as intermediaries between India, Southeast Asia, and Europe.
    - Their influence marked a shift in the control of Indian Ocean trade routes.
  - **Portuguese:** In the **16th century**, **Vasco da Gama (1460–1524)** discovered an oceanic route from Portugal to India; he rounded the Cape of Good Hope in Africa to arrive at **Calicut in Kerala in May 1498**.
    - His arrival marked a new chapter in India's maritime history, disrupting the peaceful trade dominated by coastal and seafaring communities from East Africa to Malaysia and the Indonesian Islands.
    - The **Zamorins of Calicut,** a major trading port, had flourishing trade over land and sea.
    - The Portuguese sought to monopolize trade by establishing strongholds in Goa, and **Cochin.**
  - **European Competition in Indian Waters:** The 17th century witnessed fierce competition among European powers, including the Portuguese, Dutch, French, and British, for dominance over Indian maritime trade.
    - The British East India Company gradually gained supremacy by securing trade privileges and leveraging naval power to dominate Indian waters.
- **Pre- Independence:**
  - **Maratha Naval Resistance:** Shivaji Maharaj built a strong navy to counter European and Mughal influence along the western coast. Coastal forts like Sindhudurg and Vijaydurg strengthened maritime defenses.
  - **Maritime India Under The British Raj:** The **Royal Indian Marine (RIM)** was formed in 1892 and later renamed Royal Indian Navy (RIN) in 1934.
    - During World Wars I and II, the RIN played a significant role in escort missions, patrolling, and combined operations in the Middle East, Burma, and the Mediterranean.
    - The British Crown formally renamed the naval force as the **Royal Indian Navy in 1934,** laying the groundwork for its post-independence transformation.
- **Post-Independence Era (1947 – Present):** With independence, the Royal Indian Navy was divided between India and Pakistan. In 1950, the prefix "Royal" was dropped, and the Indian Navy **was established with the Ashoka Lion as its** emblem.
  - The **motto *Sam no Varunah* ("Be auspicious unto us, Oh Varuna")** reflects the Navy's cultural and historical roots.
    - **Vice Admiral R.D. Katari** became the first Indian Chief of Naval Staff in 1958.
  - The Navy played a pivotal role in the 1971 India-Pakistan war. Navy Day, celebrated on **4th December since 1972,** honors the success of Operation Trident**(1971 Indo-Pak war naval actions).**
  - The Indian Navy has **three Commands**, each under the control of a **Flag Officer Commanding-in-Chief** namely**, The Western (HQ- Mumbai), Eastern (Visakhapatnam) and Southern Naval Command (Kochi).**
  - Modernization efforts have transformed the **Indian Navy into a blue-water force** with capabilities extending beyond the **Indian Ocean region.**

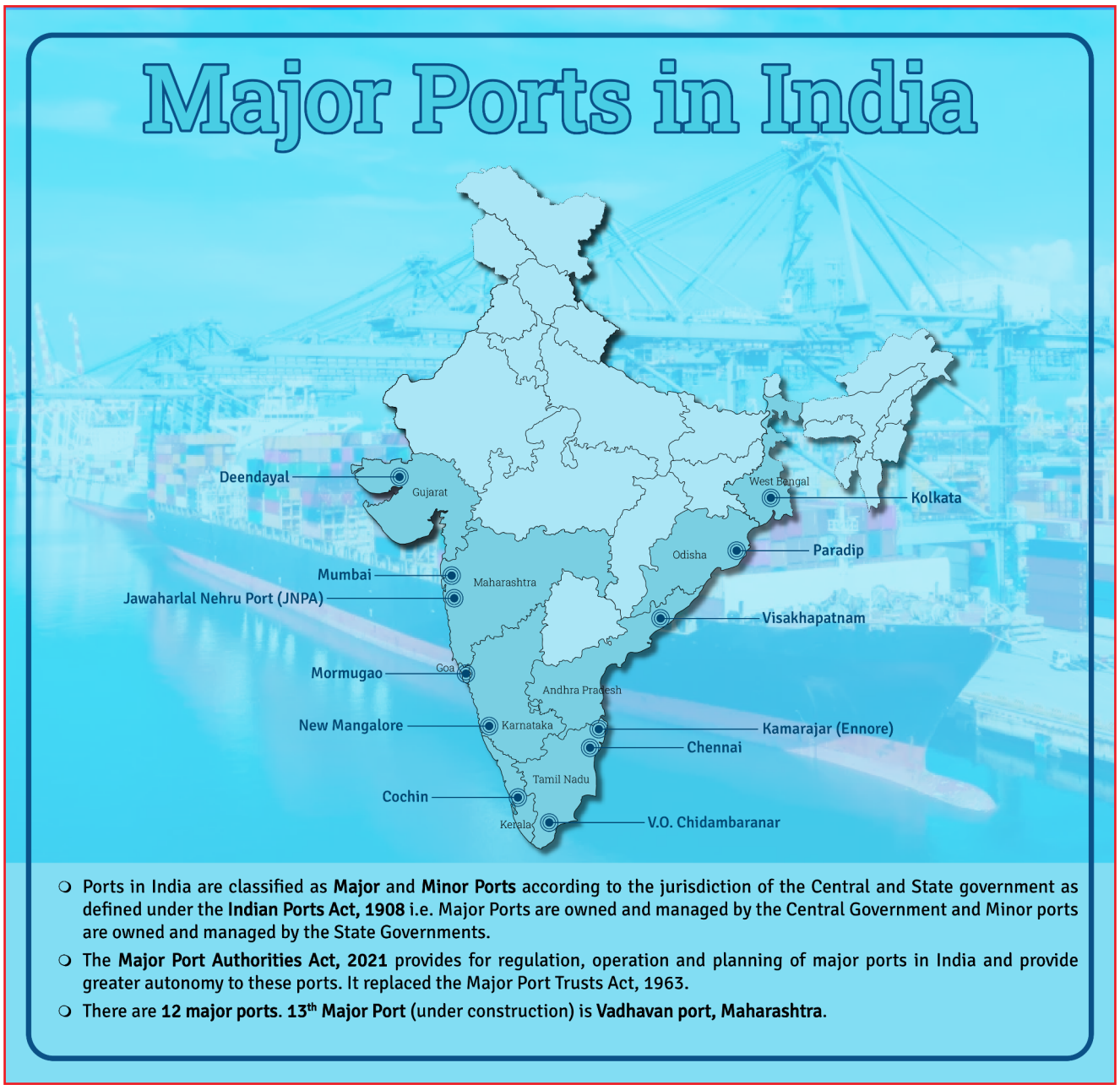
What is the Significance of India's Maritime Sector?

- **Status of India's Maritime Sector:**
  - India ranks as the **16th largest maritime** country globally.
  - India is the **world's 3rd largest ship** recycler by tonnage, holding a **30% global market share** in ship-breaking with the world's largest ship-breaking facility located in Alang, Gujarat.
- **Economic Importance:** India's maritime sector serves as the backbone of its trade and commerce, **handling around 95% of the country's trade by volume and 70% by value.**
  - Indian ports handle approximately **1,200 million tonnes of cargo annually**, underscoring the sector's economic significance..

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Note:

- According to the **World Bank's 2023 Logistic Performance Index (LPI) Report**, India ranks **22nd globally** in the "International Shipments" category, a significant rise from **44th in 2014**.
  - This improvement underscores the **performance of Indian ports, which have outperformed global peers** on operational parameters such as container turnaround time and dwell time.
- Ports support Exports-Imports, international trade, coastal shipping, and cruise shipping.
- With the **global blue economy** expected to reach **USD 6 trillion by 2030**, India's maritime sector is set to significantly contribute to the country's rise as the **world's third-largest economy**.



- Ports in India are classified as **Major** and **Minor Ports** according to the jurisdiction of the Central and State government as defined under the **Indian Ports Act, 1908** i.e. Major Ports are owned and managed by the Central Government and Minor ports are owned and managed by the State Governments.
- The **Major Port Authorities Act, 2021** provides for regulation, operation and planning of major ports in India and provide greater autonomy to these ports. It replaced the Major Port Trusts Act, 1963.
- There are **12 major ports**. **13th Major Port** (under construction) is **Vadhavan port, Maharashtra**.

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Note:

What are the Key Challenges in India's Maritime Sector?

- **Port Capacity:** India's ports have a limited capacity to handle the increasing volume of cargo.
  - The Ministry of Ports, Shipping and Waterways reported that despite having **13 major ports** and **over 200 non-major ports**, many are operating at or near full capacity, leading to congestion and delays.
- **Complex Regulations:** The maritime sector encounters challenges from overlapping regulations by bodies such as the **Directorate General of Shipping**, **Maritime States Development Council**, and **United Nations Convention on the Law of the Sea (UNCLOS)**, hindering operational efficiency..
  - Challenges include **illegal fishing, unsustainable resource exploitation**, and the **need for better regulatory implementation** to protect marine habitats and biodiversity.
- **Naval Expansion and Indigenisation:** While India aims to build a 175-ship navy by 2035, the **pace of construction and budget constraints** lag behind strategic needs, especially compared to China's rapid shipbuilding.
  - India faces a shortfall in submarines, with **delays in projects like Project 75-I** and the need for indigenous nuclear attack submarines.
- **Coastal Security:** India's vast and porous coastline is vulnerable to illegal landings of arms and explosives by terror groups and drug syndicates.
  - **Notable cases include the 1993 Mumbai blasts** and the **26/11 Mumbai terror attack,** highlighting significant security gaps.

India's Initiatives Related to Maritime Sector:

- Ship Repair and Recycling Mission
- International Maritime Dispute Resolution Centre
- Security and Growth for All in the Region (SAGAR)
- Sagar Mala Program
- Maritime India Vision 2030
- Maritime Amrit Kaal Vision 2047

PSC Suggests Reforms in MGNREGA Scheme

Why in News?

Recently, the **Parliamentary Standing Committee (PSC) on Rural Development and Panchayati Raj** has highlighted the challenges that wages under MGNREGS have not kept pace with **inflation** and recommended certain reforms in the **Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS).**

Note: Inflation refers to a **decrease in the purchasing power of money**, which is evident through a **general rise in the prices of goods and services** within an economy.

What are the Challenges in Implementation of MGNREGS?

- **Wages Not aligned with Inflation**: MGNREGA wage rates **haven't** kept up with **inflation** which reduces rural workers' purchasing power and **discourages** them from **completing the full 100 workdays.**
  - Additionally, the **100-day wage guarantee often falls short**, especially during **natural calamities and post-pandemic recovery** which **restricts its potential** to provide **long-term livelihood security** to rural households.
- **Revision of permissible works:** The MGNREGA work list often **fails to address rural needs** like flood protection and land erosion management.
  - Delays in revising permissible works based on local needs limit the scheme's effectiveness in addressing regional challenges.
- **Delayed Payment of Wages**: Delays in payment are often due to issues with **Aadhaar-based payment systems (ABPS), inactive Aadhaar details, or frozen bank accounts** undermining the scheme's intended impact.
  - Potential **technical glitches** and infrastructure issues leave vulnerable workers **unpaid.**
- **Delay in Compensation:** In case of delay in payment of wages, beneficiaries are entitled to **compensation**

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Note:

at the rate of **0.05% of unpaid wages per day** for the duration of delay.

- However, payment of delay compensation is **not adhered** to in most places in the country.

- **Unemployment Allowance:** Under MGNREGA, persons who apply for work but are not provided within 15 days are entitled to a **daily unemployment allowance**.
  - The unemployment allowance is **rarely paid**, and the amounts provided are **minimal.**
- **Weak Social Audits**: Under MGNREGA, the Gram Sabha must conduct **regular social audits** of all projects taken up within the Gram Panchayat.
  - However, in **2020-21**, **only 29,611 Gram Panchayats were audited** at least once showing weak social audits mechanisms.
- **Lack of Ombudsman**: Out of **715 possible appointments**, so far **only 263 ombudsmen** have been appointed.

What are the Various Recommendations Suggested by the PSC for Reforming MGNREGS?

- **Revision of Wage Rates**: Wage rates should be linked to a **suitable inflation index** commensurate with the existing inflation to reflect the **rising cost of living** in rural areas.
  - **Update the base year 2009-2010** and rates to align with **current inflation trends** and rural economic conditions.
- **Increase Days of Work:** The committee also recommended an **increase** in the number of days of work sought under MGNREGS from **100 to 150 days.**
- **Payment Mechanisms**: It recommended maintaining **alternative payment systems** alongside APBS to ensure uninterrupted wage disbursements.
  - The panel recommended a **streamlined payment process** to ensure timely wage disbursement, aiming to reduce bureaucratic hurdles.
- **National Mobile Monitoring System (NMMS)**: The committee stressed the need for **awareness campaigns and training programs** to help beneficiaries use **NMMS** effectively.
  - It also recommended retaining **alternative attendance methods** to avoid excluding workers due to technological issues.
  - NMMS **tracks attendance and work progress** under MGNREGS to enhance transparency and accountability.
- **Sufficient Fund Allocation for MGNREGS**: The committee emphasized the need for the government to ensure **sufficient financial allocations** for MGNREGS to ensure its effectiveness in providing livelihood security to rural households.

Note:

- In the financial year **2024-25**, the average MGNREGA wage increased across India by **Rs 28 per day only.**
  - The MGNREGA wage increase for the financial year **2023-24** ranged from **2%-10%.**
- The Government of India notifies the **wage rate under MGNREGA** using **Consumer Price Index for Agricultural Labour (CPI-AL).**
- **Dr. Anoop Satpathy committee (2019)** to review and recommend methodology for fixation of **National Minimum Wage (NMW)** had recommended that wages under MGNREGA should be **Rs 375 a day.**
- **Dr. Nagesh Singh Committee (2017)** recommended **indexing MGNREGA** wages to **Consumer Price Index (CPI) Rural** as opposed to CPI-Agricultural Labour.

What is the Parliamentary Standing Committee on Rural Development & Panchayati Raj?

- **About:** It was created for the first time on **5th August, 2004** under **Rule 331C** of the **Rules of Procedure and Conduct of Business in Lok Sabha** to give focussed attention to the issues related to rural development.
- **Jurisdiction:** The following **Ministries/Departments** are under the jurisdiction of the Committee:
  - Ministry of Rural Development
  - Ministry of Panchayati Raj
- **Composition:** The Committee has **31 members: 21 from Lok Sabha**, nominated by the Speaker, and **10 from Rajya Sabha**, nominated by the Chairman.
  - A **Minister is not nominated** as a member of the Committee.

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Note:

- The **Chairman** of the Committee is appointed by the **Speaker** from amongst the members of the Committee from **Lok Sabha.**

- **Tenure of Members:** The term of office of the members of the Committee **does not exceed one year**.
- **Functions:**
  - Considers **Demands for Grants** and reports to the Houses.
  - **Examines Bills** referred by the Speaker or Chairman and reports on them.
  - **Reviews Annual Reports** of Ministries/Departments and reports.
  - **Considers national policy documents** referred by the Speaker or Chairman and reports.

MGNREGS

- **About:** Launched in **2005** by the **Ministry of Rural Development**, MGNREGS is one of the largest **work guarantee programs**, providing **100 days of unskilled manual work** at minimum wage for **rural households** each year.
- **Implementation:** The **Ministry of Rural Development** oversees the scheme's implementation with state governments.
- **Major Features:**
  - **Legal Guarantee:** MGNREGA's key feature is its legal guarantee, ensuring rural adults can **request work and receive it within 15 days.**
  - **Unemployment Allowance:** If the work is not provided within 15 days, an unemployment allowance **must be provided.**
  - **Women Focussed:** The scheme prioritizes women, ensuring that **at least one-third** of beneficiaries are women who have registered and requested work.
  - **Social Audit: Section 17** of the Mahatma Gandhi NREGA, 2005 mandates the Gram Sabha to **conduct social audits of scheme works**.
- **Cost Sharing:** Financial assistance shall be provided by Central and State Governments in the ratio of **90:10 respectively**.
- **Ban on Contractors:** Engagement of **contractors** and use of **labour displacing machines** are **banned.**

Oilfields Amendment Bill 2024

Why in News?

Recently, the **Oilfields (Regulation and Development) Amendment Bill, 2024** was passed by the **Rajya Sabha**, aiming to encourage domestic production of petroleum and mineral oils while attracting private investment.

- This bill seeks to **amend the existing Oilfields Act of 1948** by clearly delineating the governance of oil production from mining activities.

What are the Key Provisions of the Oilfields Amendment Bill?

- **Definition of Mineral Oil:** The Bill broadens the definition of **mineral oils** to include naturally occurring **hydrocarbons** (such as **petroleum and natural gas**), as well as **coal bed methane and shale gas/oil.**
  - The definition specifically excludes **coal, lignite, and helium,** likely due to their regulation under the **Mines and Minerals (Development and Regulation) Act, 1957.**
- **Petroleum Leases:** The Bill replaces the **term "mining leases"** with **"petroleum leases"**, which will govern activities like exploration, production, and disposal of mineral oils.
  - **Existing mining leases** granted under the Oilfields Act of 1948 **remain valid** and will not be altered.
- **Penalties for Violations:** Under the **Oilfields Act of 1948,** violations can result in up to six months of imprisonment, a fine of **Rs 1,000, or both.**
  - The new Bill replaces criminal penalties for violations of the Oilfields Act with financial penalties, increasing the maximum fine to Rs 25 lakh, with additional daily fines of up to Rs 10 lakh for ongoing violations.
- **Encouragement of Private Investment:** The Bill includes **measures to attract private investment** in petroleum production, clarifying that existing mining leases will remain valid without disadvantage to lessees.
- **Rule-Making Powers of the Central Government:** The Bill retains the central government's power to make rules on various aspects, including the **granting and**

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Note:

regulating of leases, setting terms and conditions(such as area and duration of leases), **conservation and development of mineral oils,** and **methods for producing oil along with the collection of royalties.**

- Additionally, the Bill expands the central government's authority to include the merger of petroleum leases, sharing of facilities, lessees' obligations to protect the environment and reduce emissions, and alternative dispute resolution mechanisms for petroleum lease grants.

- **Adjudication of penalties:** The central government will appoint an **officer of Joint Secretary rank or higher** to adjudicate penalties.
  - **Appeals against** the Adjudicating Authority's decisions will go to the **Appellate Tribunal** specified in the **Petroleum and Natural Gas Board Regulatory Board(PNGRB) Act, 2006.**
  - According to the PNGRB Act, 2006, appeals against the decisions of the **PNGRB are to be made before the Appellate Tribunal for Electricity,** which is constituted under the **Electricity Act, 2003.**

Petroleum and Natural Gas Regulatory Board

- The **PNGRB** was established under the Petroleum and Natural Gas Regulatory Board Act of 2006.
- **Nodal MInistry: Ministry of Petroleum and Natural Gas**
- Its objective is to protect consumer interests, regulate petroleum-related activities, and promote competitive markets.
- The **PNGRB** authorizes **City Gas Distribution (CGD) networks**, natural gas and petroleum product pipelines, sets tariffs, and establishes technical and safety standards.

What are the Concerns Regarding the Oilfields Amendment Bill, 2024?

- **Impact on State Rights:** The Bill's shift from **mining leases to petroleum leases** raises concerns that states may lose their taxation rights under **Entry 50 of the State List.**
  - A **Supreme Court of India** judgment in ***Mineral Area Development Authority & Anr v. M/S Steel Authority of India & Anr 2024*** confirmed that **states have exclusive power to tax mining activities under Entry 50 of the State List** in the Indian Constitution.
  - Critics argue that **Entry 53 of the Union List,** which grants the central government authority **over oilfields and mineral oils,** may increase central control, raising concerns about **federalism and potential disputes over jurisdiction and revenue.**
- **Environmental Concerns:** Increased involvement of private players may lead to weaker environmental safeguards.
  - There is apprehension that private companies **may prioritize profits over environmental protection**, potentially increasing emissions and ecological damage.
- **Penalties for Non-Compliance:** Replacing criminal penalties with fines raises accountability concerns, potentially reducing deterrence and compliance with safety and environmental standards.
- **Private Investment vs. Public Sector Priority:** Opposition parties argue that public-sector enterprises like the **Oil and Natural Gas Corporation (ONGC)** should be prioritized over private entities for resource exploration.
  - Critics fear private investment may weaken public-sector dominance and **prioritize profit over community welfare and sustainability.**

One Nation One Election 'The Constitution 129th Amendment Bill 2024'

Why in News?

Recently, the government initiated steps towards implementing "One Nation, One Election" by introducing two **Constitution Amendment Bills** namely **One Nation One Election–'The Constitution 129th Amendment Bill 2024'** and the **'The Union Territories Laws Amendment Bill 2024** in **Lok Sabha.**

- Simultaneous elections in India, where both Lok Sabha and state assembly elections were held together, took place from 1951 to 1967.

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What are the Key Features of the Bills?

- **One Nation, One Election 'The Constitution 129th Amendment Bill 2024':** The bill proposes **adding Article 82A(1-6) to the Constitution** to align the terms of the Lok Sabha and State Assemblies, as recommended by the **committee headed by former President Ram Nath Kovind.**
  - **Article 82 (1-6):**
    - **82A (1)** provides for the **timeline** for the **President** to bring into force the proposed changes on the **date of the first sitting** of the Lok Sabha after a general election, designating this as the **"appointed date."**
    - **82(2)** states that the **terms** of all **state Assemblies elected** after the appointed date and before the Lok Sabha's full term ends **will conclude** with the Lok Sabha's term.
    - **Article 82A(3)** states that the **Election Commission of India (ECI)** shall conduct general elections to the House of the People and all Legislative Assemblies **simultaneously**.
    - **Article 82 A(4)** defines **simultaneous elections** as **"general elections** held for constituting the House of the People and all the Legislative Assemblies together".
    - **Article 82A(5)** gives the **ECI the option of not holding** any particular Assembly election along with the election to Lok Sabha.
      - The **ECI can advise the President** to issue an order allowing **elections for a Legislative Assembly to be held at a later date.**
    - **Article 82A(6)** states that if an **Assembly election is deferred**, the **full term** of that Assembly **will also end** with the full term of the Lok Sabha elected in the general election.
  - **Amendment to Article 83 and 172:**
    - The bill states that if the **Lok Sabha** is dissolved before the end of its full term, the **next Lok Sabha will only be for the unexpired term** — "the period between its date of dissolution and five years from the date of the first meeting".
      - This means that **Bills pending in the House will expire**, as it happens even when the House has functioned for a full term.
    - For state assemblies, amendments proposed for Article 172, which governs the duration of state legislatures.
      - If a state assembly is **dissolved** before its term ends, **elections would be held for the remaining term of the previous assembly**.
  - **Amendment to Article 372:**
    - The Bill proposes **amending Article 372** to include **"conduct of simultaneous elections"** after **"delimitation of constituencies,"** expanding Parliament's power over state legislature elections.
      - The bill excluded the election of Local bodies and Municipalities.
- **The Union Territories Laws Amendment Bill 2024:**
  - The Bill aims to **amend Section 5** of the **Government of Union Territories Act 1962**, **Section 5** of the **Government of National Capital Territory of Delhi Act 1991**, and **Section 17** of the **Jammu and Kashmir Reorganisation Act 2019** to facilitate simultaneous elections with the Lok Sabha and State Legislative Assemblies.

What are the Constitutional Provisions Related to Elections in India?

- **Part XV (Article 324-329):** It deals with elections and establishes a commission for these matters.
- **Article 324:** Empowers the ECI to supervise, direct, and control the entire process of elections to the Parliament and State Legislatures.
- **Article 325:** Provides for the establishment of a single electoral roll for all elections to the Lok Sabha and State Assemblies.
- **Article 326:** Specifies that elections to the Lok Sabha and State Assemblies shall be based on adult suffrage.
- **Articles 82 and 170:** Mandate the delimitation of constituencies after each census to ensure fair representation.
- **Article 172:** States that every Legislative Assembly shall have a term of five years unless dissolved earlier.

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Note:

High-Level Committee Report on Simultaneous Elections

- **Formation and Purpose of the Committee:**
  - The **High-Level Committee**, chaired by former **President Ram Nath Kovind,** was formed by the central government in **September 2023**.
  - The committee was tasked with examining the feasibility of conducting **simultaneous elections for the Lok Sabha**, state assemblies, and local bodies.
- **Rationale for Simultaneous Elections:**
  - The committee noted that **frequent elections create uncertainty**, while simultaneous elections would ensure stable governance and reduce disruptions.
    - Additionally, holding elections simultaneously is **expected to lower costs** and **increase voter participation.**
- **Electoral Roll Management:**
  - To streamline the electoral process, the committee suggested adopting a single electoral roll prepared by the **Election Commission of India (ECI)** in consultation with **State Election Commissions (SECs).**
    - This would minimize duplication and improve efficiency across multiple agencies involved in election management.
- **Logistical Considerations:**
  - The committee emphasized that both the ECI and SECs must undertake detailed planning and estimation for logistical arrangements to ensure smooth execution during simultaneous elections.

What are the Challenges Associated with Implementing Simultaneous Elections?

- **Infrastructure Development:** Ensuring that the **technological infrastructure is robust** enough to handle the complexities of simultaneous elections is critical**.**
  - This includes the effective deployment and management of **Electronic Voting Machines (EVMs)** and **Voter Verifiable Paper Audit Trails (VVPATs)**.
  - In the **2024 general elections,** approximately **1.7 million Control Units** and 1**.8 million VVPAT systems were deployed** across 1.05 million polling stations nationwide.
- **Legal Challenges:** Any **amendments and the process of implementing** simultaneous elections may face **legal challenges** and require judicial scrutiny to ensure compliance with constitutional provisions.
- **Regional Disparities:** Some political parties express **concerns that simultaneous elections may marginalise** regional voices and issues during national campaigns.
  - Ensuring that local issues are not overshadowed by national narratives is crucial for maintaining diverse representation.
- **Administrative Challenges:** Organizing simultaneous elections across states poses significant logistical challenges, including **managing electoral rolls and ensuring security**.
  - A comprehensive voter **education campaign** will be necessary to inform citizens about the new electoral process and its implications.

What Strategies can be Employed to Facilitate the Transition to Simultaneous Elections?

- **Legal Clarity:** Establish **clear instructions** for conducting simultaneous elections, detailing the **schedules and procedures** for **voter registration**.
  - Ensure that **necessary constitutional amendments** are made to facilitate the synchronization of elections **across all levels of government.**
- **Strengthening Electoral Infrastructure:** Develop a **unified electoral roll system** that serves all three tiers of government—Lok Sabha, State Assemblies, and local bodies—to reduce duplication and errors, as **recommended by the Kovind Committee**.
  - **Utilize technology** for efficient management of electoral processes, including voter verification and results tabulation.
  - **Election Commission's Recommendations (2016)** suggested changes to enhance the efficiency of the electoral process, including the use of technology for voter registration and electronic voting machines.
- **Public Awareness Campaigns:** Initiate nationwide campaigns to inform voters about the **advantages of simultaneous elections** and its impact on their voting experience.

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Note:

- **Engage NGOs and community organizations** to disseminate information and gather public feedback on the proposed changes.

➢ **Capacity Building: Conduct training sessions for election officials** on new technologies and processes associated with simultaneous elections to ensure smooth implementation.

Reimposition of Protected Area Regime

Why in News?

The Union Home Ministry has reimposed the **Protected Area Regime (PAR) in Manipur, Mizoram, and Nagaland** due to rising security concerns **over foreign influx from neighboring countries.**

➢ The decision highlights the government's renewed focus on **monitoring foreign movements** and addressing security issues in these sensitive regions.

What is the Protected Area Regime?

➢ **About:** The PAR is a set of regulations established under the **Foreigners (Protected Areas) Order, 1958,** which is aimed at **regulating foreign visitors to areas that are considered strategically important** or vulnerable to external threats, particularly in the **northeastern states** and other border regions of India.

➢ **Key Features of the PAR:**

- **Restricted Access:** Foreigners are not allowed to visit areas under the PAR without prior government approval.
  - To enter these areas, they must apply for and obtain a **Protected Area Permit (PAP),** which allows authorities to monitor the movement of foreign nationals in sensitive regions.
  - The areas covered by the PAR are deemed sensitive due to their proximity to international borders or because of ethnic tensions, insurgency, or political instability.
- **Relaxations and Reimposition:** In the past, there have been temporary relaxations to **encourage tourism in some regions,** like in Manipur, Mizoram, and Nagaland, where the PAR was relaxed in 2010 for promoting tourism.
  - However, such relaxations were reversed when security concerns arose, as seen with the recent reimposition of the PAR in these states.

Foreigners (Protected Areas) Order, 1958

➢ The Foreigners (Protected Areas) Order, 1958, issued under the **Foreigners Act, 1946,** is a key regulatory framework designed to **control the movement of foreigners in sensitive regions of India.**

➢ It defines the **'Inner Line',** a boundary from Jammu and Kashmir to Mizoram, beyond which foreign travelers are required to obtain a special permit.

- The regions located between the **Inner Line and the International Border of a state are known as Protected Areas.**
  - Foreigners can enter these areas only with a PAP. Examples of Protected Areas include the whole of Arunachal Pradesh, Manipur, Mizoram, Nagaland, and Sikkim (which is partly in Protected Areas and partly in Restricted Areas).
    - Additionally, parts of Himachal Pradesh, Jammu & Kashmir, Rajasthan, and Uttarakhand are designated as Protected Areas.
- The **areas that lie between the Inner Line and the territories occupied by indigenous tribes are known as Restricted Areas.** Entry into these regions is prohibited without prior permission **(Restricted Area Permit).**
  - Examples of Restricted Areas include the entire Andaman and Nicobar Islands Union Territory and a part of the state of Sikkim.

Jharkhand HC Stays on Private Sector Job Quota Law

Why in News?

The **Jharkhand High Court** has stayed the implementation of the **Jharkhand State Employment of Local Candidates in Private Sector Company Act, 2021**, which mandated a **75% reservation for local candidates in private-sector jobs** with salaries up to Rs 40,000.

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Note:

- This law, introduced to boost employment for locals but faced criticism for violating constitutional principles.

What is the Jharkhand HC Ruling on Private Sector Job Quota Law?

- **Petition by Small-Scale Industries:** The Jharkhand Small Scale Industries Association (JSSIA) filed a petition challenging the **75% local quota law,** arguing that it violates the **principle of equality, and the freedom to conduct business.**
  - The advocates representing JSSIA contended that the **Act unfairly creates a division between local and non-local candidates,** restricting employers' ability to hire freely.
  - The petition referenced the Punjab and Haryana High Court quashed the Haryana State Employment of Local Candidates Act, 2020, which was struck down by the Punjab and Haryana High Court for **violating constitutional rights.**
- **Jharkhand HC Ruling:** The Jharkhand HC stayed the **Jharkhand State Employment of Local Candidates in Private Sector Company Act, 2021** implementation.
  - The court found merit in the JSSIA's argument that the law violates Article 14 Right to Equality, by discriminating against non-local candidates. And the Article 19(1)(g) freedom to conduct business, by restricting private companies' hiring choices.

Similar Domicile Based Reservation Laws in Other States

- **Andhra Pradesh:** Passed the Andhra Pradesh Employment of Local Candidates in Industries/ Factories Act, 2019 (reserves 75% of jobs in private industries for local residents).
  - The Andhra Pradesh High Court noted the law **"may be unconstitutional"** but has yet to deliver a final judgment.
- **Karnataka:** Approved the Karnataka State Employment of Local Candidates in Industries, Factories and Other Establishments Bill, 2024, which proposes 50% reservation for locals in management roles and 75% in non-management positions across various sectors.
  - The bill has sparked uproar, with concerns raised about its impact on labor mobility and business operations.

Why do States Introduce Domicile Based Reservations in Private Employment?

- **High Unemployment Among Locals:** In many states, locals face significant job shortages, especially for **low and semi-skilled positions.**
  - Local quota laws are seen as a way to ensure residents have better access to employment opportunities.
- **Migrant Workers Taking Jobs:** There is a growing perception that migrant workers from other states are taking away jobs meant for locals.
  - This often **fuels resentment,** especially in more industrialized and economically advanced regions.
- **State Employment Prioritisation:** The private sector, as a **major job creator,** can support **social justice by prioritizing locals for jobs,** especially since it benefits from government incentives like **tax concessions and cheaper loans**, justifying affirmative policies.
- **Political Pressure and Vote Banks:** State governments face pressure from local populations to prioritise their interests. Introducing reservation laws can be a way to **appease voter sentiment** and **secure political support.**
- **Skill Mismatch and Education Levels:** Locals may **lack the skills for high-paying jobs,** limiting their opportunities.
  - Quotas for lower-paying roles are introduced to address this skill mismatch and provide more employment for less-educated populations.
- **Retention of Talent:** By ensuring that local residents have access to jobs, states can **retain talent within the region.** This is particularly important in areas experiencing brain drain, where skilled workers leave for better opportunities elsewhere.

What is Domicile Reservation?

- **Domicile Reservation:** This system reserves benefits based on where a person resides. States may allocate certain seats for residents, prioritizing locals in areas like education and public jobs.
  - **"Place of birth" and "domicile" are distinct concepts,** with domicile referring to a person's residence rather than their birthplace.

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Note:

- **Constitutional Provisions:** Article 16(3), allows residence-based criteria for government appointments within a state or union territory, as determined by Parliament.
  - Article 371D creates **local cadres in Andhra Pradesh and Telangana,** ensuring local representation and opportunities in government jobs.
  - Article 15 only prohibits discrimination based on birthplace, not residence.
- **Landmark Judgments:**
  - ***DP Joshi vs Madhya Bharat, 1955:*** Supreme Court (SC) of India upheld the validity of domicile-based reservations, stating that it is a legitimate state interest to benefit its own residents.
  - ***Dr. Pradeep Jain v. Union of India, 1984*:** The SC again upheld domicile-based reservation, emphasizing that it falls within the scope of reasonable classification under Article 14, as long as it does **not violate the principles of equality or hamper the rights of others.**
- **Problems with Domicile Reservation:** Domicile-based quotas can **compromise merit-based selection,** potentially leading to **underperformance in critical sectors.**
  - Emphasis on regional identity may **foster division and exacerbate local tensions,** undermining national integration.
  - Migrants who may have contributed significantly to the economy and society **may be unfairly denied opportunities.**
  - The criteria for domicile may be manipulated, **leading to exploitation and favoritism** in the allocation of reserved seats or positions.
  - Continuous reliance on reservations may **weaken efforts to improve the quality of education and skill development,** which are more sustainable solutions for empowerment.
  - Domicile reservations may fail to **address intra-regional disparities,** where **wealthier or more educated local residents benefit over poorer,** marginalized groups within the same region.

Restructuring of NTA

Why in News?

A government-appointed panel, led by former ISRO chairman K. Radhakrishnan, has recommended **extensive reforms** in the National Testing Agency (NTA).

What are the Key Recommendations for Restructuring the NTA?

- **Empowered Governance:** Create an empowered governing body with three sub-committees on **audit, ethics, and stakeholder relations**.
  - The **Director-General (DG)** should be at least of **additional secretary rank** and hold a dedicated leadership position.
- **'Digi Exam' System:** It suggests launching a **'Digi Exam'** system to prevent **impersonation.**
  - The process uses **Aadhaar, biometrics, and AI analytics** to authenticate candidates' identities **at various stages** of the exam process.
- **Mobile Test Centers (MTCs):** Equip buses with **workstations, internet connectivity, and power supply** to reach remote locations like the **Northeast, Himalayan states, and islands.**
- **Hybrid Testing Methods: Encrypted question papers** are transmitted to the centralised servers of testing centers, printed securely, using **high-speed printers** for ensuring confidentiality.
- **Printing of Question Papers:** The printing press should undergo **pre-approval verification** and continuous monitoring throughout printing, packaging, and transportation.
  - Question papers and OMR sheets should be **uniquely coded and audited.**
- **Testing Innovations:** The panel recommended **three policy innovations.**
  - **Multi-Session Testing:** For large-scale exams, particularly when participant numbers **exceed two lakh.**
  - **Multi-Stage Testing:** Test to be conducted in **phases**, with **each stage** focusing on a **specific aspect** of the candidate's knowledge or skills.

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Note:

- **Cluster Approach:** Streamlining the wide range of subject streams for **CUET** admission into more **focused clusters of related subjects.**

- **Test Centre Allocation:** The panel proposed allocating testing centers **near candidates' residences** and establishing secure centers in each district.
  - The National Testing Agency should aim to **set up 1,000 secure centers**, prioritizing government institutions.
- **Permanent Staffing:** It recommended NTA to **hire permanent staff.**
- **Collaboration:** The NTA should collaborate with **Test Indenting Agencies**, including the **University Grants Commission (UGC) and Council of Scientific and Industrial Research (CSIR)**, throughout the testing process.

What is the National Testing Agency?

- **About:** NTA was established in **2017** as a **Society** registered under the **Indian Societies Registration Act, of 1860.**
- **Objective:** It is a **premier, specialist, autonomous and self-sustained** testing organization to conduct entrance examinations for admission/fellowship in **higher educational institutions.** E.g., JEE (Main), CMAT, UGC - NET etc.
- **Governance:** NTA is chaired by an **eminent educationist** appointed by the **Ministry of Education.**
  - The Director General is assisted by **9 verticals headed by academicians/ experts.**
  - The **CEO** is the Director General appointed by the Government.

Removal of Vice-President

Why in News?

Recently, the Opposition parties have decided to submit a **notice (under Article 67(b))** to move a **motion of no-confidence** against the **Vice-President**, who also serves as the Chairman of the **Rajya Sabha.**

- The motion of no-confidence with respect to the Rajya Sabha is an informal term and is not mentioned in the Constitution.

No-Confidence Motion

- A No-Confidence Motion is introduced in the Lok Sabha **(and not in the Rajya Sabha)** to assess the government's support.
  - It requires backing from 50 members to be considered and **if passed, the government must resign.**
- These motions are crucial political events, typically arising when the government is perceived to be losing majority support.

What are the Constitutional Provisions Regarding the Vice-President?

- **Vice President:**
  - **Article 63** of the **Constitution of India** states that **there shall be a Vice-President** of India.
  - **Article 64** states that the Vice President also serves as the **ex-officio Chairperson of the Rajya Sabha** and **cannot hold any other office of profit.**
  - When the Vice President assumes the **role or duties of the President** under **Article 65** of the Constitution of India, they will **not perform the responsibilities of the Chairman of the Rajya Sabha** and will not receive the salary or allowances designated for the Chairman under **Article 97**.
    - **Resignation** from the office requires **submitting a letter to the President** of India, effective upon acceptance.
- **Qualification for the Office: Article 66** specifies the qualifications required for a person to be eligible for the office of Vice President.
  - Must be an Indian citizen.
  - Must be at least 35 years old.
  - Must be eligible for election as a member of the Rajya Sabha.
  - Must not hold any office of profit under the Union or state governments, local authorities, or any other public authorities.
- **Election:**
  - **Vacancy: Article 68** of the Constitution mandates that the election to fill the Vice President's **vacancy** due to term expiration must be completed **before the current term ends**.

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- **Article 324** of the Constitution, grants the Election Commission of India the authority to oversee, direct, and control the election process for the Vice President.

❍ **Participants: Article 66** states that the Vice President is elected by an **Electoral College**, which consists of **elected and nominated members from both Houses of Parliament.**

- The election follows a **system of proportional representation using a single transferable vote,** and the voting is conducted by secret ballot.

➢ **Oath:**

❍ According to **Article 69**, the Vice President must take an oath or affirmation before the President, or an appointed representative, before assuming office.

➢ **Term of the Office:**

❍ **Article 67** of the Constitution of India states that the Vice President serves a **five-year term** from the date they assume office.

❍ The Vice President holds the second highest constitutional position and will remain in office **beyond this term until their successor takes over**.

➢ **Removal:**

❍ **Article 67(b)** states that the Vice President may be removed if an **effective majority "all the then members of Rajya Sabha"** passes a resolution for his removal, which must then be **"agreed to"** by the Lok Sabha, with at least **14 days' notice given** before moving the resolution.

- Upon the expiry of the **14-day period**, Rajya Sabha will take up the resolution for discussion, following the procedure outlined in Article 67(b).

❍ There are **no precedents** to indicate if the **resolution can be considered** in the next session.

❍ **Article 92** of the Constitution explicitly bars the Chairman or Deputy Chairman from presiding over proceedings while a resolution for their removal is under consideration.

➢ **Power and Functions:**

❍ The Chairman of the Rajya Sabha can adjourn the House or suspend its sitting if there is no quorum.

❍ The **10th Schedule** of the Constitution authorizes the Chairman to decide on the disqualification of a Rajya Sabha member due to defection.

❍ The Chairman's approval is required to raise a question of breach of privilege in the House.

❍ **Parliamentary Committees**, whether established by the Chairman or the House, operate **under the Chairman's guidance**.

❍ The Chairman appoints members to various Standing Committees and **Department-related Parliamentary Committees**. He also chairs the Business Advisory Committee, the Rules Committee, and the General Purposes Committee.

❍ The **Chairman is responsible for interpreting the Constitution** and rules related to the House, and no one can dispute the Chairman's interpretation.

Note: The original Constitution provided that the **Vice-President would be elected by the two Houses of Parliament assembled at a joint meeting**.

➢ This cumbersome procedure was done away by the **11th Constitutional Amendment Act of 1961.**

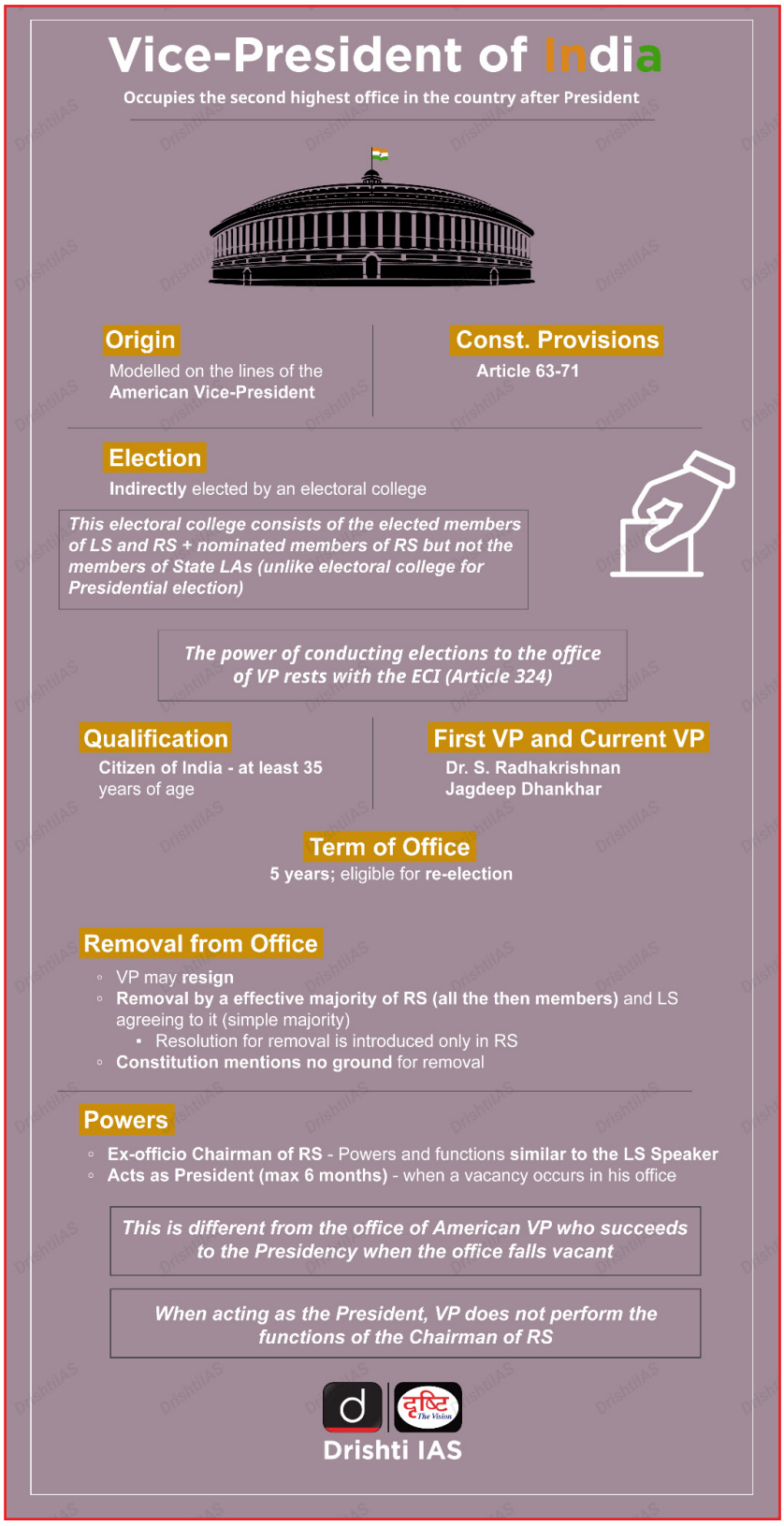
Differences Between the Vice Presidents of India and the US

India	US
➢ Serves a **term of five years,** eligible for reelection.	➢ Serves a term of **four years**, eligible for reelection.
➢ Acts as the **ex-officio Chairman of the Rajya Sabha** (Council of States).	➢ Serves as **President of the Senate but only votes in case of a tie**.
➢ Assumes presidency in case of vacancy due to the president's resignation, impeachment or death. ➢ VP serves as an acting President until the new President assumes charge.	➢ Succeeds to the presidency when it falls vacant , and remains President for the unexpired term of his predecessor.

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Note:



Applying POSH Act in Political Parties

Why in News?

Recently, a **Public Interest Litigation (PIL)** has been heard by the Supreme Court regarding applicability of ***Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013*** **(POSH Act)** in political parties.

- This issue has remained an area of ambiguity, especially considering the peculiar structure of political organisations in India.

Why is there a Need to Bring Political Parties under the POSH Act?

- **Harassment of Women Parliamentarians:** A 2016 **Inter-Parliamentary Union (IPU)** survey found that **82% of women parliamentarians** globally face psychological violence, including sexist remarks and threats.
  - In regions like **Africa, 40% of parliamentarians** experiencing sexual harassment.
- **Ensuring Safe Work Environment:** Despite growing participation, women hold only **14.4% of Lok Sabha seats and less than 10% in state legislatures**, reflecting systemic barriers.
  - Ensuring safety in political parties can encourage greater representation and leadership roles for women.
- **Legal and Constitutional Mandate:** **Articles 14** **and** **15** of the Constitution guarantee **equality and non-discrimination** and POSH Act's

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Note:

broad definition of "workplace" and "employee" can cover party workers, volunteers, and field operatives, ensuring their rights are protected.

- **Lack of Internal Mechanisms:** Political parties **often lack proper grievance redressal systems**.
  - Internal committees are not mandated to include external members or meet impartiality standards as required under the POSH Act, leading to underreporting of harassment cases.
- **Electoral and Institutional Reforms:** Including political parties under the POSH Act aligns with the Election Commission's emphasis on **transparency and accountability** in party operations, **ensuring internal democracy and gender justice** in influential institutions.
- **Global Best Practices:** Countries like Sweden and Norway have **institutionalized gender-sensitive practices in political organizations**, serving as models for India.
  - The **UK Parliament's Independent Complaints and Grievance Policy (ICGP)**, established in 2017, aims to **tackle bullying and sexual harassment** in UK Parliament**.**

What is the POSH Act?

- **About:**
  - It was enacted by the Government of India to **address the issue of sexual harassment in workplaces** and ensure a **safe and conducive environment for women.**
- **Background:**
  - The genesis of the PoSH Act lies in the **landmark 1997 Supreme Court judgmen**t in ***Vishakha and Others v. State of Rajasthan***, which formulated the **Vishakha Guidelines** to safeguard women from sexual harassment.
  - These guidelines, based on constitutional principles (such as **Article 15,** which prohibits discrimination on grounds of sex) and **international conventions** (like the **Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)**, which India ratified in 1993, served as the foundation for the Act.
- **Sexual Harassment:**
  - The Act **defines sexual harassment** in broad terms, including unwelcome physical contact, sexual advances, requests for sexual favors, sexually colored remarks, showing pornography, and any other unwelcome conduct of a sexual nature, whether physical, verbal, or non-verbal.
- **Definition of Workplace:**
  - **Section 3(1)** of the POSH Act states that **"No woman shall be subjected to sexual harassment at any workplace."** The definition of "workplace" is broad and includes:
    - Public sector organizations established or financed by the government.
    - Private sector organizations.
    - Locations visited by employees during the course of employment.
- **Key Provisions:**
  - **Prevention and Prohibition:** The Act places a **legal obligation on employers** to prevent and prohibit sexual harassment in the workplace.
  - **Internal Complaints Committee (ICC):** Employers are required to **constitute an ICC at each workplace with 10 or more employees** to receive and address complaints of sexual harassment.
    - The **Complaints Committees** have the powers of **civil courts** for gathering evidence.
- An appeal from the ICC can be filed in the **industrial tribunal** or the **labor court.**
    - In organizations with less than 10 employees or specific circumstances lacking an Internal Committee (IC), a **Local Committee (LC)** is constituted by the District Officer to receive and address complaints.
  - **Duties of Employers:** Employers must undertake **awareness programs,** provide a safe working environment, and display information about the POSH Act at the workplace.
  - **Complaint Mechanism:** The Act lays down a procedure for filing complaints, conducting inquiries, and providing a fair opportunity to the parties involved.

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Note:

- **Penalties:** Non-compliance with the Act's provisions can result in **penalties, including fines and cancellation of business licenses.**

Recommendations of the Justice Verma Committee on Sexual Harassment at Workplace:

The Justice Verma Committee, which was constituted in response to the **2012 Delhi gang rape case to review laws** relating to sexual violence against women. It made several key recommendations regarding sexual harassment at the workplace such as:

- **Inclusion of Domestic Workers**: The Committee recommended that **domestic workers** should be covered under the PoSH Act to ensure their protection from sexual harassment.
- **Employer Compensation:** The Committee recommended that the **employer should be liable to pay compensation to women** who have suffered sexual harassment at the workplace, alongside other legal remedies.
- **Employment Tribunal:** Instead of relying solely on an Internal Complaints Committee (ICC), the Committee proposed setting up an **Employment Tribunal** to address complaints of sexual harassment, ensuring more impartial and comprehensive adjudication.

What are the Challenges in Application of POSH Act in Political Parties?

- **Lack of Traditional Structure:**
  - Political parties often employ **temporary workers** who **may not have a defined workplace** or a direct relationship with high-ranking officials.
    - This makes it **challenging to identify the workplace** responsible for establishing ICCs.
- **Absence of Explicit Guidelines:**
  - Political parties typically manage internal discipline **(including sexual harassment cases)** through their own committees as there is **absence of explicit guidelines** for application of POSH related to parties.
- **Role of the Election Commission of India (ECI):**
  - ECI has explicit mandate in **case of RPA Act under Article 324** of the Constitution but it lacks in other laws like POSH.
  - ECI has enhanced transparency through measures like mandatory candidate disclosures and political funding accountability.
    - However, its role in enforcing workplace safety laws, such as the POSH Act, remains unclear.
- **Legal Precedents:**
  - The Kerala High Court, in the case of ***Centre for Constitutional Rights Research and Advocacy v. State of Kerala (2022) ruled*** that **political parties do not have an employer-employee relationship** with their members and thus are **not obligated to establish ICCs.**
  - This ruling underscores the complexity of applying workplace laws to the political sphere.

Similar Issues Related to Political Parties

- **Bringing Political Parties under RTI Act:** Despite being **declared public authorities by the CIC in 2013,** most political parties have **resisted coming under the ambit** of the RTI Act.
  - This lack of transparency in their functioning and **financial dealings undermines public trust** and democratic accountability.
- **No Mandatory Income Tax Compliance:** Under **Section 13A of the Income Tax Act, 1961,** political parties are **exempt from taxes** if they maintain proper accounts and submit audited reports.
  - However, **there are allegations of misuse,** with many parties not fully disclosing their financial details. **Reforms to mandate greater accountability and taxation compliance** could help curb financial opacity.

Enhancing Parliamentary Productivity

Why in News?

Recently, the former **Vice President of India** highlighted increasing **disruptions in Parliament,** emphasising the need for a transition from confrontational politics to constructive debates.

- He urged political parties to restore parliamentary decorum, foster consensus, and prioritise meaningful

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Note:

dialogue to strengthen democracy and rebuild public trust.

What are the Challenges to the Functioning of Parliament in India?

- **Frequent Disruptions of House:**
  - Frequent disruptions, often driven by opposition protests, waste valuable time and resources, undermining Parliament's legislative and representative functions.
    - These led to **key bills being passed without sufficient discussion,** weakening the quality of legislative debate and the effectiveness of parliamentary proceedings.
    - For instance, the **2023 Winter Session of Parliament** faced significant disruptions, including the **suspension of 141 opposition MPs** over protests related to issues such as breaches in parliamentary security.
- **Political Polarization and Adversarial Politics:**
  - **Intensified polarization** between the government and opposition has fostered adversarial politics, stalling legislative progress.
    - This divisive approach undermines consensus-building essential for effective governance.
- **Lack of Participation in Sessions:**
  - During the **17th Lok Sabha (2019–2024)**, the average attendance across sessions was 79%, but participation in debates was limited, with MPs engaging in an average of 45 debates each.
  - Certain sessions saw lower attendance, such as the Budget Session of 2021, which recorded a significant drop to 69%, primarily due to the pandemic's impact
- **Poor Quality of Legislation:**
  - Legislative quality often suffers due to insufficient debate and scrutiny, with bills sometimes passed hastily which undermines clarity and effective implementation.
    - The **Right to Information (Amendment) Bill, 2019**, faced criticism for diluting the autonomy of the Information Commission, reflecting inadequate stakeholder consultation.
- **Lack of Gender Equality:**
  - In the **18th Lok Sabha**, 74 women were elected, constituting **13.6%** of its members.
    - This marks a slight decline from the 17th Lok Sabha, where women represented **14.4%** of the members.
  - Additionally, women account for **14.05% of the Rajya Sabha.**
    - As of April 2024, women make up **26.9%** of lawmakers worldwide.

What Steps Have Been Taken to Ensure Proper Functioning of Parliament?

- **Code of Conduct:** A code of conduct has been established to guide the behavior of Members of Parliament (MPs) and to promote decorum, discourage disruptions, and encourage active participation.
- **Technology Adoption:** The Parliament has embraced technology to enhance its efficiency.
  - **Live streaming of parliamentary proceedings** in India has fostered greater **accountability and decorum** among MPs, as real-time broadcasts increase public scrutiny.
    - This has led to **more disciplined behavior,** with MPs conscious of being observed.
  - Also, online platforms and apps have been developed for **better communication among MPs.**
- **Committee System:** To improve the quality of legislative processes, Parliament utilizes a robust **committee system** to scrutinize bills, policies, and government initiatives before they reach the main House.
  - This ensures that expert opinions are integrated, improving the depth and quality of the legislative output.
- **Disciplinary Actions:**
  - Disruptive behavior by MPs is addressed through disciplinary actions. MPs who engage in unruly conduct can face suspension or expulsion from the House.
    - This measure **ensures accountability and discourages behavior that undermines** the parliamentary process.

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Note:

How can the Productivity of Parliamentary Functioning in India be Enhanced?

- **Commitment to Constructive Debate**:
  - Political parties should **focus on fostering constructive dialogue** and **move away from obstructionist strategies**.
    - Promoting **consensus-building** is essential, with the government **addressing opposition concerns** and the opposition **offering feasible alternatives**.
    - This approach ensures **more productive discussions**, contributing to the overall effectiveness of parliamentary proceedings.
- **Strengthening the Role of the Presiding Officer**:
  - To improve parliamentary efficiency, the **Speaker/ Chairman of the House** should be granted **enhanced powers** to swiftly address disruptions and ensure adherence to parliamentary rules.
  - This would **help maintain decorum** and allow the legislative process to proceed smoothly without unnecessary interruptions.
- **Promoting a Culture of Accountability**:
  - To promote accountability in Parliament, political parties must ensure **MPs actively engage in the legislative process** by monitoring their **attendance,** participation in debates, and **voting records.**
  - **Peer pressure, party discipline**, and **following the examples of exemplary parliamentarians** can further encourage integrity and constructive dialogue, strengthening democratic values.
  - Additionally, the **Right to Information (RTI) Act** can be leveraged to ensure **MPs' actions and records** are accessible to the public, fostering greater accountability.
- **Public Engagement and Transparency**: Increasing **public awareness** about the functioning of Parliament can build trust in the institution.
  - **Enhanced media coverage** and transparency in decision-making will ensure greater accountability.
- **Youth Engagement in Politics**: Encouraging **young leaders** to focus on values such as integrity, transparency, and accountability can bring fresh perspectives to parliamentary proceedings, **promoting ethical conduct** and effective governance.

■■■

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Note:

Economic Scenario

Highlights

- *ADB Loans for India's Green Growth and Logistics Modernization*
- *Trends and Progress of Banking in India 2023-24*
- *Underutilization of Operation Greens Scheme*
- *Initiatives for Agricultural Cooperative Societies*
- *Increasing Real Effective Exchange Rate in India*
- *Aviation and its Impact on Emissions*
- *Annual Survey of Unincorporated Sector Enterprises 2023-24*
- *55th GST Council Meeting*
- *Making India's FPOs Global*
- *RBI Report on State Finances 2024-25*
- *Improving Farmers' Welfare*
- *Loan Write-Offs and NPA Reduction in PSBs*
- *Reviewing Free Trade Agreements*
- *India Surpasses USD 1 Trillion in FDI*
- *Switzerland Suspends MFN Status to India*
- *India and the Changing Landscape of Globalisation*

ADB Loans for India's Green Growth and Logistics Modernization

Why in News?

Recently, the **Government of India** and the **Asian Development Bank (ADB)** signed **two crucial loans** aimed at **strengthening India's infrastructure** and supporting sustainable growth.

What are the Key Facts Regarding the ADB Loans Taken by India?

- The **USD 500 million** loan aims to **finance green and sustainable infrastructure projects** aligned with **India's climate commitments,** particularly focusing on **connectivity, energy transition,** and under-resourced sectors like **urban projects, education, and healthcare**.
  - **Recipient:** The loan, with a sovereign guarantee, will be provided to the **India Infrastructure Finance Company Limited (IIFCL).**
  - **Role of IIFCL:** IIFCL will use the funds to provide **long-term capital for infrastructure projects** and leverage private sector resources.
    - This aligns with India's need for **private capital investment** to meet its **net-zero commitments**.
    - IIFCL is a leading **public sector infrastructure finance institution**, which has funded about **21% of the country's national highway capacity**, comprising nearly 30,000 km of roads.
- The **USD 350 million** loan falls under the **SMILE program** to bolster India's **manufacturing sector** and enhance **supply chain resilience**.
  - It aims to **reduce logistics costs**, improve **efficiency**, generate **employment**, and promote **gender inclusion** and supports India's broader **economic development** by driving innovation and growth within the logistics sector.

What is the Strengthening Multimodal and Integrated Logistics Ecosystem (SMILE) Program?

- **About:**
  - The SMILE program is a key initiative by the Government of India, supported by the **Asian Development Bank (ADB)**, to **comprehensively reform and modernize the country's logistics sector.**
- **Objective:**
  - To **enhance India's manufacturing competitiveness** and **strengthen supply chain resilience** by improving logistics efficiency.
- **Focus Areas:**
  - **Institutional Strengthening:** Improving **coordination and planning** among various government ministries

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and agencies involved in logistics at the national, state, and city levels.
    - This aims to **create a more unified and efficient governance structure** for the sector.
- **Standardisation and Infrastructure Development:** Promoting **standardisation of warehousing** and other logistics assets to improve efficiency and attract greater private sector investment in infrastructure development.
    - This includes promoting **multimodal logistics parks (MMLPs)**.
- **External Trade Logistics: Streamlining procedures and processes** related to imports and exports to **reduce delays and costs in international trade.**
- **Technology Adoption**: Encouraging the use of **smart technologies and** automation in logistics operations to **improve efficiency, reduce emissions, and enhance service delivery**.
    - This includes **promoting digitalization and data sharing**.

Government Initiatives for Logistics Sector

- **Bharatmala Pariyojana**
- **PM Gati Shakti Scheme**
- **Multi Modal Logistics Parks**
- **Dedicated Freight Corridor**
- **Sagarmala Projects**
- **Multi Modal Logistics Parks (MMLP)**
- **National Logistics Policy 2022**
- **E-Way Bill Integration with FASTag, RFID**

Asian Development Bank (ADB)

- **About:** ADB is a multilateral development bank **established in 1966** with a mission to foster **economic growth and cooperation** in the **Asia-Pacific Region.**
- **Headquarters**: Located in **Manila, Philippines.**
- **Membership**: Comprises **68 members**, including 49 from Asia and the Pacific, and 19 from other regions.
- **India and ADB**: India is a founding member and the **4th largest shareholder** (after Japan, US and China) of ADB.
- **ADB's Support to India**: ADB aligns its support with India's priorities for **sustainable, climate-resilient, and inclusive growth**, in line with its **ADB's Strategy 2030** and the country partnership strategy for **2023–2027**.
- Recently ADB released the **Asia Development Outlook Report 2024**.

Trends and Progress of Banking in India 2023-24

Why in News?

The **Reserve Bank of India (RBI)** has raised alarms over the **increasing reliance on unsecured lending and private credit,** calling for enhanced vigilance in its annual ***Trends and Progress of Banking in India 2023-24 report.***

- Despite the steady decline in **gross non-performing assets (GNPA) and sustained profitability of banks**, the central bank emphasized the need to address emerging risks in the financial ecosystem.

What are the Key Highlights of RBI's Trends and Progress of Banking Report?

- **Decline in NPAs: GNPAs reached a 13-year low of 2.7% in March 2024**, further dropping to 2.5% by September 2024.
    - The Retail Loan Segment had the lowest GNPA ratio at 1.2% in September 2024, while **agriculture loans had the highest GNPA ratio at 6.2%.**
    - The GNPA ratios for education loans improved significantly, declining from 5.8% in March 2023 to 2.7% by September 2024, though they remain the highest among retail segments.
- **Profitability:** Banks' profitability continued to rise with **return on assets (RoA) at 1.4% (first half of 2024-25) and return on equity (RoE) at 14.6%** in FY24, marking six consecutive years of profit growth.
    - The NBFC sector exhibited **double-digit credit growth**, with improved asset quality and strong **Capital Adequacy Ratios (CRAR).**
    - The consolidated balance sheet of **Scheduled Commercial Banks (SCBs)** showed strong growth

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in credit and deposits, and **Urban Co-operative Banks (UCBs)** saw improvements in asset quality, capital buffers, and profitability.

- **Rising Share of Unsecured Loans:** The share of unsecured loans in SCBs' total credit rose to **25.5% in March 2023** before slightly declining to 25.3% in March 2024.
  - In response, the RBI introduced stricter norms in November 2024, raising **risk weights** and **setting exposure limits** (maximum lending to a borrower or group).
  - The RBI also expressed concerns **over top-up loans,** often approved with minimal due diligence and lax adherence to guidelines, with reports of misuse, including redirection to the stock market.
    - In 2023, the RBI mandated **top-up loans against depreciating movable assets** to be treated as unsecured loans.
- **Rise of Dark Patterns:** The report highlights concerns over **dark patterns,** the **Central Consumer Protection Authority (CCPA)** issued guidelines to regulate such practices, and RBI is evaluating the prevalence of dark patterns among regulated entities (REs).
- **High Employee Attrition:** Employee attrition (employees leaving organizations) rates have **surged to 25% in the past three years,** raising concerns about operational risks such as service disruption, loss of institutional knowledge, and higher recruitment costs.
- **Slippage Ratio:** The slippage ratio improved in 2023-24. For the third consecutive year, **private sector banks (PVBs)** had a higher slippage ratio than **public sector banks (PSBs)** due to larger fresh accretions to NPAs in PVBs.
- **RBI's Recommendations:**
  - RBI recommended banks to **adopt strategies such as improved onboarding,** training, mentorship, competitive benefits, and fostering a supportive workplace culture **to curb attrition.**
  - RBI urged banks to ensure better compliance with credit appraisal processes and prudential guidelines, particularly in light of rising risks regarding unsecured loans

Key Terms

- **Return on Assets (RoA):** Measures a business's profitability relative to its total assets.
- **Return on Equity (RoE):** Measures a company's annual return (net income) relative to its total shareholders' equity.
- **Capital Adequacy Ratios (CRAR):** Measures a **bank's ability to absorb losses** and ensure stability, protecting depositors and promoting financial system efficiency.
- **Slippage Ratio:** Measures new accretions to NPAs as a share of standard advances at the beginning of the year.
- **Dark Patterns:** Dark Patterns are unethical **user interface (UI)/user experience (UX)** tactics designed to deceive users into actions they don't intend, benefiting the company.
  - These practices limit user control and transparency, such as hidden costs, difficult cancellation options, misleading ads, or auto-charging after free trials.
  - **Examples**: Fake countdowns, disguised ads, and forced account creation for transactions.

What is the Impact of Rising Unsecured Loans on India's Economy?

- **Higher Default Rates and Financial Stress:** As more unsecured loans are issued, the risk of **defaults rises,** leading to increased **non-performing assets (NPAs)** and financial strain on banks and NBFCs.
- **Inflationary Pressure:** Rising defaults and higher interest rates reduce disposable income, curbing discretionary spending, **increasing inflation**, and slowing economic growth.
- **Effect on Consumers:** For consumers, the availability of unsecured loans can provide easier access to credit.
  - However, it also means **higher interest rates** and potential **debt traps** if not managed responsibly
- **Rural and Urban Impact:** Both rural and urban consumers face financial instability due to the rise in high-cost loans, contributing to lower consumer confidence.

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Underutilization of Operation Greens Scheme

Why in News?

Recently, a **Parliamentary Standing Committee (PSC) on Agriculture, Animal Husbandry and Food Processing** tabled a report highlighting the underperformance **Operation Greens (OG) scheme.**

- The scheme's limited success raises concerns about the government's ability to address the challenges of volatile agricultural markets and post-harvest losses.

What are the Key Findings of the PSC Report?

- **Underutilisation of Budget:** Only 34% (Rs 59.44 crore) of the Rs 173.40 crore allocated for the 2024-25 financial year has been spent by October 2024.
  - **65.73% of the allocated budget remains unspent**, which raises concerns about meeting expenditure guidelines for the remaining fiscal year.
- **Limited Impact on Price Stabilization:** Despite the scheme's objective to stabilize crop prices, **onion farmers in Maharashtra are facing a price crash,** with onion **prices falling by nearly 50%.**
  - **Potato shortages** are being experienced in states like Odisha and Jharkhand, exacerbated by **production dips** in West Bengal due to weather conditions.
- **Policy Inconsistencies:** The government's inconsistent policies, like the **export ban and its extension,** and the imposition of export duties, have frustrated onion farmers, affecting their ability to secure fair prices.
- **Challenges in Achieving Scheme's Mandate:** The scheme has **struggled to meet its dual objectives:** ensuring farmers receive fair prices while maintaining affordable prices for consumers.
  - The **underfunding and lack of progress** highlight the challenges in stabilizing agricultural markets and addressing infrastructure gaps in **post-harvest management.**

What is the Operation Greens Scheme?

- **About:** Operation Greens, a **central sector scheme** launched in 2018, under the **Pradhan Mantri Kisan SAMPADA Yojana,** aims to stabilize the prices of **perishable crops** and enhance farmers' earnings by drawing inspiration from **"Operation Flood (White Revolution)".**
- **Objectives:**
  - **Long-Term Interventions:** Enhance farmers' value realization through support for production clusters and **Farmers Producer Organisations (FPOs).**
    - Reduce **post-harvest losses** via farm gate infrastructure, agri-logistics, and storage facilities.
    - Boost **food processing** and value addition by linking production clusters with the market.
  - **Short-Term Interventions: Protect growers from distress sales** and reduce post-harvest losses.
- **Implementation:** OG is implemented by the **Ministry of Agriculture and Farmers Welfare,** with funding provided by the **National Agricultural Cooperative Marketing Federation of India (NAFED).**
- **Expansion of Scope:** The OG scheme initially focused on **Tomato, Onion, and Potato (TOP).**
  - However, as part of the **15th Financial Commission Cycle (2021-26),** its scope expanded to include **22 perishable crops** such as **fruits** (e.g., Mango, Banana, Grapes), **vegetables** (e.g., Carrot, Beans, Okra), **gourd family** (e.g., Bottle Gourd, Bitter Gourd), and other crops like **Garlic, Ginger, and Shrimp.**

Read more: Food Inflation: Trends, Factors and Control Measures

Initiatives for Agricultural Cooperative Societies

Why in News?

Recently, the **Ministry of Cooperation** has taken a series of **initiatives** for the development of **cooperative societies** in agriculture including **Multipurpose Primary Agricultural Credit Societies (MPACS).**

What is MPACS?

- **About PACS:** PACS are **village-level cooperative credit societies** that provide **loans and collect repayments** from rural agricultural borrowers.

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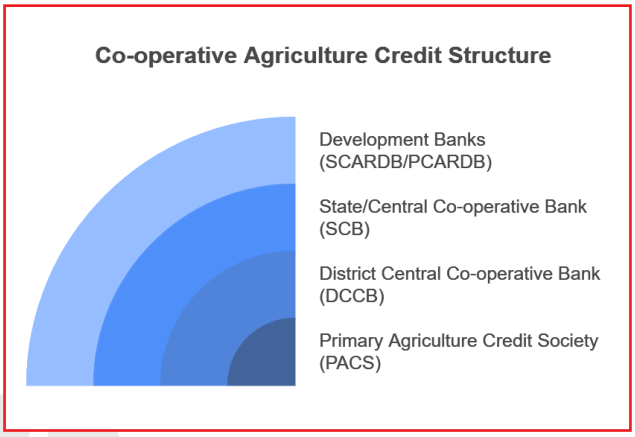
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- PACS are registered under the **respective State Cooperative Societies Act** of the state and are administered by the **State Registrar of Cooperative Societies (RCS).**

- **Constitutional Backing:** **97th Amendment Act, 2011** added the word **cooperatives** in **Article 19(1)(c)** under **Part III** of the Constitution.
  - A new **Article 43B** was added in the **Directive Principles of State Policy** **(Part IV)** regarding the **promotion of cooperative societies**.
- **About MPACS:** MPACS provide a **wide range of services** beyond agricultural credit, addressing multiple needs of rural communities.
  - It includes credit societies as well as **dairy and fisheries cooperatives**, and is engaged in **32 activities**, including **storage and distribution** of manure, gas, fertilisers, and water, making them more **versatile and effective**.

What are the Recent Initiatives for Development of Cooperative Societies in Agriculture?

- **Multipurpose PACS:** 10,000 newly established **Multipurpose Primary Agricultural Credit Societies (MPACS)** were inaugurated along with **Dairy and Fisheries Cooperative Societies.**
  - India has set a target of creating **2 lakh PACS in 5 years** under a vision to have a presence of **cooperatives in every panchayat** across the country.
- **National Organic Cooperative Limited (NOCL):** Farmers were urged to **connect with NOCL** to increase their incomes through **organic farming.**
  - NCOL is an **umbrella organization** for aggregation, procurement, certification, testing, branding and marketing of organic products of the **co-operative sector.**
    - NOCL has been registered under the **Multi-State Co-operative Societies Act, 2002.**
- **Mobile Rural Marts Initiative:** It was launched in collaboration with **NABARD**, to provide essential items like **pulses, rice, and wheat flour** at affordable prices under the **Bharat brand.**
  - The Bharat Brand offers essential goods to the **middle class at subsidized prices.**
- **Micro-ATMs:** Cooperative societies are being equipped with **RuPay Kisan Credit Cards** and **Micro-ATMs** to access **low-cost loans**, facilitating **financial inclusion** and support.



Increasing Real Effective Exchange Rate in India

Why in News?

Recently, the **Reserve Bank of India (RBI)** reported that the **Real Effective Exchange Rate (REER)** of the rupee reached **108.14** in November 2024 from 107.20 in October 2024, marking its highest level this year.

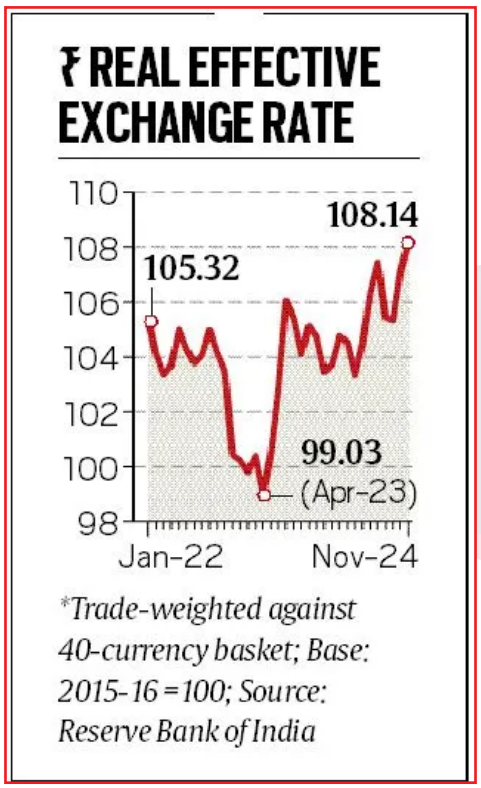
What are RBI's Findings Related to REER?

- **Record High REER Values**: The rupee's REER of 108.14 indicates overvaluation since 2015-16, undermining **export competitiveness**, despite **nominal depreciation** against the **USD**, revealing contrasting **Nominal Effective Exchange Rate (NEER)** **and REER indices**.
  - A REER above **100** signifies overvaluation relative to its base year (2015-16), reducing export competitiveness, while a value below 100 suggests undervaluation.
- **Volatility Trends**: The rupee experienced the **lowest volatility** (it has appreciated against other currencies) among major global currencies, even as emerging market currencies faced outflows due to rising US **bond yields** and a **strong dollar index**.

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Note:

- **Trade Balance Implications**: **Overvaluation of the rupee**, as indicated by REER, makes **Indian exports** costlier, undermining competitiveness in global markets.
  - At the same time, it reduces import costs, potentially widening the **trade deficit**.
- **Capital Outflows**: The strengthening **US dollar**, fueled by higher **bond yields** and global demand for safe-haven assets, has caused **capital outflows from India**, pressuring the rupee.



What is NEER and REER, and their Significance?

- **Definition:**
  - **NEER**: The **Nominal Effective Exchange Rate (NEER)** is a weighted average of a currency's bilateral **exchange rates** relative to multiple trading partner currencies.
    - It reflects nominal currency strength without accounting for **inflation** or price level differences between countries.
    - A rise in **NEER indicates** nominal appreciation, while a fall signals depreciation.
  - **REER**: The **Real Effective Exchange Rate (REER)** improves upon NEER by adjusting for **relative price levels (inflation)** between the domestic economy and its trading partners.
    - **REER** is calculated as the **NEER** multiplied by the ratio of domestic price indices to foreign price indices, making it a purchasing **power parity (PPP)**-adjusted measure.
  - **Indices of NEER/REER**: The **NEER/REER indices** for India includes **six currencies:** the US Dollar (USD), Euro (EUR), Japanese Yen (JPY), British Pound (GBP), Chinese Yuan (CNY), and Singapore Dollar (SGD).
    - The **NEER/REER indices** have been revised to include a broader basket of 36 currencies.
  - **Influencing Factors**: **NEER and REER** trends are influenced by **productivity differences** (affecting competitiveness), **trade terms** (affecting export/import balance), **inflation** (eroding currency value), and **fiscal spending** (impacting economic stability and demand).
- **Significance of NEER**:
  - **Trade-weighted Index**: NEER gauges a currency's nominal performance against multiple trading partners, reflecting broad external currency trends.
  - **Limited Insight**: Since it ignores **inflation differences**, **NEER** may not accurately reflect actual trade competitiveness or purchasing power.
  - **Macroeconomic Use**: Policymakers use **NEER** to understand trends in currency strength and plan nominal interventions when needed.
- **Significance of REER**:
  - **Indicator of Competitiveness**: REER measures a country's **external competitiveness** by accounting for inflation, with a higher value indicating reduced **export competitiveness** and **cheaper imports**.
  - **Policy Guide**: REER is critical for determining whether a currency is **overvalued or undervalued**, guiding **monetary policy** and **exchange rate** adjustments.
  - **Trade Balance Impact**: Depreciation of REER improves the **trade balance** more in the short term by enhancing export competitiveness.

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Note:



Aviation and its Impact on Emissions

Why in News?

A study published in ***journal Nature*** found that the **aviation sector** is one of the top global contributors to greenhouse gas emissions, with **private jets** having a much higher carbon footprint per passenger.

- India's private aviation sector is in its early stages but is experiencing rapid growth, driven by the country's growing wealth.

What is the State of Emission from the Aviation Sector?

- **Aviation Sector:**
  - As per International Energy Agency (IEA), aviation contributed **2% of global energy-related CO_2 emissions in 2022**, with emissions reaching around **800 Mt CO_2**, approximately 80% of Covid-19 pandemic levels.

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Note:

- Aviation emissions have **grown faster than rail, road, or shipping** in recent decades.
- The aviation sector would rank among the **top 10 emitters worldwide** if it were treated as a **single nation.**

➢ **Emissions from Private Aviation:** The study found that emissions from private aviation **increased by 46% between 2019 and 2023.**

- Private jets emit **5 to 14 times more CO_2** per passenger than commercial flights and are **50 times more polluting than trains** on a per-passenger basis.
- It also releases **nitrogen oxides (NOx)** and other green-houses gases such as vapor trails, which further exacerbate the environmental impact.

Growth in Private Aviation:

➢ **Global:** The number of private jets increased from 25,993 in December 2023 to **26,454 in February 2024**, contributing to the rise in emissions.

- Each private flight on average emits approximately **3.6 tonnes of CO_2,** intensifying **global warming.**

➢ **India:** As of March 2024, India has **112 registered private planes.**

- While this number is relatively small compared to global leaders like the US and Malta, it places India among the **top 20 countries** in terms of private aircraft ownership.
- India has **one private jet per 1 lakh people**, significantly lower than countries like Malta (46.51 per lakh) and the US (5.45 per lakh).
- The increasing **number of billionaires in India (third highest globally)** and the growing millionaire population are key drivers of the demand for private jets.

What are the Potential Solutions to Decarbonize the Aviation Sector?

➢ **Sustainable Aviation Fuels (SAFs):** SAFs (tested by airlines like SpiceJet and Air Asia) are **bio-based or waste-derived fuels** that are chemically similar to conventional jet fuel but have a **significantly lower carbon footprint**.

- **Potential Benefits:**
  - **Carbon Emission Reduction:** SAFs can reduce lifecycle carbon emissions by up to **80%,** depending on the feedstock and production method.
  - **Compatibility:** SAFs are **drop-in fuels** that can be **used in existing aircraft engines** and infrastructure **without major modifications**, offering a near-term solution for emission reduction.
  - **Diverse Feedstocks**: SAF production can leverage a wide range of feedstocks (like algae, agricultural residues, waste oils, or municipal solid waste), **reducing dependence on fossil fuels and offering flexibility** in supply chains.
- **Challenges:**
  - **High Cost:** SAFs are currently **more expensive than conventional jet fuels**, making them less competitive in the market.
  - **Limited Production:** The global production capacity of SAFs remains limited, and scaling up production to meet the demand of the aviation industry requires **significant investment and infrastructure development.**
  - **Sustainability**: While SAFs reduce emissions, their production must be sustainable, considering factors like land-use changes, water use, and biodiversity.

➢ **Battery-Electric Propulsion:** It involves using **electricity stored in batteries** to power aircraft engines, **replacing conventional jet engines** with electric motors to reduce greenhouse gas emissions.

- **Potential Benefits:**
  - **Zero Emissions:** Battery-electric aircraft produce no direct emissions, contributing to a clean, carbon-neutral future for short-haul flights.
  - **Energy Efficiency:** Electric motors are **more efficient than combustion engines,** converting more energy from the battery into thrust.
  - **Noise Reduction:** Electric propulsion reduces noise pollution, making it ideal for urban and regional airports.
- **Challenges:**
  - **Battery Limitations:** Current battery technology is **not suitable for long-haul flights** due to limitations in energy density.

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Note:

- **Weight and Size:** Batteries are **heavy and take up significant space**, which limits the size and payload capacity of electric aircraft.
- **Charging Infrastructure:** The widespread deployment of charging infrastructure at airports is necessary and **requires significant investment and coordination.**

➢ **Hydrogen**: Hydrogen fuel offers a **high energy density and emits only water vapor** when combusted, making it a clean fuel alternative.

- Both **hydrogen combustion** (40% efficiency) and **hydrogen fuel cells** (45-50% efficiency) are under active research.
- **Potential Benefits:**
  - **Higher Energy Density:** Hydrogen has **three times the gravimetric energy density of kerosene**, making it suitable for powering larger aircraft and longer flights.
    - Gravimetric energy density is the available energy per unit mass of a substance.
  - **Clean Emissions**: When combusted or used in fuel cells, hydrogen only **produces water vapor,** making it a clean alternative to fossil-based jet fuels.
- **Challenges:**
  - **Hydrogen Storage**: Hydrogen's low volumetric energy density necessitates large, **heavy storage tanks,** challenging aviation's need for compact, lightweight solutions.

➢ Liquid hydrogen offers higher density but introduces additional complexities, making efficient storage difficult.

- **Infrastructure Development**: Establishing refueling infrastructure at airports and ensuring the safe global transportation of hydrogen is challenging due to its **high flammability.**

➢ The **need for specialized safety measures and skilled labor** increases costs.

- **Aircraft Redesign**: Hydrogen combustion requires **partial aircraft redesign,** while fuel cells necessitate complete overhauls, including **modifications to fuel tanks, delivery systems, and storage**.

➢ This demands significant **technical expertise and substantial funding for retrofitting existing aircraft.**

What are India's Initiatives for Making Air Travel Sustainable?

➢ **Policy Initiatives:** The Indian government launched the UDAN Scheme (Ude Desh ka Aam Nagrik) scheme to improve rural air connectivity and **NABH (Nextgen Airports for Bharat Nirman)** to expand airport capacity.

➢ **Sustainable Aviation Fuels (SAFs)**: Indian airlines have tested SAFs, with SpiceJet using a blend of **jatropha oil** in 2018 and AirAsia using SAF in 2023.

➢ **Ethanol for Aviation**: India's ethanol production supply chain could be a feasible medium-term solution for aviation fuel.

- Using **surplus sugar to produce ethanol for aviation fuel** could meet **15-20% of India's aviation fuel demand by 2050,** though care is needed to avoid land-use changes and groundwater depletion.

India's Initiatives Related to Aviation Industry

➢ National Civil Aviation Policy, 2016

➢ Goods and Services Tax (GST) rate reduced to 5% from 18% for domestic Maintenance, Repair and Overhaul (MRO) services.

➢ Open Sky Agreement

➢ Digi Yatra

Annual Survey of Unincorporated Sector Enterprises 2023-24

Why in News?

Recently, the **Ministry of Statistics and Programme Implementation (MoSPI)** has released the results of Annual Survey of Unincorporated Sector Enterprises (ASUSE) **for 2023-24** for the reference period October 2023 – September 2024.

➢ A **reference period** is a **specific time frame** used for collecting and analyzing data or statistics.

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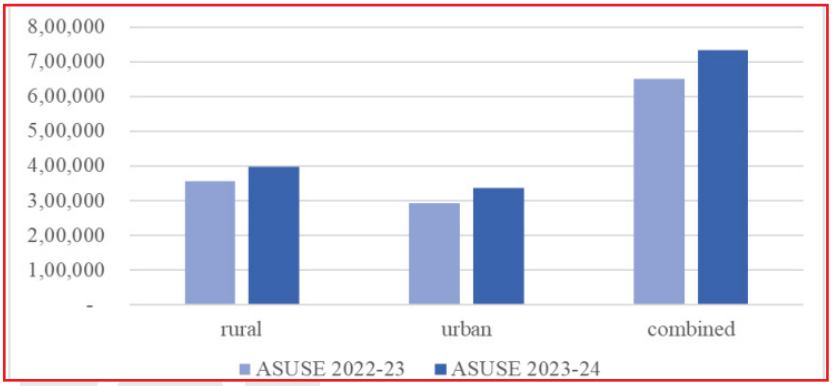
Note:

What is ASUSE?

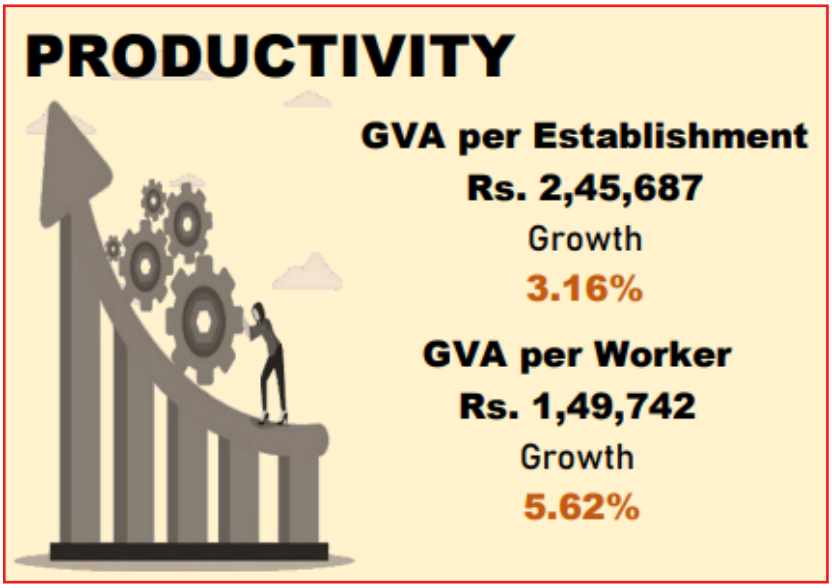
- **About:** ASUSE **exclusively** measures various economic and operational characteristics of **unincorporated non-agricultural establishments** in **manufacturing, trade and other services sector** (excluding construction).
  - Unincorporated non-agricultural establishments are enterprises in the **unorganised or informal sector**, comprising **MSMEs**, **household units** including those with hired workers, and **own-account enterprises**.
- **Coverage:**
  - **Geographic: Rural and urban areas** of the whole of India (except the villages in Andaman and Nicobar Islands, which are difficult to access).
  - **Sector Wise:** Unincorporated non-agricultural establishments belonging to three sectors viz., **Manufacturing, Trade and Other Services**.
  - **Ownership:** Proprietorship, partnership (excluding Limited Liability Partnerships), **Self-Help Groups (SHGs)**, **cooperatives**, societies/trusts etc.
- **Survey Timeline:** The **first** full ASUSE was conducted in **2021-22** (April 2021 - March 2022), followed by the 2nd survey from October 2022 to September 2023.
  - The current **3rd survey (ASUSE 2023-24)** was conducted from **October 2023 to September 2024.**
- **Sample Size:** In ASUSE 2023-24, data were **collected** from a total of **4,98,024 establishments (2,73,085 in rural and 2,24,939 in urban)** from **16,842 surveyed first stage units** (8,523 in rural and 8,319 in urban).
  - First stage units were census **villages in rural areas and blocks in urban areas**.

What are the Key highlights of the ASUSE 2023-24 Results?

- **Growth in Establishments:** Total number of establishments **increased by 12.84%**, from 6.50 crore in 2022-23 to **7.34 crore in 2023-24.**
  - The **"Other Services"** sector showed the highest growth at **23.55%**, followed by the **manufacturing** sector with a **13%** increase.



- **GVA Growth:** **Gross Value Added (GVA)** rose by **16.52%**, driven largely by a 26.17% growth in the "Other Services" sector.
  - **GVA per worker** increased by **5.62%,** rising to Rs. 1,49,742 in 2023-24 from Rs. 1,41,769 in 2022-23.



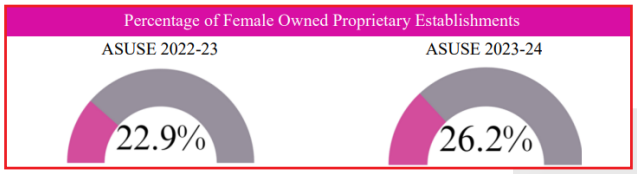
- **Output per Establishment: Gross Value of Output (GVO)** per establishment grew by **6.15%** from Rs. 4,63,389 to **Rs. 4,91,862** in current prices.

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Note:

- GVO refers to the **total value of goods and services** produced by an establishment during a specific period.

- **Labour Market Performance:** The sector employed **over 12 crore workers**, an increase of more than one crore from 2022-23, signaling robust labour market growth.
  - **"Other Services"** sector saw the highest annual growth of **17.86%**, followed by manufacturing with **10.03%.**
- **Female Entrepreneurship:** Female-owned proprietary establishments **rose** from 22.9% in 2022-23 to **26.2% in 2023-24**, indicating a positive trend in women's business ownership.



- **Improvement in Wages:** Average **emoluments** for hired workers increased by **13%** in 2023-24, with the highest growth observed in the **manufacturing sector (16%).**
- **Digital Penetration:** Establishments using the **internet** grew significantly, from 21.1% in 2022-23 to **26.7% in 2023-24**, highlighting a strong trend toward digital adoption in business operations.



Key Concepts and Definitions

- **Enterprise**: An **entity producing goods and services** with autonomy in financial and investment decisions, responsible for resource allocation.
- **Unincorporated Non-Agricultural Establishment**: They are **not incorporated** (i.e., neither registered under **Companies Act, 1956** nor under **Companies Act, 2013**).
- **Manufacturing Establishment**: Units involved in **transforming materials into new products** or providing manufacturing services, including maintenance and repair.
- **Emoluments**: **Regular payments** (salary, wages, bonuses) and employer contributions to social security benefits, including in-kind payments like healthcare or recreation.
- **Gross Value Addition (GVA)**: GVA is the **difference** between the **gross value of output and intermediate consumption (inputs).**
- **Hired Worker Establishment (HWE)**: Establishment employing at **least one hired worker regularly.**
- **Other Service Establishments:** They refer to unincorporated enterprises engaged in various service activities that **do not fall in trade and manufacturing categories**.

What is the Importance of Unincorporated Non-agricultural Units in the Indian Economy?

- **Employment Providers:** The **Economic Survey** **of 2018-19** reports that **93% of India's workforce** is employed in the informal sector, making it the largest employment provider.
- **Regional Balance:** Informal enterprises help reduce regional imbalances by **industrialising rural areas** and providing employment to individuals with **limited capital.**
- **Entrepreneurship:** Small informal firms foster entrepreneurship, particularly for vulnerable groups such as **women, youth,** and individuals in **marginalized communities**.
- **Support for the Formal Sector:** It provides goods and services to the **formal sector** that may not be efficiently produced by larger firms, or by supporting the **supply chains** of formal enterprises.
- **Dynamic Role:** The unincorporated sector accounts for **38% of firms in services, 35% in trade (mainly retail), and 27% in manufacturing** highlighting the importance of informal enterprises across different sectors.

What Challenges Related to Unincorporated Non-agricultural Units in India?

- **Gender Disparities:** Women make up a significant portion of the informal workforce, yet they face severe disadvantages, including **lower wages, income instability, and the absence of social security.**

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Note:

- **Vulnerability to Uncontrollable Factors:** During the monsoon **season** in India, construction activities often come to a halt, leaving **migrant workers** without steady work.
- **Lack of Employment Protections:** Informal employment by nature **lacks** the protections and benefits associated with formal employment, such as **written contracts, minimum wages, paid leave, and regulated working hours.**
- **Tax Evasion:** Many firms **evade taxes** by concealing revenue and expenses from the legal system resulting in a **substantial loss** of government revenue.
- **Challenges in Growth:** Long-term stagnation remains a concern, with the sector's growth rate from **2015-2023** showing **minimal expansion of only 2%**.
- **Absence of Accurate Data:** The **Economic Survey of 2018-19** states that **93%** of India's workforce is informal, while the **Niti Aayog's Strategy for New India at 75** estimates it at **85%.**
  - **'Report of the Committee on Unorganised Sector Statistics'** of the **National Statistical Commission (NSC), 2012** claims **over 90%** of the workforce is informal, though sources are not specified.

55th GST Council Meeting

Why in News?

Recently, the Finance Minister chaired the **55th Goods and Services Tax (GST) Council** meeting.

What are the Key Decisions Taken in the 55th GST Council Meeting?

- **Used Electric Vehicle (EVs):** GST council decided to **raise** the rate of tax to **18% from 12% on all used EV sales,** just as in case of non-electric vehicles.
  - GST will apply only to the **margin value** (difference between purchase and selling price, adjusted for depreciation if claimed) in case of **business** sales. **No GST** applies to **individual-to-individual sales**.
- **Bank's Penal Charges:** No GST applies to penal charges by **banks and non-banking financial companies (NBFCs)** for **loan term violations.**
- **Payment Aggregators:** Payment aggregators handling payments of **less than Rs 2,000** will be eligible for an exemption.
  - This exemption **does not** extend to **payment gateways or other fintech services** unrelated to fund settlement.
- **Aviation Turbine Fuel (ATF):** GST council **did not agree** on bringing ATF under the ambit of **GST** because states refused to accept it.
  - States see ATF as part of the **crude petroleum diesel basket**, saying that it alone **cannot be taken out**.
  - 5 products i.e., **crude oil, petrol, diesel, ATF and natural gas** were kept out of purview of GST. The central government levies **excise duty** on them and states **levy VAT.**
- **GST Exemption: Black pepper and raisins** supplied directly by **farmers** will be exempt from GST.
  - **Gene therapy** is **fully exempt** from GST, and **Integrated GST** exemption on **surface-to-air missiles** is extended.
- **Compensation Cess:** Reduced **compensation cess** rate to **0.1% on supplies to merchant exporters.**
  - This Cess is collected on the supply of select goods and or services to **compensate the states for any revenue loss** on account of implementation of GST.
- **Popcorn:** GST Council **clarified** (no new tax imposition) that **caramelized popcorn** is taxed at **18% GST**. Ready-to-eat popcorn with **salt and spices attracts 5% GST** if not pre-packaged and labeled, and **12%** if **pre-packaged and labeled**.
  - **Caramelised popcorn** is classified as **sugar confectionery**, and attracts **18% GST** while **salted** popcorn is a **namkeen** and subject to **5% GST**.

Note:

- **Payment Aggregator:** A payment aggregator is a **third-party service provider** that enables customers to make and businesses to accept payments online. E.g., **PhonePe, Paytm etc.**
- **Payment Gateways:** Payment gateways are termed as **technology infrastructure** providers for online payments.
  - It includes physical card-reading devices like **point-of-sale (POS) machines, QR codes or Near Field Communication (NFC) technology** etc.

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Note:

- **Fintech Services:** It refers to any **app, software, or technology** that allows people or businesses to digitally **access, manage, or gain insights** into their finances or make financial transactions. E.g., **WazirX** (Bitcoin and cryptocurrency exchange & trading platform).

GST Council

- **About:** The GST Council, a **constitutional body** under **Article 279-A (101st Amendment, 2016)**, makes recommendations on GST implementation.
  - GST is a **value-added (Ad Valorem)** and **indirect tax system** that is levied on the supply of goods and services in India.
- **Members:** The Council includes the **Union Finance Minister (Chairperson)**, Union Minister of State (Finance), and a finance or any other minister from each state.
- **Nature of Decisions:** In the ***Mohit Minerals case, 2022***, the Supreme Court ruled GST Council recommendations are **not binding**, as Parliament and states have **simultaneous legislative powers** on GST.

Making India's FPOs Global

Why in News?

Recently, **Indian Council for Research on International Economic Relations (ICRIER)** analyzed **issues** plaguing India's **farmer producer organisations (FPOs)** and suggested **reforms.**

- ICRIER (1981) is a prominent Indian policy research **think tank** specialising in **Agriculture**, **Climate Change**, Digital Economy, Economic Growth among others.

What is a Farmers Producer Organisation?

- **About:** FPO is a type of **producer organisation (PO)** where the members are **farmers.**
  - **Small Farmers' Agribusiness Consortium (SFAC)** **supports** promotion of FPOs.
  - PO is a **generic name** for an organisation of producers of any produce, e.g., **agricultural, non-farm products, artisan products**, etc.
    - A PO can be a **producer company, a cooperative society** or any other legal form which provides for sharing of profits/benefits among the members.
- **Need for FPO:** To help **small and marginal farmers** achieve **economies of scale,** increase their bargaining power by negotiating collectively, double their income, and reach the global markets.
  - In India, small and marginal farmers represent **86% of farmers.**
- **Ownership:** The ownership of the FPO is with its members. It is an organization **of the producers, by the producers and for the producers.**
- **Legal Forms of FPO:** FPOs can be registered under:
  - Companies Act, 1956 and Companies Act, 2013.
  - Societies registered under Society Registration Act, 1860
  - Public Trusts registered under Indian Trusts Act, 1882
- **Differences between PO and Cooperative Societies:**

Parameter	Cooperative Society	Producer Organisation
Objectives	Single object	Multi-object
Membership	Individuals and cooperatives	Any individual, group, association, producer of goods or services
Government control	Highly patronized to the extent of interference	Minimal, limited to statutory requirements
Reserves	Created if there are profits	Mandatory to create every year

What Problems are Plaguing India's FPOs?

- **Limited Market Linkages:** Around **80% FPOs** are unable to **identify and reach buyers**, manufacturers, processors, and exporters.
- **Lack of Product Information**: Although over **8,000 FPOs** are registered on the website of the ministry of agriculture and farmers welfare, there is **no information on which products they cater to.**
  - **Companies and foreign agents** prefer sourcing through **traders and traditional mandis** due to the lack of information.

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Note:

- **Complex Regulations:**
  - **Multiplicity of Standards**: Different agencies like FSSAI, BIS, APEDA, and Spices Board provide varying standards that **confuse FPOs** about compliance and **market access**.
  - **Information Deficit**: About **72% of FPOs** find the domestic standard-setting process too **complex and lack adequate knowledge** of export standards and requirements.
- **Non-Acceptance by Importing Countries**: Very few countries have **mutual recognition agreements for standards** with India.
  - Although our **standards are good**, they are **rarely accepted** by importing countries.
- **Traceability Issues:** Global buyers want **product traceability**, and many FPOs do not know how to implement it.
  - Product traceability tracks products through the **supply chain** by logging and monitoring **manufacturing data at each step.**
- **Limited E-commerce Adoption:** Despite government initiatives like **ONDC and eNAM**, FPOs have limited awareness and capability to leverage e-commerce platforms effectively.
  - E.g., as of November, 2024, **no turmeric FPOs are listed on ONDC**.

Success Story of FPOs in India

- **Kandhamal Apex Spices Association for Marketing (KASAM) in Odisha** has been set up for promoting Kandhamal turmeric. It is a collaboration of **61 Spice Development Societies** under the government of Odisha.
  - It signed a memorandum of understanding with **Kisan Saathi**, under which the former has been working with **two KASAM FPOs—Gumapadar FPC Ltd. and Sastri FPC Ltd**.—to help them to reach global markets.
    - **Gumapadar FPC Ltd**. is exporting Kandhamal turmeric to **NedSpice Group from the Netherlands.**
- This demonstrates that with **strategic partnerships** and coordinated efforts, FPOs can overcome market barriers and go global.

Global Success Stories

- **Mexico (Ejido System):** Ejidos are **communal farming systems** where land is collectively owned and managed by communities.
  - It helped farmers access international markets, particularly in crops like **avocados and berries.**
- **Thailand:** Thailand has a strong network of **agricultural cooperatives**, especially in rice production.
  - Programs like **"One Tambon (Village) One Product"** promote unique **local agricultural products.**
- **China: Farmer Professional Cooperatives (FPCs)** in sectors like **tea, fruits, and aquaculture** have successfully penetrated global markets.
  - Platforms like **Alibaba** have enabled cooperatives to **sell directly to consumers.**

RBI Report on State Finances 2024-25

Why in News?

The Reserve Bank of India's (RBI) report, ***State Finances – A Study of Budgets of 2024-25,*** highlighted the progress made by state governments in fiscal consolidation, alongside significant challenges such as high debt levels and rising subsidies.

What are the Key Highlights of the Report?

- **States Performance Post-Pandemic:**
  - **Improved Tax Revenue:** The average tax buoyancy (responsiveness of tax revenue to changes in the economic growth rate) increased to 1.4 (during 2021-25) from 0.86 (during 2013 to 2020), reflecting **improved efficiency in tax collection.**
    - Higher tax revenues have enabled states to allocate **greater funds for asset creation,** including highways and bridges.
  - **Capital Expenditure:** States have consistently improved the quality of expenditure, with capital expenditure rising from 2.4% of Gross Domestic Product (GDP) in 2021-22 to 2.8% in 2023-24, and it is budgeted at 3.1% of GDP in 2024-25.

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Note:

- This indicates a sustained focus on improving the quality of expenditure with growth-enhancing investments.

❍ **Fiscal Discipline:** States' gross fiscal deficit is budgeted at 3.2% of GDP for 2024-25, a marginal increase from 2023-24 (2.9%).

- States' revenue expenditure is projected to increase to **Rs 47.5 trillion in FY25,** which accounts for **14.6% of GDP** as against Rs 39.9 trillion or 13.5% of GDP FY24.

❍ **Dependence on Borrowing:** States' dependence on market borrowings has surged, accounting for 79% of the **gross fiscal deficit (GFD)** in FY25.

- Gross market borrowings of states and Union Territories increased by 32.8% to Rs 10.07 trillion in FY 2023-24.

❍ **Elevated Debt Levels: States' debt-to-GDP ratio** (relative measure of debt compared to economic output) **decreased from 31.0% of GDP in March 2021 to 28.5% in March 2024,** but remained higher than the pre-pandemic level of 25.3% in March 2019.

- State debt levels exceed the **Fiscal Responsibility and Budget Management committee's recommended debt-to-GDP ratio of 60% by 2023** (with **40% for the Central Government and 20% for State Governments**).
- States like **Arunachal Pradesh, Himachal Pradesh, Sikkim, and Tripura** have forecast high fiscal deficits, while larger economies like **Gujarat and Maharashtra have lower deficits** as a share of GDP.
- Electricity distribution companies (DISCOMs) continue to **strain State finances,** with accumulated losses reaching Rs 6.5 lakh crore by 2022-23 (2.4% of India's GDP).

➢ **Concerns Regarding States Budgets:**

❍ **Rising Subsidy Burden:** Several states have announced **"farm loan waivers, free/subsidised services** (like electricity to agriculture and households, transport, gas cylinder and cash transfers to farmers, youth and women)".

- These measures risk **crowding out funds meant for critical social and economic infrastructure.**
- Subsidy schemes like **income transfers for women** (around Rs 2 lakh crore, ~0.6% of GDP) strain state finances.

❍ **Revenue Generation:** Revenue from **non-tax sources** and central grants has contracted in FY25.

- The pace of growth in **State Goods and Services Tax (SGST),** the primary driver of state tax revenues, has slowed.

❍ **Lack of Fiscal Transparency:** Inadequate reporting of **off-budget liabilities** obscures the true fiscal position.

What are the Recommendations by RBI on State Finances?

➢ **Debt Consolidation:** Establish clear, transparent, and **time-bound glide paths** for debt reduction. Ensure uniform reporting of liabilities to **improve fiscal accountability.**

❍ The report calls for "next generation" fiscal rules that offer states flexibility to handle shocks while ensuring medium-term fiscal sustainability.

➢ **Expenditure Efficiency:** Focus on outcome-based and **climate-sensitive budgeting.**

❍ Rationalise **centrally-sponsored schemes (CSS)** effectively to free up resources for state-specific needs and reduce fiscal stress.

➢ **Subsidy Rationalization:** Contain and optimize subsidies to prevent them from **overshadowing more productive expenditures.**

➢ **Efficient Market Borrowings:** Reduce **over-reliance on market borrowings** to manage fiscal deficits and minimize financial vulnerabilities.

➢ **Revenue Generation:** Strengthen collection mechanisms for SGST, **stamp duty,** and other key revenue sources. Increase non-tax revenues and grants to reduce dependency on market borrowings.

Note: A subsidy is a **government benefit provided to individuals, or institutions,** either **directly (cash payments) or indirectly (tax breaks),** aimed at easing burdens and promoting social or economic goals.

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Note:

What is the Need for Balancing Subsidies and Fiscal Discipline?

- **Importance of Subsidies:**
  - **Human Development:** Welfare programs like subsidies, healthcare, and income transfers support vulnerable populations.
    - For example, **Pradhan Mantri Ujjwala Yojana (PMUY)** provides subsidized **LPG connections** to poor households, reducing health risks from traditional cooking.
      - The **Public Distribution System (PDS)** offers subsidized food grains to low-income families, ensuring food security.
  - **Economic Equality:** Subsidies help **reduce income inequality by redistributing wealth,** which can contribute to more inclusive growth.
    - Subsidies help mitigate the **negative impacts of market forces** on the poor, providing a **safety net during times of economic distress.**
- **Importance of Fiscal Discipline:**
  - **Sustainable Public Finances:** Excessive welfare spending without proper funding can lead to **high deficits and rising public debt,** jeopardizing long-term financial stability.
    - Maintaining fiscal discipline ensures sustainable government spending, prevents excessive deficits.
  - **Investor Confidence:** Maintaining fiscal discipline is key to ensuring that **markets and foreign investors continue to view the country as a reliable economic partner.**
    - The government's focus on fiscal consolidation through schemes like **Goods and Services Tax (GST)** and **Fiscal Responsibility and Budget Management (FRBM) Act, 2013** ensures stable fiscal management.
  - **Economic Growth:** Focusing too much on welfare spending at the cost of productive investments can **hinder economic growth,** reducing the resources available for sustainable development.
- **Balancing Subsidies and Fiscal Discipline:**
  - **Targeted Welfare Programs:** Targeted welfare spending, like **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)** for farmers and **Direct Benefit Transfer Scheme** for efficient subsidy delivery, ensures resources reach those in need, maximizing impact and minimizing wastage.
    - Streamlining welfare programs through **Digital India** and **Aadhaar-linked benefits** improves subsidy efficiency, reduces leakages, and frees up resources for infrastructure, health, and education investments.
  - **Revenue Growth**: Strengthening the tax base through GST enhances revenue collection. Developing initiatives like **Production Linked Incentives (PLI),** which **can provide long-term income rather than additional subsidies,** creates **fiscal space for both welfare and investment.**
  - **Economic Stability:** Maintaining fiscal discipline helps in controlling **inflation, reducing public debt**, and ensuring economic stability.

Improving Farmers' Welfare

Why in News?

Recently, the **Parliamentary Standing Committee (PSC) on Agriculture, Animal Husbandry and Food Processing** tabled its first report on **demands for grants (2024-25)** of the Ministry of Agriculture and Farmers Welfare in the **18th Lok Sabha.**

- It recommended a slew of measures to **improve farmers' welfare.**

What are the Key Recommendations of the PSC Report?

- **Legal Guarantee of MSP:** It recommended providing a **legal guarantee** on **Minimum Support Price (MSP).**
  - Develop a **roadmap** for implementing the legal MSP, ensuring the central government plans finances for a **smooth transition.**

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Note:

- The government may present a **post-crop season statement** in Parliament detailing the number of farmers who sold at MSP and the **gap between MSP and market prices.**

- **Paddy Waste Management:** Provide **compensation** to farmers for managing and disposing of crop residue to prevent **stubble burning.**
  - Consider Punjab's proposal for a bonus of **Rs 2,000 per acre,** with cost-sharing between the Centre and the state.
- **Enhancing PM-KISAN:** Double the annual financial assistance under the **PM-KISAN scheme** from **Rs 6,000 to Rs 12,000.**
  - It may be extended to **tenant farmers** and **farm labourers** too.
- **Debt Relief:** Introduce a **debt waiver scheme** for farmers and farm laborers to mitigate rising distress and suicides.
  - Closely **monitor** the increasing dependence on **loans** and rising **outstanding debts** among rural families.
- **Budgetary Allocation:** It has pointed to the continuous decline in the budgetary allocation to agriculture as a percentage of the total central plan.
  - Despite higher allocations from 2021-22 to 2024-25, the Central plan outlay share fell from **3.53% in 2020-21 to 2.54% in 2024-25**.
- **Universal Crop Insurance:** The committee proposed **mandatory crop insurance** for small farmers with **up to 2 acres**, modeled after the **Pradhan Mantri Jan Arogya Yojana (PM-JAY)** health insurance scheme.
- **National Commission for Farm Labourers:** Establish a **National Commission for Minimum Living Wages for Farm Labourers** to address their rights and welfare.
- **Renaming Department:** Rename the Department of Agriculture and Farmers Welfare to the **Department of Agriculture, Farmers, and Farm Labourers Welfare** to highlight the focus on agricultural laborers' welfare.

Note: Vice-President **Jagdeep Dhankhar** dismissed the claim that higher MSP would lead to inflation, stating, **"Whatever price we offer to farmers, the nation will benefit five times more, without a doubt."**

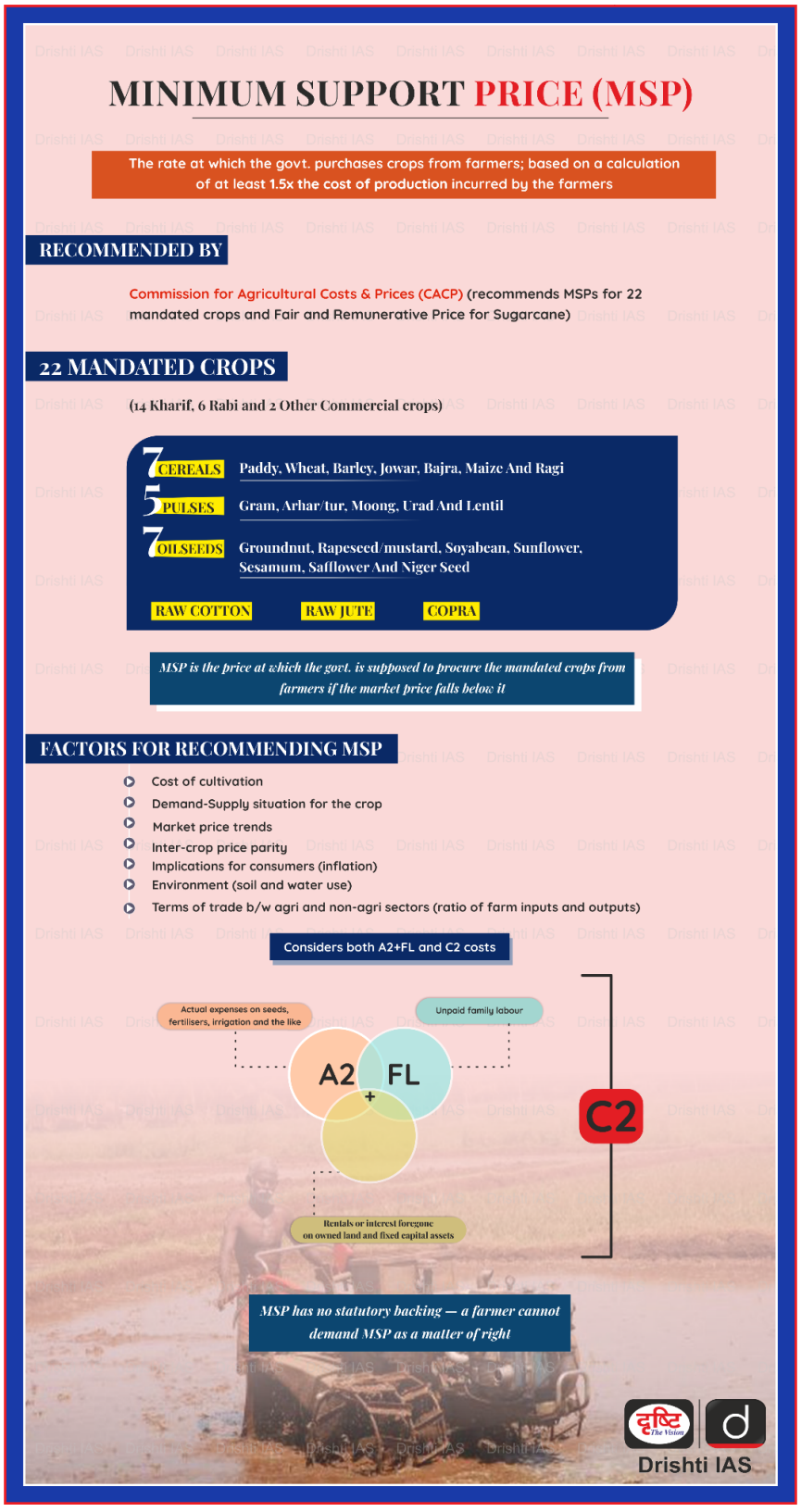
PSC on Agriculture, Animal Husbandry and Food Processing

- **About:** PSC on Agriculture, Animal Husbandry and Food Processing assist Parliament in **reviewing and overseeing policies, legislation, and issues** related to agriculture, animal husbandry, and food processing industries.
  - It is constituted under **Rule 331C of the Rules of Procedure and Conduct of Business in Lok Sabha.**
- **Jurisdiction:** It is mandated with the task of **scrutiny and oversight** of the working of the following Ministries/Departments of the Government of India:
  - Ministry of Agriculture and Farmers Welfare
    - Department of Agriculture and Farmers Welfare
    - Department of Agricultural Research and Education
  - Ministry of Fisheries, Animal Husbandry and Dairying
    - Department of Animal Husbandry and Dairying
    - Department of Fisheries
  - Ministry of Food Processing Industries
  - Ministry of Cooperation
- **Composition:** It has **31 members: 21 from Lok Sabha,** nominated by the Speaker, and **10 from Rajya Sabha**, nominated by the Chairman.
  - The **Chairperson** of the Committee is **appointed by the Speaker** from amongst the members of the Committee from Lok Sabha.
- **Tenure of Members:** The term of office of the members of the Committee **does not exceed one year.**

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Note:



What is the Significance of PSC's Recommendations on Farmers' Welfare?

- **Financial Stability:** A legally binding MSP would ensure **financial stability** for farmers, **reduce suicides,** mitigate market volatility, alleviate debt burdens, and improve overall mental health among farmers.
- **Food Security:** A legally guaranteed MSP aligns with broader national food security objectives by ensuring that foodgrains are available at stable prices, thus aiding public distribution systems.
- **Environmental Sustainability:** Providing **compensation** to farmers to buy equipment to manage stubble burning will have a positive impact on the environment.
  - Crop residue burning worsens **winter air pollution** in Northern India as many farmers cannot afford effective crop residue management equipment.
- **Inclusivity in Welfare:** Renaming the Department of Agriculture to include "Farm Labourers" reflects a broader focus on the **welfare of all stakeholders in agriculture**, not just land-owning farmers.

Demands for Grants

- **Constitutional Basis**: Article 113 of the Indian Constitution mandates that the expenditure estimates from the Consolidated Fund of India, other than those charged on it, must be submitted to the Lok Sabha in the form of Demands for Grants.

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Note:

- Charged expenditures are presented for informational purposes but are not subject to a vote.

- **Purpose**: Demands for Grants are presented for **approval by the Lok Sabha** for expenditure on various services, covering both **Revenue and Capital Accounts (including Loans).**
- **One Demand per Ministry/Department**: Normally, **one Demand** is presented for **each Ministry/ Department.**
  - However, for large Ministries/Departments, more than one Demand may be presented.
- **Inclusion of Charged Expenditure**: If any part of the **expenditure is 'charged'** on the Consolidated Fund, it is **shown distinctly** in italics in the **Demand for Grants**.
  - However, this portion is not subject to a vote.

What are the Key Issues Affecting Farmers?

- **Unmet Promise of MSP:** Farmers are demanding a **statutory MSP at 1.5 times** the comprehensive **cost of production (C2+50%)** which remains unfulfilled.
  - Without a guaranteed MSP at the recommended rate, farmers continue to **face financial instability,** contributing to rising distress and suicides.
- **Rising Cost of Production:** Prices for **fertilizers, seeds, insecticides, diesel, water, and electricity** are consistently rising, putting a strain on farmers' profitability.
- **Debt Burden:**The **NABARD Rural Financial Inclusion for 2022-23** said that the percentage of rural families taking loans has risen from **47.4% in 2016-17 to 52% in 2021-22.**
  - It also found rural household **incomes rose by 57.6%** (2016-22), but **expenses grew 69.4%**, indicating expenses are outpacing income growth
- **Decline in Public Investment:** Cuts in public sector investment in irrigation and power have led to **rising costs and incomplete projects**, hindering farmers' access to reliable irrigation and affordable electricity.
  - Additionally, the **Pradhan Mantri Fasal Bima Yojana (PMFBY)** has not sufficiently met farmers' needs, with many states opting out due to its alleged focus on benefiting insurance companies over farmers.
- **Declining Agricultural Growth:** Agriculture's **growth rate** in 2023-24 (provisional estimates) declined to **1.4%**, the lowest in the last seven years, compared to the average annual growth rate of **4.18% over the past four years.**
- **Underfunded MGNREGA:** The current government has been accused of **underfunding the MGNREGA** due to which the number of work days has **come down to just 42.**
  - **Non availability of MGNREGA** work during non-agricultural seasons poses a **threat to farmers livelihood.**
- **Land Acquisition:** There is growing concern over the perceived shift from **"Land to the Tiller" to "Land to Corporates,"** often bypassing the **Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.**
  - Tribal lands are being taken away without any compensation for mining and other purposes.

Loan Write-Offs and NPA Reduction in PSBs

Why in News?

A large-scale **loan write-off** by banks over the past few years has contributed to a significant reduction in **non-performing assets (NPAs)**.

- As a result, banks have achieved a **12-year low NPA ratio of 2.8%** of advances by March 2024.

What is the Key Data Regarding Loan Write-Offs by Banks?

- **Loan Write-Offs:**
  - Between **FY2015 and FY2024**, Indian commercial banks wrote off loans amounting to **Rs 12.3 lakh crore,** with **Rs 9.9 lakh crore** in the **last 5 years** alone (FY 2020-2024).
  - The **peak in loan write-offs occurred in FY2019** at **Rs 2.4 lakh crore**, following an **asset quality review** initiated in 2015.
  - However, write-offs have **decreased since then, with FY2024** recording the lowest at Rs 1.7 lakh crore, amounting to just **1%** of the total bank credit.

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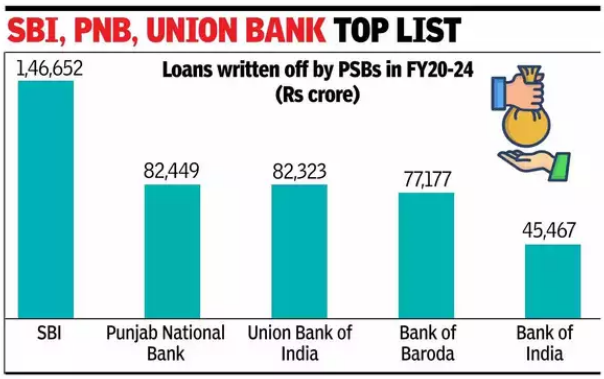
Note:

LOAN WRITE-OFFS BY BANKS (₹cr)

Year	Amount
2023-24	1,70,270
2022-23	2,08,037
2021-22	1,74,966
2020-21	2,02,781
2019-20	2,34,170

Source: RBI

- **Public Sector Banks' Share:**
  - **Public sector banks (PSBs)** accounted for **53%** (**Rs 6.5 lakh crore**) of the total loan write-offs in the last 5 years (FY 2020-2024).
- **Recovery Rates:**
  - Despite loan write-offs, the **recoveries** from these write-offs have been **relatively low,** standing at **only 18.7% (Rs 1.85 lakh crore)** in the last 5 years (FY 2020-2024).
    - **Over 81% of the written-off amount (over Rs 8 lakh crore)** remained **unrecovered** between FY 2020-2024, indicating challenges in recovering defaulted loans.
  - These loan accounts were **mostly wilful defaults** with promoters and directors of some of the companies even fleeing the country.
- **Impact on NPA Ratios:**
  - As of September 2024, the **gross NPAs** of PSBs and **private sector banks** (PSBs) stood at **Rs 3.16 lakh crore** and **Rs 1.34 lakh crore**, respectively.
  - The **NPA ratio as a percentage of outstanding loans** was **3.01%** for PSBs and **1.86%** for private sector banks.



Note:

- A **wilful defaulter** is a borrower or guarantor who has **intentionally failed to repay a loan**, with an outstanding amount of **Rs 25 lakh or more.**
- A **large defaulter** refers to a borrower with an outstanding loan balance of Rs 1 crore or more, whose account has been classified as doubtful or a loss.
- **Write-offs** refer to the **removal of a non-performing loan or asset from a bank's financial records,** recognizing that the debt is unlikely to be recovered.
  - This process **does not relieve the borrower of the responsibility to repay** the debt but acknowledges the improbability of recovery.

What is Non-Performing Asset (NPA)?

- **About:**
  - It refers to **loans or advances issued by banks or financial institutions** that **no longer bring in money for the lender** since the **borrower has failed to make payments** on the **principal and interest** of the loan for **at least 90 days.**
  - For agricultural loans, a loan granted for short duration crops will be treated as NPA, if the installment of principal or interest thereon remains **overdue for two crop seasons.**
- **Types of NPAs:**
  - **Gross NPA**: This is the total amount of NPAs **without deducting the provisional amount.**

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Note:

- **Net NPA:** This is the **gross NPA minus the provision.**
  - Provision refers to **funds left aside by banks** to **cover potential losses** arising from bad loans or NPAs.

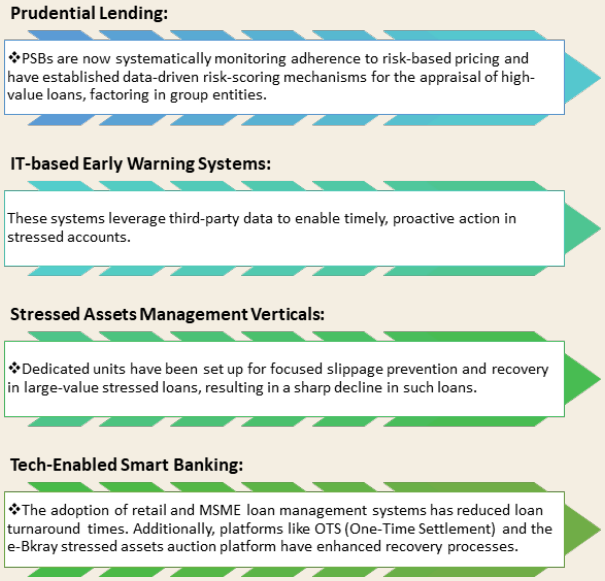
➢ **Laws and Provisions Related to NPAs:**

- **Bad Bank:**
  - The **National Asset Reconstruction Company Ltd (NARC)** is India's designated "bad bank."
  - To facilitate the sale of these assets, the government has also established the **India Debt Resolution Company Ltd (IDRC)**, which works to sell the assets in the market.
- **Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002:**
- **Insolvency and Bankruptcy Code (IBC), 2016:**
  - It also established the **National Company Law Tribunal (NCLT)** and the **Insolvency and Bankruptcy Board of India (IBBI)** to oversee the process.
- **The Recovery of Debts Due to Banks and Financial Institutions Act (RDB Act), 1993.**

EASE Framework

➢ The government has introduced the **Enhanced Access & Service Excellence (EASE) framework** in 2018 to improve the financial health of **PSB**.

➢ It focuses on **governance, prudent lending, risk management, technology adoption**, and **outcome-oriented human resource management** by institutionalizing incremental reforms that align with the evolving banking landscape, enhancing PSBs' efficiency and stability.



What are Loan Write-Offs by Banks?

➢ **About:**

- Loan write-offs refer to the **process of removing a loan from a bank's asset records**, indicating that the **bank no longer expects to recover the amount.**
  - It is primarily an **accounting measure** undertaken by banks to **clean their balance sheets** of NPAs and **improve their financial health.**
- This process allows banks to **focus on recoverable assets** and **manage their tax liabilities** efficiently.

➢ **Accounting Mechanism:**

- **NPA Classification and Provisioning:**
  - As per **Reserve Bank of India (RBI)** prudential norms, banks must create provisions for NPAs, which increase with the aging of the asset and are influenced by the realizable value of the collateral.
  - This ensures a cautious accounting approach to mitigate financial risks associated with non-performing loans.
- **Technical Write-offs:**
  - Technical write-offs occur when **provisions match the outstanding loan amount**, allowing banks to **remove the loan from their balance sheets** while classifying it as an off-balance-sheet item under **"Advances Under Collection."**
  - Despite the write-off, the **borrower's liability remains,** and recovery efforts persist through legal and institutional mechanisms.
- **Regulatory Guidelines:**
  - It requires that **write-offs adhere to board-approved policies** focused on balance sheet management and tax efficiency.

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Note:

- Banks must **continue tracking written-off accounts and actively pursue recoveries to optimize returns**.
- Additionally, the **Income Tax Act** allows deductions for written-off amounts, helping to reduce the tax burden on banks.

What are the Causes of Rising NPA in India?

- **Defective Lending Process: Inadequate due diligence** during borrower selection **and periodic review of credit profiles** result in improper assessment of repayment capabilities.
  - Also, lack of end-use monitoring systems facilitates the **diversion of funds for non-productive purposes,** further exacerbating the problem of NPAs.
- **Willful Defaults and Poor Credit Culture:** A rise in the number of willful defaults, contributes higher NPAs. PSBs have seen a **steady increase in the number of willful defaulters** with outstanding loans of **Rs 2.5 million and above**, rising from 10,209 in June 2019 to 14,159 by March 2023.
  - Frequent loan waivers, especially for **agricultural loans**, have adversely impacted the credit culture.
    - Promises of **loan waivers** encourage borrowers to default **in anticipation of future waivers.**
- **Industrial Sickness:** Industrial sickness arises from **ineffective management,** inadequate technological advancements, and **frequent shifts in government policies** render industries **financially unstable, leading to poor loan recovery rates** for banks.
- **Frauds and Malpractices:** Increasing fraud cases by **both bankers and borrowers** have exacerbated the NPA crisis.
  - In the **first half of FY 2023-24, Indian banks reported a 166% rise in fraud cases** to over 36,000.
  - **High-profile scams** like the Nirav Modi-PNB fraud and Vijay Mallya-Kingfisher default have severely **impacted** public trust and **financial stability.**
- **Regulatory and Policy Risks:** Non-compliance with RBI guidelines, such as **deficiencies in statutory and regulatory adherence**, has led to penalties on banks such as the recent Rs 2.91 crore fine on Axis Bank and HDFC Bank by RBI in September 2024.
  - Furthermore, practices like **evergreening of loans** and **window dressing of balance sheets** (manipulating financial statements to present a healthier financial position) have been prevalent, especially among **PSBs** and **cooperative banks**.
    - These practices **distort true asset quality,** masking underlying financial stress and **hindering accurate risk assessment.**
- **Sector-Specific Challenges:** Industry-specific factors such as high operating costs in the **aviation sector** lead to higher NPAs.
  - Indian airlines are projected to incur net losses of Rs 2,000–3,000 crore in FY 2025, **primarily due to high operating expenses and low ticket prices.**
  - **Priority Sector Lending (PSL) to agriculture and MSMEs** often face repayment challenges, leading to higher NPAs in the banking sector.
- **Inefficiencies in Resolution Mechanisms: Delay in the resolution of cases** before **Debt Recovery Tribunals (DRTs)** and the **slow implementation of recovery laws** like the **Insolvency and Bankruptcy Code (IBC)** and **SARFAESI Act** have hindered effective NPA management.

What are the Challenges Related to NPA Recovery?

- **Legal and Regulatory Hurdles:** NPA recovery in India is hindered by a **slow and outdated legal framework.** Despite laws like the IBC and SARFAESI Act, the resolution of corporate **insolvency cases takes over 400 days**, as reported by the **Insolvency and Bankruptcy Board of India (IBBI)**.
  - **Borrowers often exploit legal tactics to delay recovery**, exacerbating the situation.
- **Proper Asset Valuation and Realization:** Accurate asset valuation is critical in NPA recovery. **Market conditions and economic factors** can lead to **overvaluation or undervaluation**, resulting in financial losses.

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Note:

- **Converting collateral into cash**, especially during economic downturns or in niche markets, can be **slow and challenging,** with assets often failing to meet their original valuation.

- **Debtor Cooperation:** It is crucial for NPA recovery. Many borrowers **either lack the ability or willingness to repay,** resorting to tactics such as **hiding or undervaluing assets,** or **using legal delays,** significantly hampering the recovery process.
- **Operational Inefficiencies:** Internal inefficiencies, such as **poor documentation, inadequate tracking systems,** and **lack of coordination**, hinder NPA recovery.
  - The **absence of a centralized management system** leads to mismanaged information, delaying recovery and increasing costs.
- **Economic and Market Conditions:** Economic downturns lead to a **decline in asset values**, making it difficult to recover full loan amounts. **Market volatility**, especially in sectors like real estate and machinery, further complicates the recovery process.

Reviewing Free Trade Agreements

Why in News?

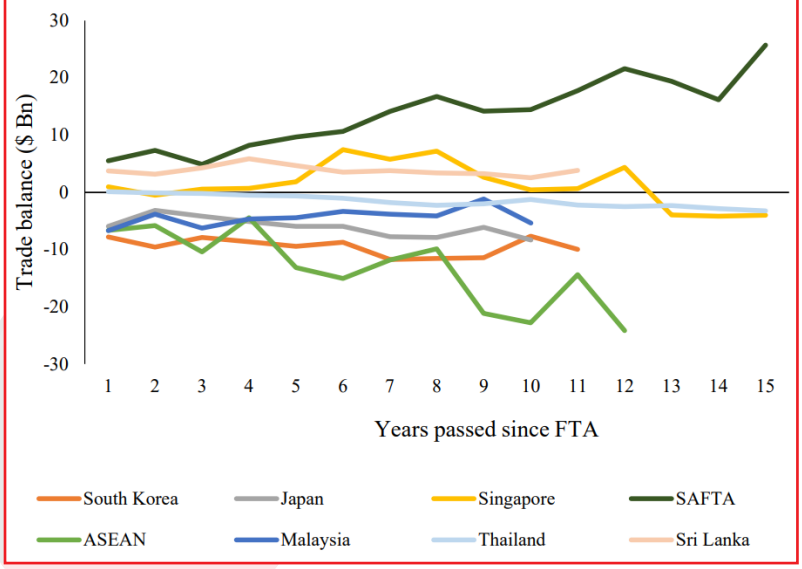
Recently, India's External Affairs Minister stated that the government has adopted a **cautious approach** to **free trade agreements (FTAs)** to protect the interests of **MSMEs** or **farmers**.

- The decision has been taken weighing the **unfavourable outcomes** of past agreements and ensuring that FTAs do not adversely impact **MSMEs or farmers**.

How FTAs Proved Unfavorable for India?

- **Worsening Trade Deficits:** Between **2017 and 2022**, while India's **exports** to FTA partners grew by **31%**, its **imports** surged by **82%** highlighting an **unsustainable trade deficit.**
  - India has been opening its markets **without gaining proportionate access** to markets in return.

Figure 2. India's trade balances over the years with its FTA partner



- **Low FTA Utilisation:** India's FTA utilisation remains **alarmingly low at around 25%**, far below the typical **70–80% utilisation rate** seen in developed countries.
  - It highlights India's **failure to fully utilize** the benefits of its bilateral and multilateral trade agreements.
- **Poor Manufacturing Competitiveness: ASEAN's** focus on research, **innovation,** government support, and **value chain upgrades** has boosted their **global competitiveness** by lowering production costs.
  - South Korea and ASEAN outperformed India in sectors like **electronics, automobiles, and textiles.**
  - It leads to a situation of **inverted duty structure** where **import duties on raw materials goods are higher** than on finished goods.
    - E.g., higher GST rate paid on purchase of domestic raw materials compared to low import duty on imported goods.
- **Lack of Stakeholder Consultation:** Negotiators failed to involve representatives from relevant **industries, businesses and associations**, leading to a limited understanding of FTAs' impact and granting market access without considering domestic concerns.

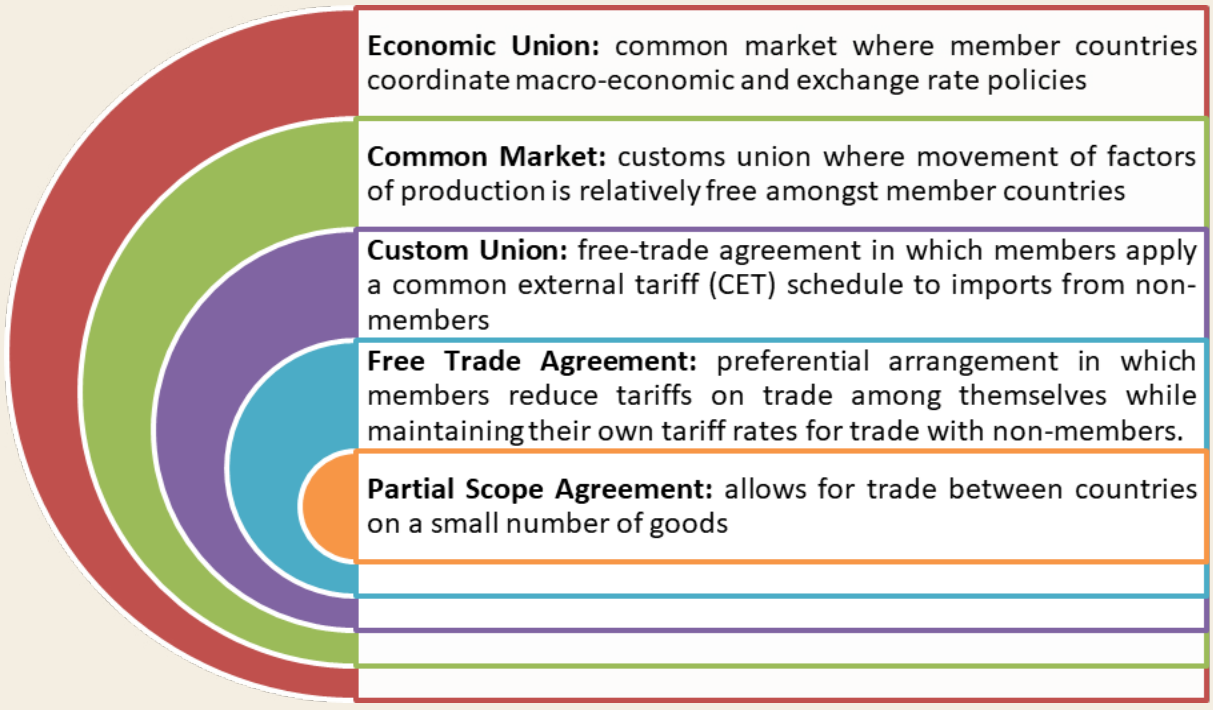
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Note:

- **Non-Tariff Barriers:** The FTAs led to a **reduction in tariff rates,** enabling partners to penetrate deeper into the Indian market.
  - But **non-tariff barriers** by partner countries such as stringent standards, **sanitary and phytosanitary** measures and technical barriers to trade persisted, limiting Indian exporters' market access and export opportunities.
- **Complex Certification:** The complexity of **certification requirements and rules of origin** under the FTAs have made it difficult for exporters to meet prescribed standards and increased compliance costs.
- **Lack of Awareness:** Many exporters do not know about the **incentives and potential advantages** available to them under the FTAs, hindering the FTAs' effective implementation.
- **Limited Services Trade:** Despite India having a competitive edge in services, services trade has **not grown as expected**.
- **Technology Transfer and Investment Challenges:** The **FDI** inflows have not translated into significant advancements in **technology or value-added linkages** that could enhance India's industrial capacity.

Free Trade Agreements

- **About:** FTAs are trade agreements between **two countries (or blocs)** which aim to give each other **access to markets by lowering or removing border protection measures** such as border taxes on exports and imports, and other barriers (such as standards, processes).
- **Coverage:** FTAs can cover **trade in goods** (such as agricultural or industrial products) or **trade in services** (such as banking, construction, trading etc).
  - FTAs can also cover other areas such as **intellectual property rights (IPRs), investment, government procurement** and competition policy.
- **Types of Trade Agreements:**



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Note:

➢ **Major Trade Agreements of India:**

MAJOR TRADE AGREEMENTS OF INDIA

Free Trade Agreement (FTA) With Neighbouring Countries

- India-Sri Lanka FTA
- India-Nepal Treaty of Trade
- India-Bhutan Agreement on Trade, Commerce, and Transit

A free trade agreement is a comprehensive deal between countries, offering preferential trade terms and tariff concessions, with a negative list excluding specific products and services.

Regional FTA's of India

- **India ASEAN Trade in Goods Agreement (11):** 10 ASEAN countries + India
- **South Asia Free Trade Agreement (7):** India, Pakistan, Nepal, Sri Lanka, Bangladesh, Bhutan, and the Maldives
- **Global System of Trade Preferences** (41 countries + India)

India's CECAs and CEPAs

CECA/CEPA is broader than FTAs, addressing regulatory, trade, and economic aspects comprehensively, with CEPA having the widest scope including services, investment, etc while CECA mainly focuses on tariff and TQR rates negotiation.

- CEPA with **UAE, South Korea, Japan**
- CECA with **Singapore, Malaysia**

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- **Others:**
  - India-Australia Economic Cooperation and Trade Agreement (ECTA)
  - India-Thailand Early Harvest Scheme (EHS)
  - India-Mauritius Comprehensive Economic Cooperation and Partnership Agreement (CECPA)

An EHS precedes an FTA/CECA/CEPA, where negotiating countries select products for tariff liberalisation, paving way for broader trade agreements and fostering confidence.

Preferential Trade Agreements (PTAs)

Partners in a PTA grant preferential access to specific products by lowering duties on agreed tariff lines, maintaining a positive list of products eligible for reduced or zero tariffs.

- **Asia Pacific Trade Agreement (APTA):** Bangladesh, China, India, S. Korea, Lao PDR, Sri Lanka, and Mongolia
- **SAARC Preferential Trading Agreement (SAPTA):** Same as SAFTA
- **India-MERCOSUR PTA:** Brazil, Argentina, Uruguay, Paraguay and India
- India's PTA with **Chile, Afghanistan**

Examples of the Use of Export Taxes to Maintain Competitiveness

➢ **Kenya:** Kenya got its **leather industry** back on its foot by imposing **40% export duty** on raw hides and skins.
  - This policy increased the number of **tanneries** in the country, created **seven thousand new jobs,** increased incomes for another 40,000 people and boosted earnings from the sector by **almost Euros 8 million**, with the potential for much more.

➢ **Malaysia:** Malaysia's **furniture sector** is dependent on the **export restrictions and taxes** on raw timber which keep their inputs **relatively cheap** in order to remain competitive.
  - Without these export restrictions and taxes, furniture SMEs are likely to be unable to compete.
  - Furniture SMEs are **6% of Malaysian SMEs** in the manufacturing sector.

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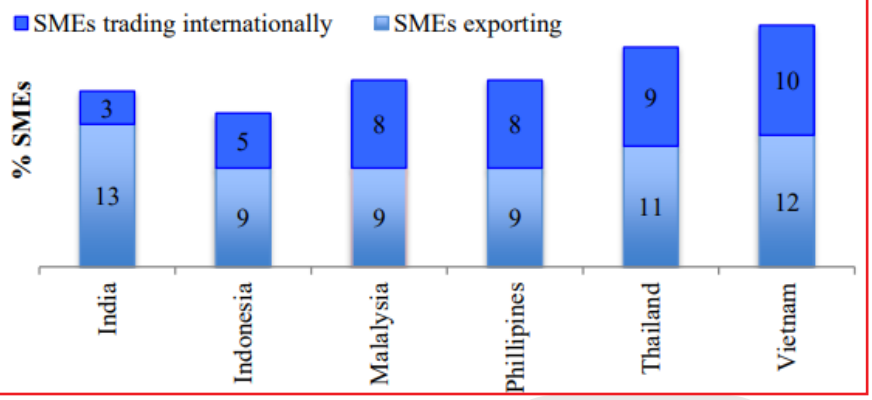
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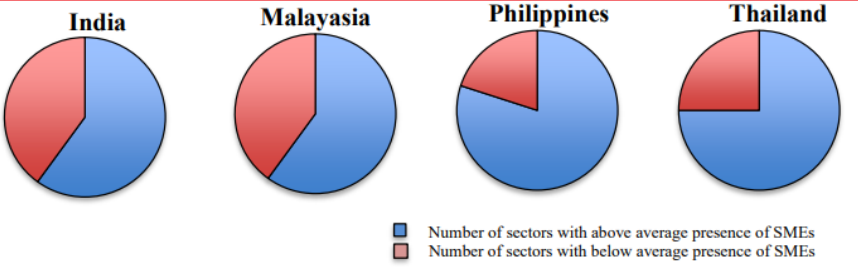
How FTAs Can Negatively Impact MSMEs?

- **Limited Global Reach**: Only **16%** of Indian SMEs engage in **international trade**, with **13% involved in exports**. This is significantly lower than the **international average of 19%.**

Figure 3: Proportion of SMEs trading internationally



- **Vulnerability to External Shocks**: Indian SMEs are vulnerable to **global disruptions**, as seen during the **Covid-19 lockdown,** which severely impacted supply chains.



- **Technical Barriers**: Indian MSMEs often struggle with compliance to international standards, including **sanitary and phytosanitary (SPS)** measures and **technical barriers to trade (TBTs).**
- **Limited Networking Opportunities**: MSMEs in India often **lack connections** with potential buyers abroad, which limits their market access and visibility.
- **Loss of Domestic Market Share**: As cheaper imported goods flood the market due to lower tariffs under FTAs, domestic MSMEs may **lose market share to foreign competitors**, leading to a decrease in sales and revenue.
- **Scaling Challenges**: The lack of **capital, technology, and access to skilled labor** can hinder their ability to compete on **price, quality, and efficiency** against foreign goods entering the Indian market.

How FTAs Can Negatively Impact Farmers?

- **UPOV 1991 Convention:** EU is pushing India to join the **UPOV 1991 (International Union for the Protection of New Varieties of Plants)** which grants **exclusive rights** over new plant varieties to large corporations.
  - By joining UPOV 1991, India could face **restrictions on seed sovereignty**, where farmers may be **forced to buy seeds every season** due to use of **Terminator seeds** (genetically engineered to be **sterile after first harvest**).
- **TRIPS-Plus Demands:** The EU's **TRIPS-plus** demands aim to expand the **intellectual property (IP) rights** of multinational companies (MNCs) over agrochemicals, such as **pesticides and fertilizers**.
  - It would lead to the **monopolization of agrochemical** markets by large companies and **increase in prices** of essential inputs for farmers.
- **Non-Tariff Barriers (NTBs):** Applying the **EU's pesticide maximum residue limit (MRL)** of **0.01 parts per million (ppm)** for several pesticides and food commodities could lead to the **rejection of India's agricultural export consignments.**
- **Increased Competition:** Under **Economic Cooperation and Trade Agreement (ECTA)**, Australia is looking to expand the export of **pulses, wines, sheep meat, wool and horticultural** produce to India which may prove detrimental for subsistence based Indian small landholder farmers.

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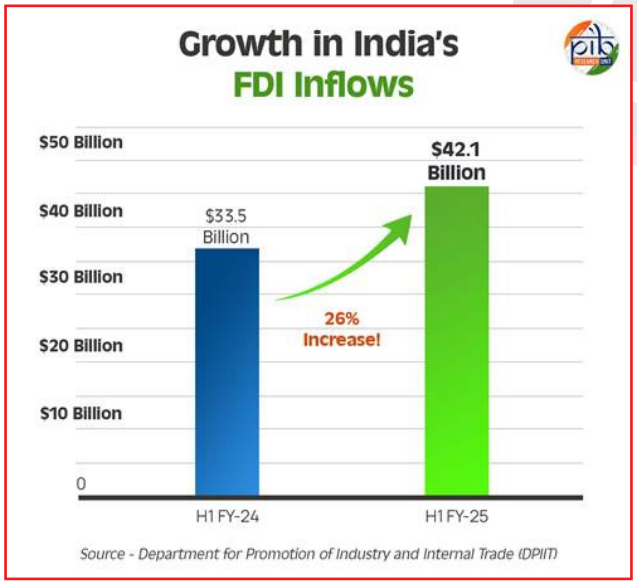
- **Food Insecurity:** India currently applies a **30% tariff to all Canadian lentil exports** which will be eliminated after **India-Canada FTA**.
  - It could lead to a **147% increase** in Canada's exports over five years, threatening India's goal to boost **domestic pulse production** and reduce import dependency.

India Surpasses USD 1 Trillion in FDI

Why in News?

India has surpassed **USD 1 trillion in Foreign Direct Investment (FDI) inflows since 2000,** highlighting its growing appeal as a global investment hub.

- This milestone is further supported by a **26% rise in FDI to USD 42.1 billion in the first half of the current financial year 2024-25,** reflecting the impact of strategic initiatives, policy reforms, and enhanced global competitiveness.



Source - Department for Promotion of Industry and Internal Trade (DPIIT)

What Factors are Driving India's FDI Growth?

- **Competitiveness and Innovation:** India's **World Competitive Index 2024** ranking improved to 40th from 43rd in 2021.
  - In the **Global Innovation Index 2023,** India secured **40th place** out of 132 economies, a significant rise from 81st in 2015.
  - **Progress in innovation and competitiveness** has positioned India as a global hub for innovation-driven investment.
- **Global Investment Standing:** India ranked 3rd globally for **greenfield projects** with 1,008 announcements (World Investment Report 2023).
  - International project finance deals in India also increased by **64% making it the recipient of the second-largest** number of international finance deals.
  - These figures highlight India's growing global investment prominence.
- **Improved Business Environment:** India improved its business environment significantly, rising from **142nd in 2014 to 63rd in the 2020 World Bank Doing Business Report.**
  - This reflects efforts to simplify regulations, and reduced bureaucratic hurdles have boosted investor confidence.
- **Policy Reforms:** The **2024 amendment to the Income Tax Act, 1961** abolished **angel tax** and **reduced the income tax rate for foreign companies** to simplify compliance for startups and investors.
- **Initiatives to Boost FDI:**
  - **Bilateral Investment Treaty (BIT) with UAE**: The signing of a **BIT with the UAE** aims to increase investor confidence and stimulate investments aligned with the **'Atmanirbhar Bharat' vision.**
  - **Production Linked Incentive (PLI) Scheme**: The **PLI scheme** supports manufacturing sectors, driving FDI in the white goods sector.
  - **Make in India Initiative**: Between 2014-2022, the **Make in India initiative** boosted FDI in the manufacturing sector by 57%.
  - **Foreign Investment Facilitation Portal (FIFP)**: The **FIFP** streamlines the FDI approval process by offering a **single interface for investors,** speeding up approvals and facilitating smoother foreign investment inflows.
  - **PM Gati Shakti**: Measures like **PM Gati Shakti** aim to further boost FDI by improving infrastructure, and connectivity.

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Note:

- **Key Sectors with FDI Liberalization:** India has made significant strides in liberalizing FDI across multiple sectors to attract global investments.
  - The **space sector allows 100% FDI**, the **Defence sector has raised its FDI cap to 74%** through the automatic route and 100% via government approval.
  - The **pharmaceutical sector permits 74% FDI in Brownfield projects,** and **civil aviation allows 100% FDI in brownfield airport projects**.
  - Retail, insurance, and telecom sectors have also seen increased FDI limits, with significant reforms aimed at enhancing infrastructure and boosting exports.
  - The textile sector benefits from the **National Technical Textiles scheme** and PLI initiatives, further promoting FDI.

What is Foreign Direct Investment?

- **About:** FDI refers to an investment where a company or individual from **one country makes an investment in a business** or establishes a controlling interest in a business **in another country.**
  - This involves more than just capital, it also brings in **expertise, technology, and skills,** which can contribute to the economic development of the host country.
- **Types of FDI:**
  - **Greenfield Investment:** Creating new business operations from the ground up, offering high control and customization.
  - **Brownfield Investment:** Expanding through mergers, acquisitions, or joint ventures by utilizing existing facilities.
    - The **control may not be as high as in Greenfield investments,** as the organisation is leveraging existing structures, but still allows significant influence over the operation.
- **FDI in India:**
  - **Governance:** FDI in India is governed by the **Foreign Exchange Management Act (FEMA), 1999,** and is administered by the **Department for Promotion of Industry and Internal Trade (DPIIT),** under the **Ministry of Commerce and Industry.**
  - **FDI Entry Routes:** FDI under sectors is permitted either through the **Automatic route or Government route.**
    - Under the Automatic Route, the non-resident or Indian company **does not require any approval from the Government of India.**
    - Whereas, under the Government route, **approval from the Government of India is required prior to investment.**
      - Proposals for foreign investment under the Government route are considered by the respective Administrative Ministry/ Department.
  - **Sectors Under the Automatic Route:** Agriculture & Animal Husbandry, Air-Transport Services, Auto-components, Automobiles, Biotechnology (Greenfield), E-commerce Activities, Renewable Energy, and various other sectors
  - **Sectors Under the Government Route:** Banking & Public Sector, Broadcasting Content Services, Food Products Retail Trading, Satellite Establishment and Operations.
  - **FDI Prohibition in India:** FDI is strictly prohibited in sectors like **atomic energy generation, gambling and betting, lotteries, chit funds, real estate, and the tobacco industry.**
  - **India's Top FDI Sources:** India received the highest FDI from Singapore in 2023-24, followed by Mauritius, United States, Netherlands and Japan.

Note: In order **to curb opportunistic takeovers/ acquisitions** of Indian companies due to the **Covid-19** pandemic, Government **amended the FDI policy 2017 vide Press Note 3 (2020).**

- It required entities from **countries sharing a land border with India**, or whose beneficial owner is from such countries, **can only invest in India through the Government route.**
- For the purpose of Press Note 3, **India recognises Pakistan, Afghanistan, Nepal, Bhutan, China (including Hong Kong), Bangladesh and Myanmar as countries sharing land border with India (Bordering Countries).**

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Note:

FDI and FPI



Foreign Direct Investment (FDI)

- ***About:***
  - Investment made by foreign entities/individuals in businesses and assets located in a different country
- ***FDI Routes:***
  - Automatic Route:
    - No prior government approval required
    - Up to 100% allowed in non-critical sectors
  - Government Approval:
    - Necessary in certain sectors or for investments above specific thresholds
    - Administered by Department for Promotion of Industry and Internal Trade (DPIIT) and RBI
- ***Examples of Approval via Auto and Govt Route:***
  - Banking (Private sector): up to 49% (auto) + above 49% and up to 74% (Govt)
  - Defence: up to 74% (auto) + above 74% (Govt)
  - Healthcare (Brownfield): up to 74% (auto) + above 74% (Govt)
  - Telecom Services: up to 49% (auto) + above 49% (Govt)
- ***Foreign Investment Promotion Board (FIPB):***
  - Comes under Ministry of Finance
  - Responsible for processing FDI proposals - facilitated by Foreign Investment Facilitation Portal (FIFP)
  - Making recommendations for Government approval

Govt's prior approval is mandatory for FDIs from countries sharing land border with India (China, Bangladesh, Pakistan, Bhutan, Nepal, Myanmar and Afghanistan)

- ***India's Top 5 FDI Sources (FY 2022-23):***
  - Mauritius
  - Singapore
  - USA
  - Netherland
  - Japan
- ***India's Top Sectors Attracting FDI (FY 2022-23):***
  - Services Sector
  - Computer Software & Hardware
  - Trading
  - Telecommunications
  - Automobile Industry

Foreign Portfolio Investment (FPI)

- ***About:***
  - Investments made by foreign individuals, institutions, or funds in financial assets
  - Known as Fly by Night or Hot Money
- ***Imp Features:***
  - Purchase of financial assets occur without gaining ownership
  - Passive investment approach
  - Investors earn returns through dividends, interest, and capital appreciation
- Example:
  - Stocks, Bonds etc.
- Regulatory Body:
  - Securities and Exchange Board of India (SEBI)

Difference between FDI and FPI

Features	*FDI*	*FPI*
Nature of Investment	Long-term	Short-term
Objective	Long-term presence in a foreign country	Earning quick returns on investments
Control	Significant (over the invested entity)	No or limited control
Investments in	Tangible assets (e.g., factories, buildings)	Financial assets (e.g., stocks, bonds)
Returns	Profits, Dividends, and Capital appreciation	Dividends, Interest, and Capital appreciation
Policy Regulations	Govt policies and sector -specific regulations	Flexible regulations and easier entry/exit
Impact on Economy	Job creation, technology transfer, and economic growth	Short-term liquidity and impact on stock market performance

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What is the Significance of FDI?

- **Employment and Economic Growth:** FDI stimulates **job creation,** reduces **unemployment,** and enhances income levels, contributing to overall economic growth.
  - FDI infuses capital, increasing tax revenue, and improving infrastructure.
  - For instance, the entry of global companies like **Amazon and Walmart (through Flipkart)** has created numerous jobs in the retail and logistics sectors.
- **Human Resource Development:** Exposure to **global skills and technologies** improves workforce quality, benefiting the wider economy.
  - For example, the establishment companies like IBM and Microsoft in India have enhanced the **skill set of the local workforce.**

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Note:

- **Development of Backward Areas:** FDI helps transform underdeveloped regions into industrial hubs, driving regional economic progress.
  - The automobile hub in TamilNadu, with investments from companies like Hyundai and Ford, has significantly boosted the local economy.
- **Increase in Exports:** FDI may lead to the establishment of **export-oriented units,** enhancing a **country's export potential.**
  - For example, India's IT sector, which receives significant FDI from companies like Accenture, has become a major industry, exporting software services to clients worldwide.
- **Exchange Rate Stability:** Continuous FDI inflows provide **foreign exchange, supporting currency stability**.
  - The steady inflow of FDI in key sectors like **telecommunications and pharmaceuticals** helps maintain a stable exchange rate.
- **Creation of a Competitive Market:** FDI fosters competition, drives innovation, and offers consumers a broader range of products at competitive prices.
  - The entry of **global brands like IKEA** has increased competition in the retail sector, benefiting consumers.

What are the Concerns Regarding the FDI?

- **National Security:** FDI in strategic sectors, such as defence or telecommunications, can pose national security risks.
  - For example, concerns have been raised about **Chinese investments in critical infrastructure in various countries.**
- **Economic Dependence:** Heavy reliance on FDI can make a **country vulnerable to economic fluctuations** in the investing country.
  - This can **lead to instability** if the foreign investor decides to withdraw or reduce their investment.
  - This is a concern in **sectors like banking, where foreign entities might prioritize their interests over national ones**.
- **Profit Repatriation:** Foreign companies often **repatriate profits back to their home countries,** which can limit the economic benefits for the host country. This can result in a net outflow of capital.
- **Impact on Local Businesses:** Large foreign companies **can outcompete local businesses**, leading to closures and job losses.
  - This is particularly concerning in developing economies where local businesses may not have the resources to compete.
- **Environmental Concerns:** Foreign investments, especially in extractive industries, can lead to **environmental degradation.**
  - There have been instances where foreign companies like PepsiCo have been accused of **not adhering to local environmental regulations.**
- **Labor Exploitation:** There are concerns that foreign companies might exploit **local labor by paying lower wages or not adhering to labor laws.** This can lead to poor working conditions and social unrest.

Switzerland Suspends MFN Status to India

Why in News?

Switzerland has decided to **rescind its unilateral application of the most-favoured-nation (MFN) clause** in its **Double Tax Avoidance Agreement (DTAA)** with India.

- Switzerland will revert to the earlier **withholding tax rate** of **10%** on Indian entities starting **1st January 2025**.

What are Key Facts Regarding MFN Clause in DTAA?

- **DTAA between India and Switzerland: DTC IN-CH (India-Switzerland Direct Tax Convention)** was signed on **2nd November 1994**, to avoid double taxation on income between India and Switzerland. It was revised in **2000** and **2010.**
  - **Article 11** of the **2010 protocol** contains the **MFN clause**, which forms the basis for **withdrawal of the MFN status by Switzerland under DTAA**.

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Note:

FACT SHEET

Nov 2, 1994: Switzerland and India sign the original Double Taxation Convention (DTC IN-CH)

Feb 16, 2000: First amending protocol to the DTC IN-CH

Aug 30,2010: Second amending protocol to the DTC IN-CH

May 13, 2011: India-Colombia Double Taxation Agreement signed; Lower dividend rates included

July 26, 2011: India-Lithuania Double Taxation Agreement signed; 5% withholding tax included

July 5, 2018: Lithuania joined OECD

April 28, 2020: Colombia joined OECD

2021: Delhi High Court upholds application of residual tax rates considering MFN clause

October 19, 2023: Supreme Court of India reverses Delhi High Court's ruling

- **MFN Clause in Protocol:** The MFN clause ensures that **lower tax rates** offered by India to any **third-country** Organisation for Economic Cooperation and Development (OECD) **member** automatically apply to Switzerland as agreed upon after the 2010 protocol.
  - The MFN clause aimed to maintain **parity** in taxation rates.
- **Reason for Switzerland's MFN Withdrawal:** After the 2010 protocol, India signed DTAA with two OECD members i.e., **Lithuania** (5% tax rate on dividends) and **Colombia** (5% general tax rate on dividends).
  - However, the same **concessional tax rate was not extended to Switzerland**.
  - Following the Indian Supreme Court's ruling in 2023, Switzerland acknowledged the **lack of reciprocity** in its MFN clause interpretation and decided to revert to the earlier **10% withholding tax rate** starting 1st January 2025.
- **India's Response:** India claimed that the MFN clause **does not apply automatically** unless officially **notified** under **Section 90 of the** Income Tax Act, 1961.
  - It further argued that the clause applies only to countries that were **OECD members at the time of signing** the 2010 protocol.
  - In October 2023, India's Supreme Court ruled that **Lithuania and Colombia** joining the **OECD after 2010** does not trigger the MFN clause, so India need not lower its dividend tax rates to 5%.
    - **Lithuania and Colombia** joined the OECD in **2018 and 2020** respectively.
- **Future Taxation under DTAA:** From 1st January 2025, the withholding tax rate will be 10% as the MFN clause no longer applies. **5%** tax rate valid for the period **2018-2024**.
- **Impact on Investments and Trade:** Switzerland clarified that this decision will not affect the **free trade agreement** between India and Switzerland or Swiss investments in India.
  - **India and EFTA** have signed the Trade and Economic Partnership Agreement (TEPA) in 2024 under which India will receive **USD 100 billion as foreign direct investment (FDI) in 15 years.**
    - EFTA (European Free Trade Association) consists of Iceland, **Switzerland,** Norway, and Liechtenstein.

India-Switzerland Investment Scenario

- According to the **Ministry of Commerce and Industry** Switzerland's investment flows in India amounted to **USD 9.95 billion between 2000 and 2023** making it the **12th largest investor in India.**
- According to the International Monetary Fund (IMF) Swiss investment stocks in India amounted to **USD 35 billion in 2021.**
  - According to the IMF, **Switzerland** is the **8th largest recipient of Indian FDIs** stocks, amounting to **USD 3.7 billion.**
- Over **330 Swiss companies**, including Nestle, ABB, Novartis, Roche, UBS, and Credit Suisse, have invested in India across sectors like **machinery, pharmaceuticals, finance, construction, sustainable technologies, and ICT services**.
- Nearly **140 Indian companies**, including **TCS, Infosys, HCL Tech, and Wipro**, have investments in about 180 entities in Switzerland, mainly in **technology (32%) and life sciences (21%).**

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Note:

Switzerland

- **Switzerland**, officially the **Swiss Confederation**, is a small **mountainous country** in **Central Europe**, known for **Alps mountains**, lakes, and valleys.
- It is a landlocked country bordered by **France, Italy, Austria, Germany, and Liechtenstein.**
- It has been well-known for centuries for its **neutrality.**
  - As a result, Switzerland, particularly Geneva, is a **popular headquarters location** for international organizations, such as the International Committee of the Red Cross and the United Nations.
  - It is **not** a member of the **European Union and NATO.**
- It is also known for its **secretive banking sector.**



What can be the Impact of Suspension of MFN Status with India?

- **Increased Tax Liabilities:** Indian businesses operating in Switzerland may face **higher tax liabilities** as withholding tax on dividends from Switzerland will rise to **10% from 5%.**
  - **Withholding Tax (retention tax)** is an obligation on the individual (either resident or non-resident) to **withhold or deduct tax** when making payments e.g., in the form of **dividends, interest, and royalties**.
- **Cross-Border Tax Disputes**: The suspension could lead to **disputes** between India and Switzerland regarding the **interpretation of the treaty provisions.**
- **Protectionism in Taxation**: Switzerland's move reflects a **broader trend** of countries, including India, adopting **stricter tax treaty interpretations** to protect domestic revenues.
  - This decision could be seen as part of a global shift where countries are adopting more **protectionist policies** to safeguard their **tax bases.**
- **Evolving International Tax Norms**: The decision may push other countries to follow **uniformity** in tax treaty negotiations, ensuring that all parties align on **essential clauses like MFN.**

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Note:

What is a Double Tax Avoidance Agreement (DTAA)?

- **About:** DTAA is a **bilateral or multilateral agreement** between two or more countries aimed at **avoiding double taxation** of the same income.
  - It ensures that income is not taxed by both the country of **residence** and the country of **source.**
- **Objectives of DTAA**:
  - **Double Taxation Avoidance:** Prevents paying taxes twice on the same income.
  - **Fiscal Evasion Prevention:** Enables information sharing to **combat tax evasion.**
  - **International Trade Encouragement:** Promotes **cross-border business** with clear tax rules and reduced liabilities.
- **Mechanisms of DTAA:**
  - **Residency and Source-based Taxation:** DTAA defines tax rights for both residence and source countries.
  - **Credit Method:** Tax paid in the source country is credited in the residence country.
  - **Exemption Method:** Income is taxed in one country and may be exempt in the other.
- **India's DTAA:** India has one of the largest networks of DTAAs consisting of **over 94 comprehensive DTAAs and eight limited DTAAs.**

What is MFN Status?

- **About: MFN** refers to a **trade status** granted by one country to another, ensuring **non-discriminatory trade** between them.
  - It does not mean **preferential treatment**, but guarantees that the recipient country will not face disadvantages compared to other trade partners of the granting country.
- **MFN and WTO**: MFN is a key principle of **World Trade Organization (WTO) rules**.
  - Under WTO rules, if a country grants special status to one trade partner, this status **must be extended to all WTO members**.
- **Non-Discriminatory Trade:** MFN ensures that countries treat each other equally by offering the **same trade conditions** including:
  - **Lowest** possible **trade tariffs** and trade barriers.
  - Highest import quotas
  - Increased market access
  - Improved conditions for the flow of goods
- **Exceptions to MFN:**
  - **Free Trade Agreements (FTAs):** Countries in a **FTA** offer **special concessions** to each other, excluding non-members.
  - **Regional Trade Agreements (RTAs):** Member countries negotiate **better terms** among themselves, often excluding non-members.

India and the Changing Landscape of Globalisation

Why in News?

Recent geopolitical shifts, such as the ongoing **Russia-Ukraine war**, **conflict in the Middle-east** and deteriorating political relations between **China and the West**, have raised questions about the future of **globalisation** and its implications for countries like India.

- At the same time, India's **vision of Aatmanirbhar Bharat** sparks debates about balancing **self-reliance with global integration.**

Note: Globalisation is the growing interconnectedness of countries through the **exchange of goods**, services, technology, and ideas, driven by advancements in communication, transportation, and **trade liberalisation**.

How has Globalisation Evolved Over Time?

- **The Foundations of Globalisation:**
  - **Early Trade Networks:** Trade routes like the **Silk Road**, **Indian Ocean Trade**, and **Trans-Saharan Trade Routes** connected diverse regions, enabling the exchange of goods such as silk, spices, gold, salt, and ivory.
  - **Cultural and Religious Exchange:** Trade and migration facilitated the spread of religions like **Buddhism, Christianity, and Islam**, while also enabling the exchange of art, architecture, and scientific knowledge across regions.

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Note:

- **Colonialism and Industrialisation: European colonial expansion** and the **Industrial Revolution** connected distant economies through mechanized production and long-distance trade.

➢ **Institutionalizing Globalisation in Post-War Era:**

- **Global Institutions and Cold War Rivalry:** Institutions like the **International Monetary Fund (IMF)**, **World Bank,** and **World Trade Organisation (WTO)**, promoted global trade, while the Cold War created competing blocs like the **North Atlantic Treaty Organization (NATO)** and the **Warsaw Pact.**
- **Decolonisation and New Alliances:** Newly independent countries joined global trade and diplomacy, moving beyond colonial ties through efforts like the **Non-Aligned Movement (NAM).**

➢ **Modern Globalisation:**

- **Technology as a Catalyst:** The rise of the internet and digital communication in the late 20th century enabled instant **global connectivity,** fostering a borderless world through **e-commerce**, **social media**, and the **Internet of Things (IoT).**
- **Emergence of MNCs:** Multinational corporations like Apple, Google, and Toyota exemplify **global supply chains**, spreading production and services across continents while driving innovation, investment, and job creation worldwide.
- **Global Financial Flows:** Economic liberalization boosted **cross-border investments** and global financial market integration, with initiatives like the **Eurozone**, **BRICS**, and **ASEAN** exemplifying regional interdependence within a global framework.
- **Globalisation Resilience:** Despite setbacks like the **2008 financial crisis** and the **Covid-19 pandemic**, global trade and communication rebounded, demonstrating the robustness of global interconnectedness.

What are the Challenges Related to Globalisation in the 21st Century?

➢ **Challenges to Globalization:**

- **Economic Nationalism and Protectionism:** Nationalist governments often adopt protectionist measures such as higher import duties, trade barriers, and subsidies for domestic industries, hindering global trade and investment flows.
  - For instance, **India's Atmanirbhar Bharat** has faced criticism for being inward-looking or protectionist.
- **Geopolitical Conflicts:** Tensions like the **US-China trade war**, **Russia-Ukraine conflict,** and economic sanctions disrupt global supply chains and undermine multilateral cooperation.
- **Economic Inequalities:** Disparities between **developed** and developing nations in terms of market access, technological advancements, and resource **distribution challenge** the inclusiveness of globalization.

➢ **Challenges Posed by Globalization:**

- **Economic Disparities:** Globalization often **benefits wealthy nations** and multinational corporations more, widening income gaps and leaving smaller economies vulnerable.
  - Companies also tend to move production to low-wage countries and countries with less stringent labour laws, raising questions about **job creation versus worker exploitation.**
- **Cultural Erosion:** The spread of global culture often risks **overshadowing local traditions —** the dominance of **Western culture** through global media and **consumerism** threatens local customs, languages, and cultural identities.
- **Environmental Impact:** Increased industrialization, global transportation, and resource exploitation driven by globalization contribute to environmental degradation and **climate change**.

What are India's Achievements in the Era of Globalisation?

➢ **Background:** India embraced globalization in 1991 through economic reforms triggered by a **balance of payments** crisis.

- The reforms included **liberalization, privatization**, and opening up to foreign investments, transforming the economy from protectionism to a market-driven system.

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Note:

- **Economic Contributions:**
  - **IT and Digital Revolution:** India, a global leader in Information Technology, with cities like Bengaluru and companies like Infosys and TCS, has become a **hub for digital services** catering to clients worldwide.
  - **Participation in Global Supply Chains:** India is integrating into global supply chains in sectors like **pharmaceuticals**, **textiles**, and automotive components, supported by initiatives like **Make in India** to boost manufacturing and attract **foreign investments.**
  - **Trade and Investment:** India has expanded trade partnerships with blocs like ASEAN, the EU, and the United States while fluctuating **Foreign Direct Investment (FDI)** inflows reflect its appeal as a global investment destination.
  - **Demographic Dividend:** With a young workforce and a vast diaspora, India significantly contributes to the **global labour market**, particularly in **healthcare** and technology, while **diaspora remittances** bolster its global economic ties.
- **Political and Strategic Role:**
  - **Championing Multilateralism:** India's active participation in global forums like the **United Nations (UN)**, G20, BRICS, and **Shanghai Cooperation Organisation (SCO)**, along with its G20 presidency, highlights its advocacy for developing countries and commitment to inclusive, sustainable growth.
    - India's **QUAD** participation underscores its commitment to a free and **open Indo-Pacific.**
  - **Balancing Powers:** India's strategic positioning enables balanced relations with major powers like the US, Russia, and China,
  - **Soft Power Diplomacy:** India leverages its cultural heritage, including yoga, Bollywood, and traditional cuisine, with initiatives like the **International Day of Yoga** enhancing its global influence and promoting its image as a peace-loving nation.
  - **Security and Defence:** India's contributions to **UN peacekeeping missions** and its defence exports and collaborations with nations like **Israel** and the US underscore its significant role in **global security** and strategic affairs.

How can Nationalism and Globalisation Coexist in India's Development Strategy?

- **Promote Indigenous Products and Culture Globally:** Expand initiatives like **One District One Product** and **Vocal for Local** to export Indian handicrafts**, traditional medicines**, and local goods while leveraging **cultural diplomacy** to strengthen India's **soft power** and integrate traditional crafts into **global value chains.**
- **Lead in Renewable Energy:** Strengthen India's role in the **International Solar Alliance (ISA)** and renewable energy innovations to balance national energy security with global climate action.
- **Leverage Technology for Trade:** Integrate **blockchain, fintech, and digital tools** to modernize trade, ensuring **transparency, efficiency**, and alignment with sustainable development.
- **Diversify Global Partnerships:** Foster resilient ties with **emerging markets** to reduce reliance on a single nation for resources like critical minerals, semiconductors, and renewable energy components, promoting mutual growth.
- **Harnessing the Demographic Dividend:** India can harness its **demographic dividend** by enhancing skills, fostering entrepreneurship, and integrating into global supply chains to drive economic growth.

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Note:

International Relations

Highlights

- *Ind-Aus Economic Cooperation and Trade Agreement*
- *Deep State and Its Impacts*
- *African Union Support and Stabilisation Mission in Somalia*
- *Sri Lankan President's India Visit*
- *India's PM Visit to Kuwait*
- *Eastern Maritime Corridor*
- *Romania and Bulgaria Join Schengen Zone*
- *Nine Years of the Paris Agreement*

Ind-Aus Economic Cooperation and Trade Agreement

Why in News?

The **India-Australia Economic Cooperation and Trade Agreement (Ind-Aus ECTA)** has completed two years, marking a period of significant growth in bilateral trade and economic cooperation.

- Both countries aim to build on this success with strengthened collaboration and ambitious targets, including reaching **AUD 100 billion in trade by 2030.**

What is the Ind-Aus ECTA?

- **About:** The Ind-Aus ECTA is a landmark trade deal between India and Australia, signed in April 2022, and ratified by both nations in November 2022.
  - The agreement aims to foster deeper **economic integration and enhance trade relations** by **reducing tariffs, promoting services exchange**, and boosting investment flows between the two countries.
- **Key Features of the Ind-Aus ECTA:**
  - **Tariff Reductions**: The agreement allows **Australian businesses to export over 85% of goods** to India tariff-free, with the figure rising to 90% by January 2026.
    - Conversely, **96% of imports from India** are now tariff-free, with this number increasing to 100% by 2026.
    - This **tariff liberalization** is expected to benefit both nations by providing **cheaper raw materials,** enhancing global competitiveness, and reducing costs for consumers.
  - **Access to Key Markets**: The ECTA secures **preferential market access for India to Australia's fast-growing market,** which has over 1.4 billion people.
    - For Australia, the agreement offers opportunities in India's **labor-intensive sectors,** including gems and jewelry, textiles, leather, furniture, food, and agriculture.
  - **Services**: The agreement includes commitments in **135 sub-sectors** in services, benefiting industries like business services, communication, construction, and engineering.
    - India's contribution includes **market access to Australia in 103 sub-sectors** and **Most Favoured Nation (MFN) status in 31 sub-sectors.**
  - **Pharmaceutical and IT Benefits**: The agreement fast-tracks approval of medicines and **eliminates double taxation in the IT sector,** giving India's IT companies a competitive edge and saving millions.
  - **Job Creation and Skill Exchange**: The ECTA is expected to create 1 million jobs in India, with

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Note:

benefits for Indian yoga teachers, chefs, and 100,000 students through post-study work visas. This fosters skill exchange and employment opportunities in both countries.

- **Geopolitical Importance:** The ECTA strengthens India-Australia relations, deepening collaboration in strategic groups like the **Quad, Indo-Pacific Economic Framework for Prosperity (IPEF) , and the Supply Chain Resilience Initiative (SCRI),** aligning economic and geopolitical interests.

How has Bilateral Trade Evolved Under Ind-Aus ECTA?

- **Trade Surge**: **Bilateral merchandise trade** has more than doubled since the agreement came into effect. From **USD 12.2 billion in 2020-21,** trade surged to USD **26 billion in 2022-23**.
  - Trade momentum remains strong, with India's exports to Australia growing by 14%.
  - In the first eight months of 2024, total merchandise bilateral trade reached USD 16.3 billion, reflecting a robust trade partnership.
- **Export and Import Utilization**: The **preferential import data exchange** between the two countries commenced in 2023, showcasing effective implementation.
  - Export utilization stands at 79%, while import utilization is slightly higher at 84%.
- **Sectoral Growth**: Key sectors such as **textiles, chemicals, and agriculture have benefited** significantly from the agreement.
  - There has been diversification in exports, with new products like **gold studded with diamonds** and turbojets gaining prominence.
- **Raw Materials**: India's imports of raw materials such as metalliferous ores, cotton, and wood have fueled its industries, highlighting the complementary nature of the trade partnership.

What is the Vision for the Future of India-Australia Economic Relations?

- **Comprehensive Economic Cooperation Agreement (CECA)**: Building upon the success of the ECTA, the **India-Australia Comprehensive Economic Cooperation Agreement (CECA)** is now in progress.
  - With 10 formal rounds and multiple inter-sessional discussions completed, CECA aims to advance the trade relationship even further.
- **Trade Target**: Both nations have set an **ambitious target to increase trade to AUD 100 billion by 2030**. This goal demonstrates the shared commitment to deepening bilateral trade ties and fostering mutual prosperity.
- **Global Economic Impact**: With a focus on deeper economic integration, India and Australia are poised to strengthen their partnership and contribute to a more resilient, dynamic global economy.

Other Trade Agreements Between India and Australia

- **Double Taxation Avoidance Agreement (DTAA):** Enforced in 1991 to prevent double taxation of income earned in both countries, reducing tax burdens and facilitating smoother business operations.
- **Bilateral Investment Treaty (BIT):** The 1994 **BIT** was terminated by India in 2017. Both nations are exploring a new investment treaty to safeguard and promote bilateral investments.
- **Sector-Specific Agreements:** Multiple MoUs exist in areas like education, science and technology, defense, and agriculture, fostering collaboration and knowledge exchange.

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Note:



What are the Challenges in India-Australia Trade?

- **Export Competitiveness:** Despite complementary trade profiles, India's competitiveness in Australia remains low compared to global markets.
- **Focus on Other Markets:** India performs better in markets like Saudi Arabia, Kuwait, and Sri Lanka but lags in geographically distant eastern markets like Australia.
- **Non-Tariff Barriers (NTBs)** 32% of the NTBs India faces in Australia arise from **Sanitary and Phyto-Sanitary (SPS) measures,** particularly affecting agricultural produce.
  - The **World Trade Organization (WTO)'s** SPS Agreement ensures that **traded products** between WTO members **do not spread pests and diseases,** and that **food products** do not contain harmful substances or pathogens.

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Note:

- **Absence of a Comprehensive FTA:** Current agreements do not fully address issues like government procurement, digital trade, and rules of origin, leaving gaps in the trade framework.
  - Australia's upcoming federal elections in 2025 have slowed progress on the Comprehensive Economic Cooperation Agreement (CECA), delaying resolutions to trade challenges.

Deep State and Its Impacts

Why in News?

Recently, the controversy over an alleged **transnational deep state** to destabilize governments in different countries raises **critical questions**.

What is a Deep State?

- **About:** It refers to a **shadowy hybrid network** of governmental, corporate, and non-governmental elites who **wield enormous power**, control policymaking, undermine elected politicians, and thwart the interests of common people.
  - Foreign governments **selectively pursue promotion of democracy, human rights**, and liberal values in certain countries **based on their interests.**
- **Background:** It derives its name from the Turkish term **"derin devlet"**, which literally translates to "deep state" in English. In Turkey, it refers to **non-elected elements** dominating the democratically elected government.
  - In **Pakistan**, "deep state" refers to a government controlled by **powerful military leaders.**
- **Functioning of Deep State:**
  - **Regime Change:** Stephen Kinzer's book, ***Overthrow***, chronicled a **"century of regime change" missions** carried out by the US on multiple continents. E.g., the removal of **Bangladesh's Sheikh Hasina regime** is being blamed on the American deep state.
  - **Think Tanks:** The use of **think tanks, NGOs, and biased media** create conditions for political changes favored by the governments. E..g, **Colour revolutions** in Georgia (2003), Ukraine (2004) and Kyrgyzstan (2005).
    - Former Pakistan Prime Minister **Imran Khan** accused foreign powers of **toppling his government.**
    - Colour revolutions organised **unarmed public uprising** aimed at discrediting and replacing a regime.
  - **Conflict and Wars:** Defense companies, such as **Lockheed Martin**, **Raytheon**, **Boeing**, and **Northrop Grumman** hugely benefit from supply of weapons, ammunition, and military technology.
    - Corporates pursue their **interest and plunge nations into wars** only to increase demand for their weaponry. **E.g., demand for weapons** by Ukraine due to the **Ukraine War.**
  - **Economic Influence:** Lobbying for **market access** and regulatory frameworks favorable to businesses of interested countries. E.g.,
    - Pressurising countries at **WTO trade negotiations** to **open their agricultural markets** to imported products.
    - After the **Soviet Union's** fall, former Soviet states and Latin American communist countries shifted from **state-run economies into a free-market economy.**
      - However, it **failed to generate desired results** and resulted in **shock therapy.**
      - Shock therapy is an **economic theory** that says that **sudden, dramatic changes** in national economic policy can turn a **state-controlled economy into a free-market economy**.
  - **Surveillance: Edward Snowden** revealed that the US's National Security Agency (NSA) carried out **surveillance** in developing countries **like in Asia and Africa.**
  - **Media and Narrative:** Reports of **Western media outlets** misrepresents certain issues in India (e.g., **religious intolerance, Kashmir**) to pressure the government on human rights.
    - **Amnesty International** accused the Indian government of adopting **discriminatory laws** against religious minorities.

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Note:

- **Cyber Influence:** Companies with influential **market dominance** like **Google and Facebook** influenced countries regulations on **data privacy and taxation**.
- **Civil Society Movements:** Funding civil society groups like **Greenpeace India** against India's **coal and energy projects** in the name of human rights, or climate change, their alleged involvement in farmers' movement.
  - An **Intelligence Bureau report** has accused **"foreign-funded" NGOs** such as **Greenpeace** to have negatively impacted **GDP** growth by **2-3%**.
- **Damaging International Image:** The countries with vested interest present **Indian ethnic people in devil roles** like villains in movies to frame a bad outlook.
  - Countries also make unsubstantiated allegations against other countries. E.g., **Canada** alleging **India's role** in killing of **Khalistani terrorists.**

Allegation of Deep State of India

- Pulitzer Prize winning journalist **Steve Coll** said that India has a form of **deep state**, mainly involving the **Indian Foreign Service** rather than intelligence agencies or the military.
- Journalist **Josy Joseph** in his book ***The Silent Coup: A History of India's Deep State***, argues that there is **"a State within a State"** that biases against the **weaker sections** of society.
  - He also includes the **National Investigation Agency (NIA)** among the agencies allegedly running the deep state.
- However, such allegations have been rejected by the government which believes in **Panchsheel principles** and **Vasudhaiva Kutumbakam** (The World Is One Family).

How Deep State Influences Countries?

- **Political Philanthropy:** People with huge financial resources use NGOs as a facade like **Open Society Foundation (OSF)** and advocate for **"open societies,"** meaning a push for **regime changes**.
  - They **openly criticized** nations like **India, Russia, China, Israel, and Hungary,** accusing their leaders of fostering a narrative of **totalitarian regimes.**
- **Educational Initiatives:** Many NGOs offer scholarships and fellowships that ensures that those in positions of influence—**bureaucrats, journalists, and policymakers**—are **sympathetic** to their causes like **fake environmental activism** to disrupt economic growth.
- **Interference in Domestic Politics:** The **anti-incumbent sentiment** and criticism of a country's internal policies, particularly regarding **freedom of speech, religious rights, and governance,** have often been amplified by NGOs with vested interests.
- **Financial Leverage:** Deep state also influences **economic policies**. They are involved in major financial events, like **breaking the Bank of England** and contributing to the **Asian Financial Crisis**, using financial leverage to destabilize economies.
  - **Hindenburg Research** accused businesses in developing countries (India and China) of engaging in extensive **accounting fraud, stock price manipulation, and exploiting tax havens** to destabilise India's Stock market. E.g., Allegations against Adani group.
  - Hindenburg also engaged in the practice of **short-selling** i.e., a strategy where the firm takes a **position predicting the decline** of a company's stock price for making profits.

African Union Support and Stabilisation Mission in Somalia

Why in News?

Recently, the **UN Security Council (UNSC)** endorsed the **African Union (AU) Peace and Security Council's** initiative named **African Union Support and Stabilisation Mission in Somalia (AUSSOM).**

- The resolution titled **Resolution 2767 (2024)** aims to address Somalia's security challenges posed by **Somalia's civil war** and terrorist groups such as **Al-Shabaab and Islamic State of Iraq and the Levant.**
- It is similar to UN peacekeeping missions.

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Note: Peace and Security Council (PSC) is the **standing decision-making organ** of the **AU** for the **prevention, management and resolution** of conflicts.

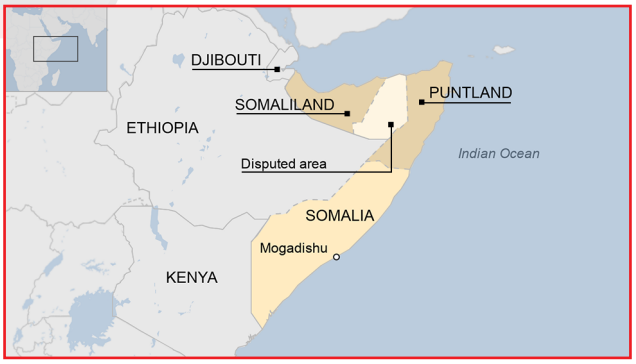
- It is also the key pillar of the **African Peace and Security Architecture (APSA)**, which is the framework for promoting **peace, security and stability** in Africa.
- The **Levant** is the eastern shoreland of the **Mediterranean sea** comprising **Syria, Lebanon, Israel, Jordan, and Palestine.**

What is ATMIS and AUSSOM?

- **About ATMIS: African Union Transition Mission in Somalia (ATMIS)** is a **multidimensional mission (military, police and civilian)**, authorised by the **African Union** and mandated by the **United Nations Security Council.**
  - **Mandate:** It replaces the **African Union Mission in Somalia (AMISOM)** with a clear mandate to fully implement the **Somali Transition Plan (STP)**.
    - STP is a comprehensive guide by Somalia and partners for **transferring security responsibility** from the African Union to the Federal Government of Somalia.
- **About AUSSOM:** It provides for the replacement of the African Union Transition Mission in Somalia (ATMIS), whose mandate ends on **31st December 2024.**
  - **Transitioning Responsibility**: Since 2022, **7,000 ATMIS troops** have been reduced, and AUSSOM continues **supporting Somali forces** in stabilising the nation.
  - **Mandate and Operations**: AU members can deploy **up to 12,626 personnel, including 1,040 police officers**, until June 2025 to combat terrorism and maintain security.
  - **Financing:** A hybrid approach, combining **UN assessed contributions (75%) and African Union/ partner contributions (25%)**, has been proposed to fund the mission to ensure sustainable and predictable funding for African peace operations.
  - **Challenges: Burundi and Ethiopian** troops will **not be taking part** in AUSSOM.
    - **Egypt may take part** in the AUSSOM with which **Ethiopia** has its own **disputes** over a dam it has constructed along the Nile.
      - **Ethiopia** has **good relations** with authorities governing **Somaliland (a breakaway region of Somalia).**
    - The **US** expressed concerns that the **UN disproportionately funded** the mission and abstained from voting in the UNSC.

What is Somalia's Civil War?

- **About:** It began in **1988,** during President **Siad Barre's authoritarian rule.** His regime collapsed in **January 1991**, creating a **power vacuum and chaos**.
- **Fragmentation of Somalia:** After Barre's fall, Somalia split into regions controlled by militias and groups, including **Somaliland,** which declared independence in **1991**, and **Puntland**, which declared partial autonomy in 1998.
  - **Somalia and Ethiopia** have been in a **year-long dispute** over a sea access deal Ethiopia made with the **separatist Somaliland region**.



- **Rise of Clannism:** The clannism system **fueled tensions** in Somalia, hindering government unity and peace efforts, while clan rivalries strained relations between the **Federal Government and regional states**.
  - **Clannism** is the dominance of **clan-based politics,** where loyalty to clan and sub-clan interests often **overrides national unity.**
  - The four main clans in Somalia are **Dorad, Hawiye, Dir and Rahanweym**.

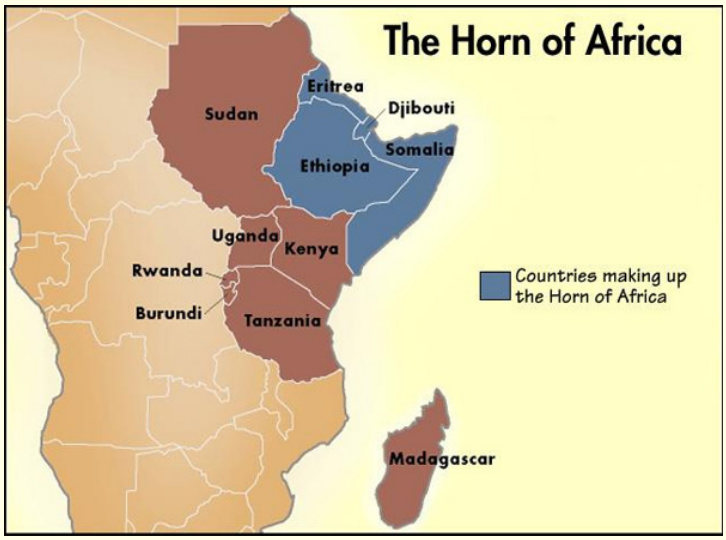
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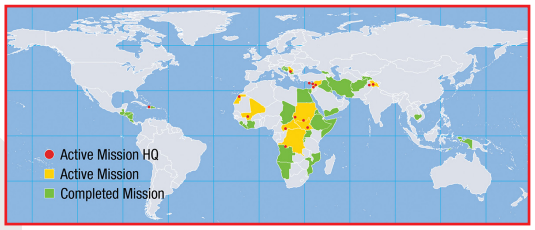
- **Peace Efforts:**
  - **Arta Declaration (2000):** Regional organizations such as the **Intergovernmental Authority on Development (IGAD)** attempted to establish a more representative government.
  - **Transitional Government: Transitional National Government (TNG)** and **Transitional Federal Government (TFG)** were established but were plagued by inefficiency, infighting, and corruption.
- **Rise of Al-Shabaab:** By 2007, the rise of **Al-Shabaab**, an Islamist militant group, escalated the conflict. It is **al-Qaeda's strongest affiliate**.
  - Al-Shabaab's primary goal is to overthrow the **Federal Government of Somalia (FGS)**, expel foreign military presence, and establish a strict interpretation of **Islamic law (Sharia)**.
  - The group advocates for a "**Greater Somalia**," seeking to unite ethnic Somalis across East Africa into a single Islamic state.
    - Greater Somalia would include **Somalia, Somaliland, part of Djibouti and Kenya (Northern areas) and the Ethiopian Ogaden.**

Note: Horn of Africa comprises the countries of **Djibouti, Eritrea, Ethiopia, and Somalia**.



What is the UN Peacekeeping Mission?

- **About:** It is a set of operations led by the UN to help maintain **peace and security** in conflict zones through deployment of **military personnel, police, and civilian experts**.
  - It was established in **May 1948** when the UNSC authorised the deployment of **UN military observers** to monitor the **Armistice Agreement** between **Israel and its Arab neighbors.**
  - UN peacekeepers are often referred to as **Blue Berets or Blue Helmets** because of their light blue berets or helmets.
- **Global Presence:** Over the **past 70 years**, more than **1 million men and women** have served under the UN flag in more than **70 UN peacekeeping operations**.
  - More than **1,00,000 military, police and civilian personnel from 125 countries** currently serve in 14 peacekeeping operations.



- **Effectiveness:**
  - **Success Stories:**
    - **Sierra Leone (1999-2005):** The peacekeepers **disarmed over 75,000 ex-fighters**, including child soldiers, and destroyed 42,000 weapons, greatly aiding the country's stabilization.
    - **Burundi (2004-2006):** UN peacekeepers helped the country recover from ethnic conflict, aiding the transition from **civil war to stability,** and extended their mission to protect these gains.
    - **Liberia (2003-2018):** United Nations Mission in Liberia (UNMIL) brokered peace agreements, oversaw disarmament, and supported **democratic elections** in Liberia.
    - **Sierra Leone (1999 to 2005):** Peacekeepers ended the **country's civil war** and facilitated the implementation of the **Lome Peace Agreement**.
      - The mission's success was driven by the commitment of both

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warring parties to the peace process, its **clear mandate**, and the support from the international community.

- **Failures:**
  - **Somalia (1992-1995):** The **Battle of Mogadishu (1993)** saw US soldiers killed and their bodies paraded, leading to the **swift withdrawal of American and UN forces**.
    - By 1995, the UN withdrew completely, marking the mission a **failure**.
  - **Rwanda (1994):** In 1994, **over 800,000 people, mostly Tutsis ethnic group, were killed** in a genocide.
    - Despite early warnings, the UN failed to intervene or provide enough resources to prevent it.
  - **Srebrenica (1995):** In 1995, UN peacekeepers in **Srebrenica, Bosnia**, failed to prevent the execution of **8,000 Muslim men and boys** by **Bosnian Serb forces**, despite declaring it a **"safe area."**

India's Contribution in UN Peacekeeping Missions

- **India's Role:** India has played a significant role in UN Peacekeeping Missions contributing more troops than any other country, with **over 253,000 personnel** serving in **49 of the 72 UN missions since 1948**.
  - As of **January 2024, around 5,900 Indian troops** are deployed across 12 UN peacekeeping missions.
- **Past Missions:**
  - **Haiti (2017-19):** India contributed two **Formed Police Units (FPU)** with around 280 personnel from BSF, CISF, and Assam Rifles from November 2017 to July 2019, achieving great success.
  - **Liberia (2007-16):** A **125-member all-women police unit** in Liberia inspired a fourfold increase in women applying to join the police.
  - **Sierra Leone (1999-2001):** India contributed two Infantry Battalion groups, two engineer companies, **Attack helicopter unit, and medical unit** among others.
  - **Sudan (2005):** India has contributed two Infantry **Battalion groups, Engineer Company, Signal Company**, among others.
  - **Rwanda (1994-96):** An Infantry Battalion, Signal Company, Engineer Company, Staff Officers, and Military Observers were provided.
  - **Somalia (1993-94):** Indian Army deployed a **Brigade Group comprising 5,000 all ranks** and the Navy deployed four battleships.

Sri Lankan President's India Visit

Why in News?

Recently, the new **Sri Lankan President** was on his first visit to India focusing on enhancing **trade, energy, and maritime cooperation**.

- Discussions with Indian leaders emphasized **Tamil aspirations**, **economic recovery**, and countering **Chinese influence**, reinforcing **India's Neighbourhood First policy** and **SAGAR Vision**.

What are the Outcomes of the Recent Visit?

- **Economic and Trade Agreements**: Proposed **Economic and Technology Cooperation Agreements (ETCAs)** aim to integrate services and technology into trade relations was also discussed during the President's visit to India.
  - India has agreed to **promote Indian Rupee (INR)-Sri Lankan Rupee (LKR) trade settlements** and undertake capacity-building programs, including the **training of 1,500 Sri Lankan civil servants.**
- **Energy Partnership**: India agreed to supply **LNG to Sri Lanka** to address immediate energy needs, while both nations announced an **energy pipeline with the UAE** to enhance regional energy security.
  - **Renewable energy projects** like offshore wind power and grid interconnection were prioritized, alongside developing **Trincomalee** as an energy hub.
- **Infrastructure and Connectivity**: Resumption of **ferry services** and continued development of **Kankesanthurai port**, **housing**, and **digital infrastructure** under India's **"Neighborhood First" policy**.
- **Regional Security Cooperation**: Both countries committed to deepening **security cooperation**, particularly in maritime security.

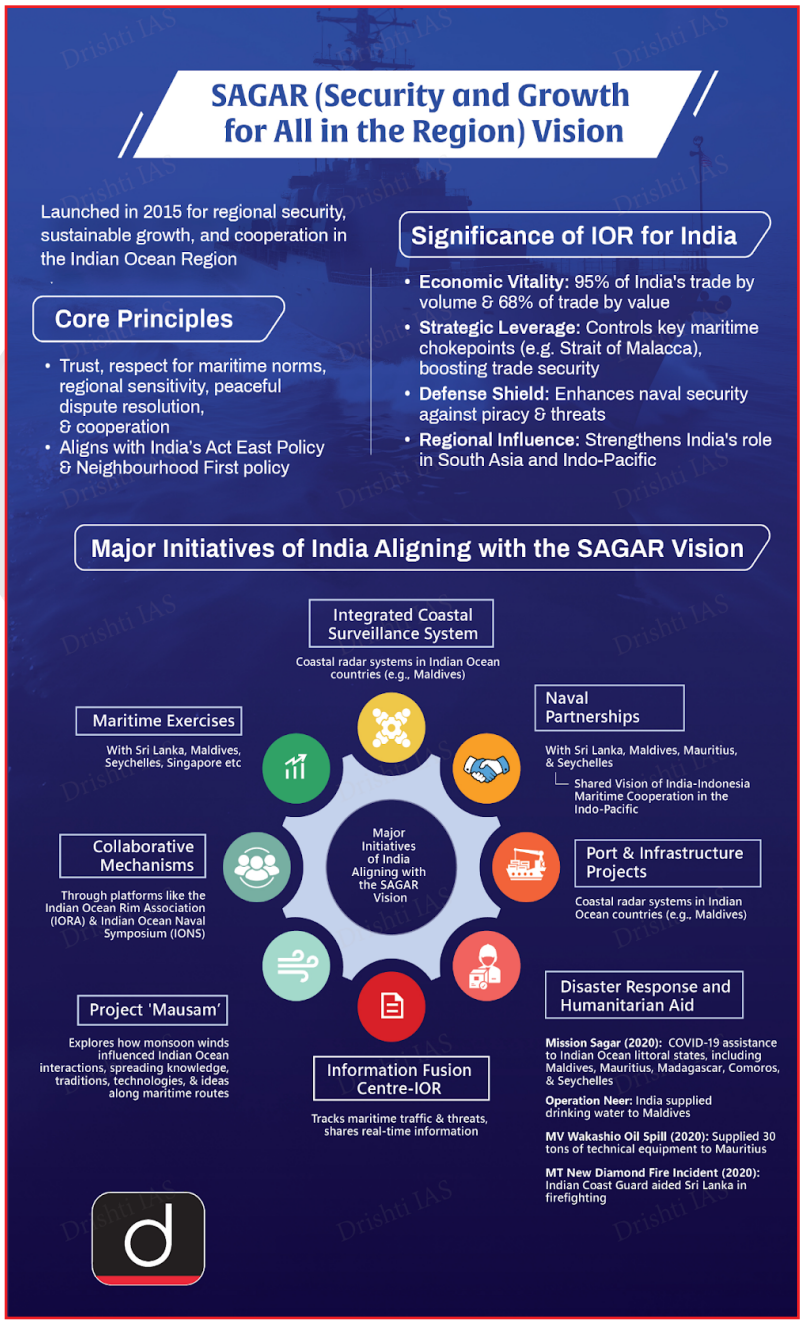
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Note:

- **Financial Support**: India's financial support, including USD 4 billion for food, fuel, and medicines, was crucial in stabilizing Sri Lanka's economy during its crisis.
- **Bilateral Cooperation in Global Forums:** Sri Lanka sought India's support in its bid to join the **BRICS group** and in matters related to the **United Nations Commission on the Limits of the Continental Shelf**.

What are Areas of Cooperation Between India and Sri Lanka?

- **Economic Cooperation:** India is Sri Lanka's largest trade partner in **SAARC**, with bilateral trade reaching **USD 5.5 billion** in FY 2023-24.
  - India exports essential goods while Sri Lanka benefits from the **India-Sri Lanka Free Trade Agreement**.
- **Development Assistance:** India has extended Development Assistance to Sri Lanka through **Lines of Credit (LOCs)** under the **Indian Development and Economic Assistance Scheme (IDEAS)**.
  - As of 2023, over **USD 2 billion** in **Lines of Credits (LOCs)** have been provided to Sri Lanka, supporting key sectors such as **railways**, **hospitals**, **infrastructure**, and **power transmission**.
  - India's **LOCs**, including projects like the **Jaffna Cultural Center** and **Suwa Seriya ambulance services**, strengthen Sri Lanka's **socio-economic framework** and improve infrastructure and livelihoods.
- **Energy Collaboration:** Renewable energy projects, including **hybrid systems in Jaffna**, reflect India's push for **energy security** in the region.
- **Defence and Security:** Defence ties include joint **military exercises** (**Mitra Shakti**) and **naval drills** (**SLINEX**).
  - The installation of a **Maritime Rescue Coordination Centre** demonstrates India's commitment to bolstering Sri Lanka's maritime capabilities.
  - Additionally, India has supported **Sri Lanka's counterterrorism** and environmental **disaster management** efforts.



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Note:

- **Cultural and Educational Exchange:** The **historical and cultural** ties between the nations are reinforced through scholarship programs, **restoration of Buddhist temples,** and the sharing of Indian technologies in governance and education.
- **Maritime Cooperation:** Shared concerns over **illegal fishing** and **sustainable resource management** in the **Indian Ocean** have driven collaborations.
  - **Joint patrols** and **sustainable fishing initiatives** are critical to protecting marine biodiversity and livelihoods.

What are Challenges of Cooperation Between India and Sri Lanka?

- **Fishing Disputes:** Indian fishermen's use of **bottom trawling** sometimes in **Sri Lankan waters** and in surrounding areas has escalated tensions, causing **arrests**, **fines**, and friction in both **coastal communities** and **bilateral diplomacy**.
- **Katchatheevu Island Dispute:** The ownership and use of **Katchatheevu Island** remain contentious, with disputes over enforcement of agreements allowing Indian fishing and pilgrimage rights, straining bilateral relations.
- **Ethnic and Political Issues:** India's support for the Tamil population in Sri Lanka has been met with resistance from certain political factions.
  - The delay in implementing the **13th Amendment** to devolve power to Tamil-majority areas has been a longstanding grievance.
- **Geopolitical Rivalries:** China's increasing influence in Sri Lanka, especially in infrastructure projects like the **Hambantota Port**, challenges India's strategic interests. India views Chinese-backed projects as threats to its regional security.
- **Maritime Boundary Issues:**The dispute over the **Afanasy Nikitin Seamount** highlights overlapping claims in international waters, with both nations using international legal mechanisms, potentially leading to diplomatic friction.



India's PM Visit to Kuwait

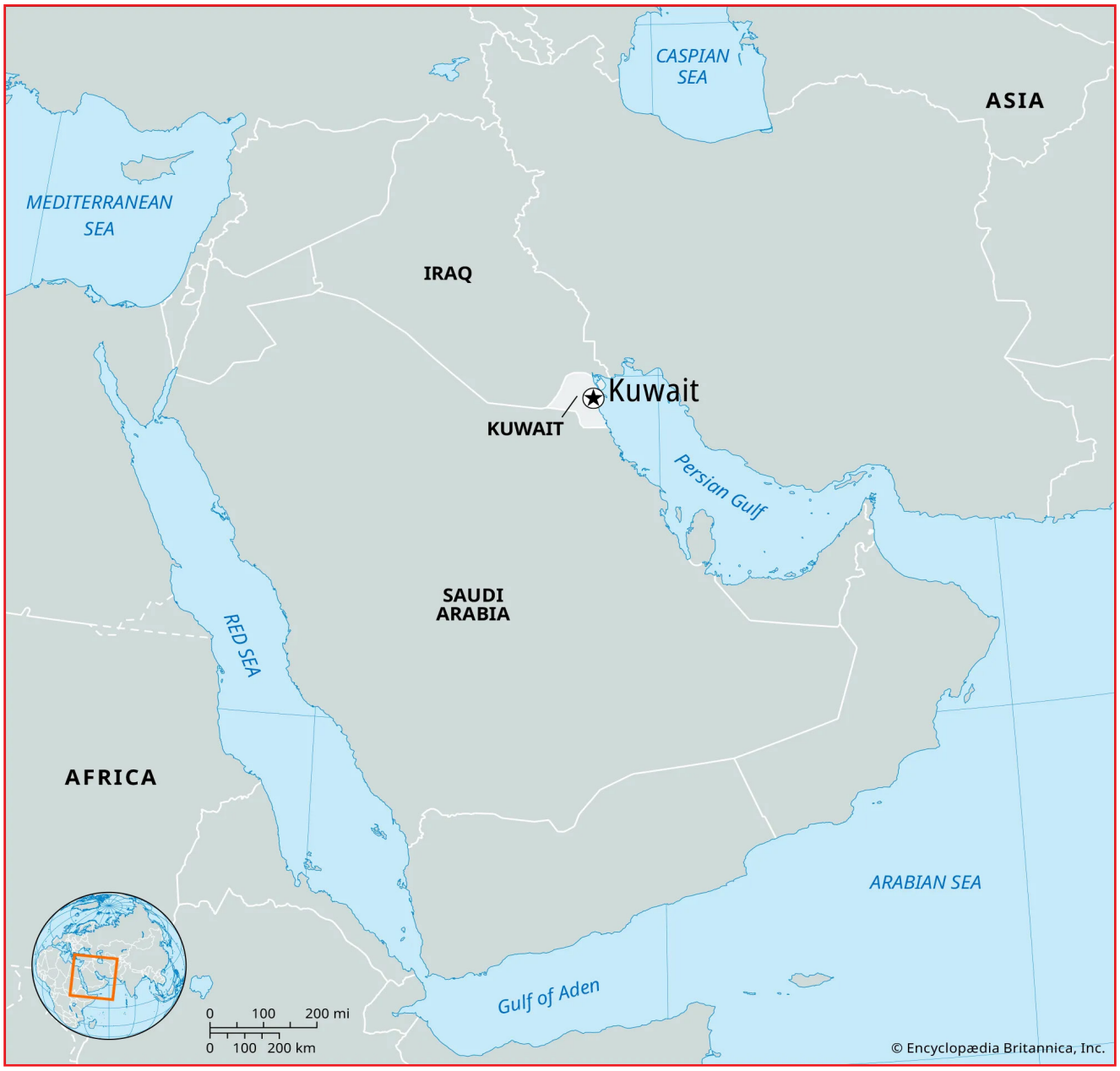
Why in News?

India and Kuwait have elevated their **bilateral relationship to a strategic partnership** during Prime Minister Narendra Modi's historic visit to the **Gulf nation**, marking the second visit by an Indian Prime Minister since **Indira Gandhi's** visit in 1981.

- This visit signifies a renewed commitment to trade, defence, and broader cooperation between the two nations.

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What are the Key Highlights of the PM's Visit to Kuwait?

- **Order of Mubarak Al Kabeer:** PM Shri Narendra Modi was awarded the **'Order of Mubarak Al Kabeer,'** the **highest honor of Kuwait,** in recognition of his contributions to strengthening bilateral ties.
- **Strategic Partnership:** The two sides elevated their relationship to a **'Strategic Partnership,'** expanding collaboration across political, trade, defense, energy, and cultural domains.
- **Defence Cooperation:** Signed an MoU on Defence Cooperation, focusing on joint military exercises, training, coastal defense.
- **Cultural and Sports Cooperation:** India and Kuwait signed a **Cultural Exchange Programme for 2025-2029** and an Executive Programme on Sports Cooperation for 2025-2028.

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- **Joint Commission on Cooperation (JCC):** A JCC was established to monitor bilateral relations, chaired by the **Foreign Ministers of both countries.**
  - New **Joint Working Groups (JWGs)** were set up in key areas such as education, trade, investments, agriculture, and **counter-terrorism.**
- **Technology and Emerging Sectors:** Emphasised collaboration in semiconductors, **artificial intelligence**, **e-Governance**, and sharing best practices.
- **Energy Cooperation:** Both sides agreed to move from a **buyer-seller relationship** to a **comprehensive partnership** in the energy sector, with a focus on oil, gas, refining, and **renewable energy.**
- **Multilateral Cooperation:** Kuwait's membership in **International Solar Alliance (ISA)** was welcomed by India.
  - The PM of India congratulated Kuwait on its **Gulf Cooperation Council (GCC)** Presidency and emphasized the importance of concluding the **India-GCC Free Trade Agreement.**
  - Both leaders emphasized the need for a **reformed United Nations (UN)** **to tackle global challenges effectively.**

Order of Mubarak Al-Kabeer

- It is conferred on Heads of State, sovereigns of foreign countries, and members of royal families.
- Instituted in **1974**, the award honors **Mubarak Al Sabah**, also known as **Mubarak Al-Kabeer,** who ruled Kuwait from 1896 to 1915.
  - Mubarak Al Sabah played a pivotal role in shaping Kuwait's future, securing greater autonomy from the **Ottoman Empire.**
- Previous recipients of the Order of Mubarak Al-Kabeer include notable figures such as **Queen Elizabeth II, former US Presidents George HW Bush and Bill Clinton, King Salman of Saudi Arabia,** and former French President Nicolas Sarkozy.



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How are India-Kuwait Relations?

- **Historical Ties:** India and Kuwait share a long-standing relationship, dating back to **pre-oil times** when **maritime trade** formed the foundation of Kuwait's economy.
  - The **Indian Rupee was once the legal tender in Kuwait until 1961,** emphasizing their strong economic ties.
  - Historically, Kuwait traded goods like **dates, pearls, and Arabian horses** with India. However, after the **discovery of oil**, Kuwait's economy shifted, **with oil now contributing to about 94%** of its state income.
- **Economic Partnership:** Kuwait is one of India's top trading partners, with bilateral trade valued at **USD 10.47 billion** in 2023-24.
  - **Kuwait is India's 6th largest crude oil supplier,** fulfilling **3% of the country's energy needs.**
  - Indian exports to Kuwait surpassed **USD 2 billion for the first time,** reflecting growing trade ties.
  - **Kuwait Investment Authority's** investments in India exceed **USD 10 billion.**
- **Indian Diaspora in Kuwait:** With a population of around 1 million, the Indian community is the **largest expatriate group in Kuwait.**
  - The community plays a vital role in the Kuwaiti economy, particularly in sectors like healthcare, engineering, retail, and business.

What is the Importance of Kuwait in India's Foreign Policy in West Asia?

- **Economic Contributions:** The remittances from Indian expatriates in Kuwait inject billions of dollars into the Indian economy, which is crucial for **economic stability and growth.**
- **Economic Collaboration: Kuwait's Vision 2035,** aimed at diversifying its economy **beyond oil,** presents opportunities for India to collaborate in emerging sectors such as renewable energy, infrastructure, and technology.
  - This aligns with India's development goals, particularly the **Viksit Bharat 2047.**
  - Additionally, the energy security from Kuwait is vital for India's industrial **growth and domestic needs.**
- **Geopolitical Influence:** Kuwait's location in the Middle East and its role in the **GCC** make it a key player in regional politics.
  - India's engagement with Kuwait helps it maintain a balanced and influential presence in West Asia
- **Labour and Skill Development:** Kuwait's demand for a **skilled workforce, as part of its Vision 2035**, aligns with India's strengths in skill development, offering a chance for **more Indian workers to contribute to Kuwait's growth** in various sectors, such as healthcare, technology, and infrastructure.

What is the Gulf Cooperation Council?

- **About:** The GCC, established in 1981, is a regional political and economic organization consisting of six Arab states: **Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates.**
  - The GCC was established in response to regional tensions, notably the **Iranian Revolution (1979)** and the **Iraq-Iran War (1980–1988).**
    - It aims to promote unity and address shared challenges in the Gulf region.
- **Organizational Structure:** The **Supreme Council** is the **highest decision-making** body of the GCC, consisting of heads of state from each member country.
  - The **presidency of the Supreme Council rotates annually** based on the alphabetical order of member countries.
- **Headquarters:** Riyadh, Saudi Arabia.
- **India's Relations with GCC:** The GCC is a key trading and investment partner for India, with significant investments from the UAE and Saudi Arabia.
  - In FY 2023-24, India-GCC bilateral trade stood at **USD 161.59 billion**. India's exports were USD 56.3 billion and India's imports were USD 105.3 billion.
    - The GCC remains a key market for India's exports, including oil, and hosts a large Indian workforce.
    - The **UAE ranks as India's 3rd largest trading partner** and **2nd largest export destination**.
  - Around **8.9 million Indian expatriates in the GCC** contribute significantly to **remittances,** which, despite a recent decline, remain a major income source for India.

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Eastern Maritime Corridor

Why in News?

The recent launch of the **Eastern Maritime Corridor** between **Chennai and Vladivostok** (Russia) has enhanced India-Russia trade by reducing shipping time and costs.

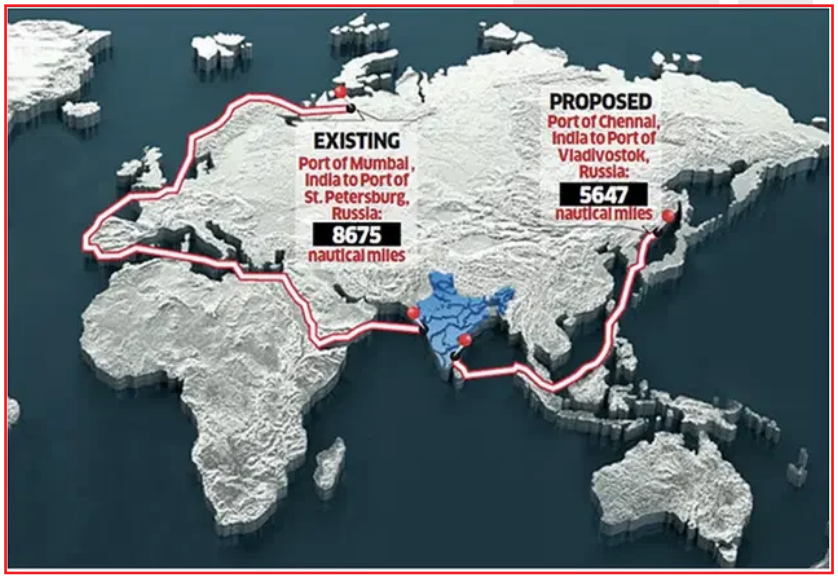
- This new route is crucial for increasing trade in sectors like crude oil, coal, fertilizers, and metals, with India becoming the largest importer of Russian oil.
- The corridor is expected to significantly reshape bilateral trade dynamics, promoting economic and strategic cooperation between the two nations.

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What is the Eastern Maritime Corridor (EMC)?

- **About:**
  - The **Chennai-Vladivostok Eastern Maritime Corridor (EMC)** is a sea link connecting the **east coast of India (Chennai Port)** with **ports in the far-east region of Russia (Vladivostok Port).**
  - It passes through the **Sea of Japan, the South China Sea,** and the **Malacca Strait.**
- **Significance**:
  - **Reduced Logistics Costs**:
    - EMC has reduced the shipping distance from 8,675 nautical miles (via the traditional **St Petersburg-Mumbai route** through Europe) to **5,600 nautical miles**, cutting transit time from over 40 days to just **24 days.**
    - This is significant for India as it has surpassed China to become the largest buyer of Russian oil in July 2024.
- India imports over 85% of its crude oil demand.



  - **Diversification of Trade:**
    - The corridor facilitates not only crude oil shipments but also **coal, LNG, fertilizers,** and other commodities, **broadening the trade relationship.**
  - **Boost to India's Maritime Sector**:
    - The corridor **supports India's maritime sector**, which handles around **95% (by volume)** and **70% (by value)** of the country's trade, contributing to its growth and efficiency.
    - This new route aligns with **India's Maritime Vision 2030**, which includes over 150 initiatives aimed at transforming the maritime sector.
  - **Strategic Importance**:
    - Vladivostok is the **largest Russian port on the Pacific Ocean**, and the corridor passes through the **South China Sea** and strengthens India's strategic presence **addressing China's dominance** in the region.
    - The Chennai-Vladivostok corridor is aligned with other initiatives, such as the **Northern Sea Route** and the **International North-South Transport Corridor (INSTC).**
  - **Advancing India's Act Far East Policy**:
    - The EMC **boosts India's access to Russian resources** and strengthens its position in the Pacific trade network.
    - By enhancing regional connectivity, it promotes trade with **East Asia, ASEAN, and Russia**, facilitates multimodal transport, and supports infrastructure development.
- This also opens avenues for trade agreements, cultural exchanges, and tourism, positioning India as a key player in the region.

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Note:

What are Other Maritime Corridors Significant for India?

- **International North-South Transport Corridor (INSTC)**:
  - INSTC is a **7,200 km multimodal transit route** linking the **Indian Ocean and Persian Gulf** to the Caspian Sea via Iran, and further to northern Europe **via St. Petersburg, Russia.**
    - It was launched in 2000 through a trilateral agreement between **India, Iran, and Russia**, it has expanded to include **13 member countries**.
  - It connects s**hip, rail, and road routes** between **India, Iran, Azerbaijan, Russia, Central Asia, and Europe**.
    - The corridor has 3 routes: the Central Corridor (India to Russia via Iran), the Western Corridor (Azerbaijan-Iran-India), and the Eastern Corridor (Russia to India through Central Asia).
  - In June 2024 Russia sent **two trains carrying coal to India** through the INSTC for the first time.

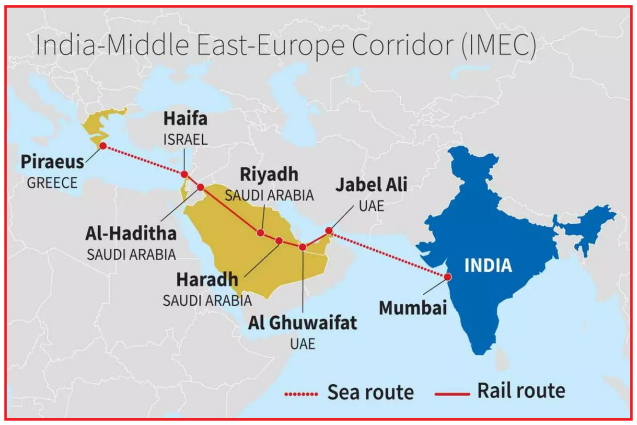


- **India-Middle East-Europe Economic Corridor (IMEC) Project**:
  - The **IMEC Project** was announced at the **G20 Summit** (2023), the IMEC aims to **connect India, the Middle East, and Europe** through a network of **railways, roads, and ship-to-rail links**.
  - It includes two corridors: the East Corridor linking India to the Arabian Gulf, and the Northern Corridor connecting the Gulf to Europe.
  - The project will also feature an electricity cable, a hydrogen pipeline, and a high-speed data cable, fostering regional integration across Asia, Europe, and the Middle East.

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- **Northern Sea Route (NSR):**
  - The NSR **is a 5,600 km Arctic shipping route** connecting the **Barents and Kara Seas to the Bering Strait.**
  - It offers up to **50% shorter transit times than traditional routes** like the Suez Canal and gained attention after the **2021 Suez Canal blockage**.
    - It has also become an area of focus, with both nations working on projects **related to Arctic shipping and polar navigation**, providing a strategic **shipping route between Western Eurasia and the Asia-Pacific**.
  - **India is interested in the NSR** due to g**rowing imports of Russian crude oil** and coal. The NSR **is also key for balancing Russia-China influence in the region.**



What are the Key Aspects of India-Russia Relations?

- **Strategic Partnership:** India and Russia formalized their strategic partnership in 2000, upgraded to a **Special and Privileged Strategic Partnership** in 2010.
  - The goal is to achieve USD 50 billion in investment and USD 30 billion in trade by 2025, with a target of USD 100 billion by 2030.
- **Bilateral Trade and Investment:** India-Russia trade reached **USD 65.7 billion** in FY 2023-24. The Key Import and Export From Russia (FY 2024):
  - **By Value:**
    - **Imports:** Crude oil, project goods, coal, coke, vegetable oils, and fertilizers.
    - **Exports:** processed minerals, iron and steel, tea, marine products, and coffee.
  - **By Quantity:**
    - **Imports:** Petroleum crude, coal, fertilizers, vegetable oil, and iron and steel,
    - **Exports:** Processed minerals, iron and steel, tea, granite, and processed fruits and juices.
  - Bilateral investments surpassed USD 30 billion in 2018, with a revised target of USD 50 billion by 2025.
  - **Indo-Russian JV for Vande Bharat Sleeper:** The **Indo-Russian JV Kinet** has taken over the **Marathwada Rail Coach Factory** in Latur to manufacture 1,920 **Vande Bharat Sleeper coaches**.
- **Energy Cooperation:** Russia plays a **key role in India's energy security,** with both countries cooperating extensively in the oil and gas sectors.
  - Russia's state-owned energy firms have made significant **investments in India's energy infrastructure**, while Indian companies are involved in oil exploration projects in Russia.
- **Defense and Security Cooperation:** India and Russia share long-standing defense cooperation, guided by the **IRIGC-M&MTC mechanism**, with regular bilateral and multilateral military exercises like **INDRA** and **Vostok 2022**.
  - Key defense projects include the supply of **S-400 systems**, licensed production of **T-90 tanks** and

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Su-30 MKI, MiG-29 and Kamov helicopters, INS Vikramaditya, Ak-203 rifles, and BrahMos missiles.

- The cooperation has evolved from a buyer-seller model to **joint research, development,** and production of advanced defense technologies.

➢ **Science and Technology:** It spans areas like space (Gaganyaan), nanotechnology, and quantum computing.

- Both jointly developed the Kudankulam Nuclear Power Plant. Their partnership is guided by the 2021 roadmap for innovation, aiming to commercialize technologies and support joint projects.

➢ **Geopolitical and Regional Cooperation:**

- The India-Russia relationship is underpinned by shared interests in global and regional security, including cooperation in multilateral forums like the United Nations and BRICS.
- Russia's increasing focus on the Asia-Pacific region aligns with India's strategic priorities, particularly in the context of balancing China's maritime influence.

➢ **Economic Diplomacy and Taxation Agreements:**

- The India-Russia Double Taxation Avoidance Agreement (DTAA), effective since 1996, is a key instrument in fostering **cross-border investments and trade** by eliminating **double taxation** and preventing **fiscal evasion**.

Romania and Bulgaria Join Schengen Zone

Why in News?

Bulgaria and Romania will join the European Union's Schengen zone on 1st January 2025. Both nations, which have been EU members since 2007, will finally be able to join the borderless area, allowing for seamless travel and movement across Europe.

What is the European Union's Schengen Zone?

➢ **About:** The Schengen Zone is named after a small village in Luxembourg, where the **Schengen Agreement (1985) and Schengen Convention (1990)** were signed.

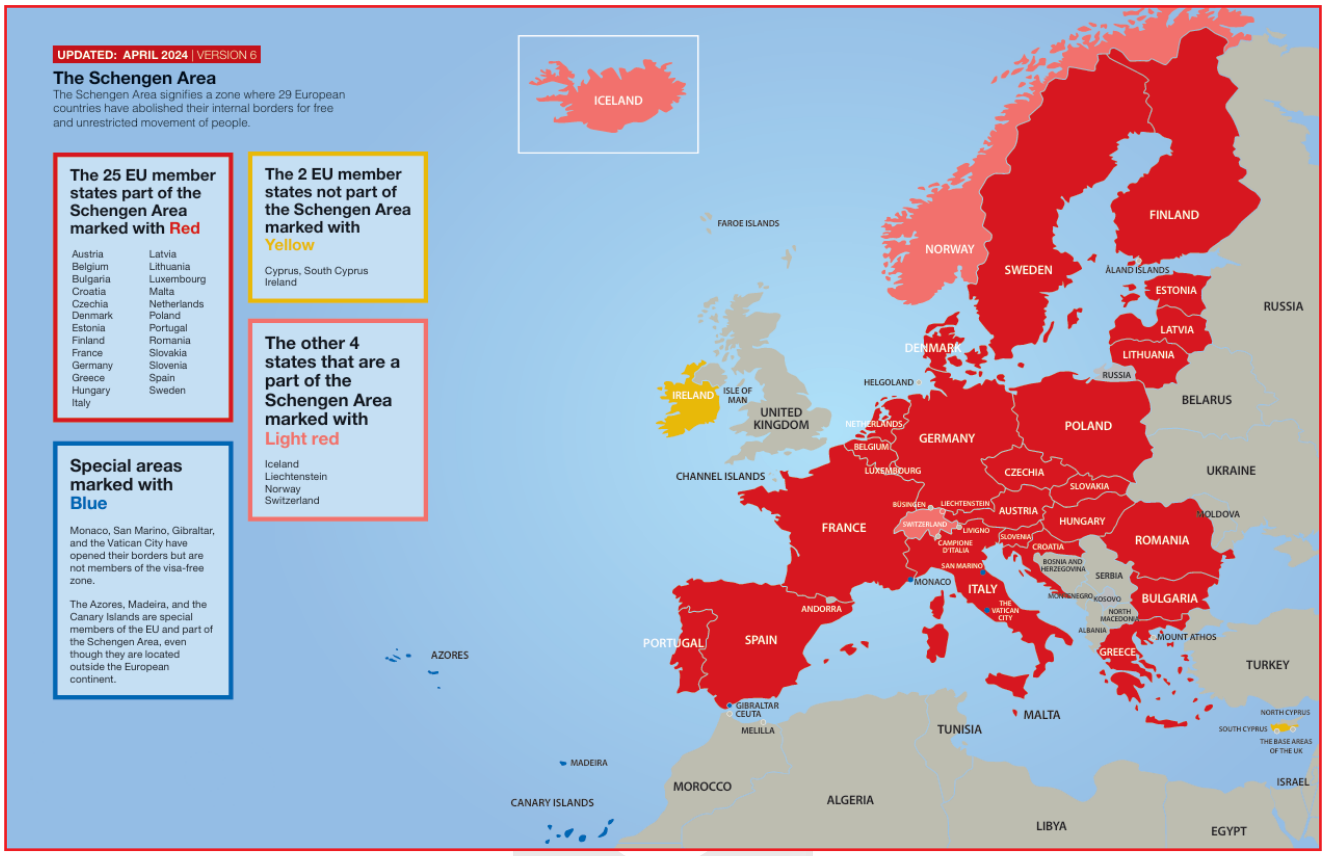
- These agreements **abolished internal border checks** between participating countries, allowing for **free movement of people across most EU states and some non-EU countries.**
- The Schengen Area is the **world's biggest area without internal border controls,** and now covers **29 countries (**25 of the 27 EU member states (excluding Cyprus and Ireland), as well as **four non-EU countries (Iceland, Liechtenstein, Norway, and Switzerland)**.

➢ **Key Features of the Schengen Zone:**

- **Free Movement**: The Schengen Area guarantees free movement for over **425 million EU citizens and non-EU nationals** legally residing in or visiting the EU.
  - By abolishing internal border checks, it allows seamless travel, living, and working across participating countries.
  - A uniform visa policy allows short-term stays of **up to 90 days** for tourists, business travelers, and other visitors.
- **Cross-Border Cooperation**: The Schengen Area includes provisions for **police cooperation, judicial collaboration, and the Schengen Information System (SIS)** to ensure security.
  - SIS is the most widely used and largest information sharing system for security and border management in Europe.
- **Temporary Border Controls**: In exceptional circumstances, countries can temporarily reintroduce border controls for security reasons, but they must inform other member states and the European Commission.
- **Schengen Evaluation**: Countries wishing to join the Schengen Area must meet specific criteria, including **effective border control, visa issuance, and law enforcement cooperation**.

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Key Facts About Bulgaria and Romania

- **Bulgaria:**
  - **Capital:** Sofia.
  - **Geography:** Bulgaria is located in the **Balkans** in Southeastern Europe. It borders the **Black Sea** and lies between Romania and Turkey.
    - Bulgaria is bounded by Romania to the north, Turkey and Greece to the south, North Macedonia to the southwest, and Serbia to the west.
  - **Political System:** Parliamentary Republic.
  - **Foreign Relations:** Bulgaria is a member of the **United Nations (UN), North Atlantic Treaty Organization (NATO),** the **European Union**, and the **Schengen Area**.
- **Romania:**
  - **Capital:** Bucharest.
  - **Geography:** Romania is bounded by Ukraine to the north, Moldova to the northeast, the Black Sea to the southeast, Bulgaria to the south, Serbia to the southwest, and Hungary to the west.
  - **Political System:** Semi-Presidential Republic.
  - **Foreign Relations:** Romania is a member of the UN, NATO, EU, **Euro-Atlantic Partnership Council,** and **Organization for Security and Cooperation in Europe (OSCE).**

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Nine Years of the Paris Agreement

Why in News?

The **Paris Agreement**, adopted on 12th December 2015, has come under scrutiny as it marks **nine years of its existence.**

- Despite its ambitious goals to limit global temperature rise, recent trends highlight its **ineffectiveness** in combating **climate change**. Over the past nine years, global emissions have increased by 8%, and 2024 is projected to be the **first year to breach** the 1.5°C threshold above **pre-industrial levels.**

What is the Paris Agreement?

- **About:**
  - It is a **legally binding** global agreement under the **United Nations Framework Convention on Climate Change (UNFCCC)** that was adopted in 2015 (COP 21).
  - It aims to **combat climate change** and limit global warming to well below 2° C above pre-industrial levels, with an ambition to limit warming to 1.5° C.
  - It replaced the **Kyoto Protocol** which was an earlier agreement to deal with climate change.
  - Under the Paris Agreement, each country is required to submit and update their **Nationally Determined Contribution (NDCs)** every 5 years, outlining their plans for reducing greenhouse gas emissions and adapting to climate change.
    - NDCs are pledges made by countries to **reduce their greenhouse gas emissions** and to adapt to the impacts of climate change.
- **Achievements:**
  - **Global Consensus and Inclusivity:** For the first time, nearly all nations, **developed**, developing, and least-developed committed to combating climate change

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under a universal framework where all countries contribute through **nationally determined contributions (NDCs)**, ensuring global participation and accountability.

- **Financial Support for Developing Nations:** Developed countries pledged to mobilize USD 100 billion annually by 2020 to **assist developing nations** in **mitigation and adaptation**, with provisions for increasing financial commitments post-2020 to enable sustainable development for vulnerable nations.
- **Equity and Differentiated Responsibilities:** Incorporated the UNFCCC principle of **"Common But Differentiated Responsibilities" (CBDR)** to balance commitments based on national circumstances, ensuring fairness for developing and least-developed countries.

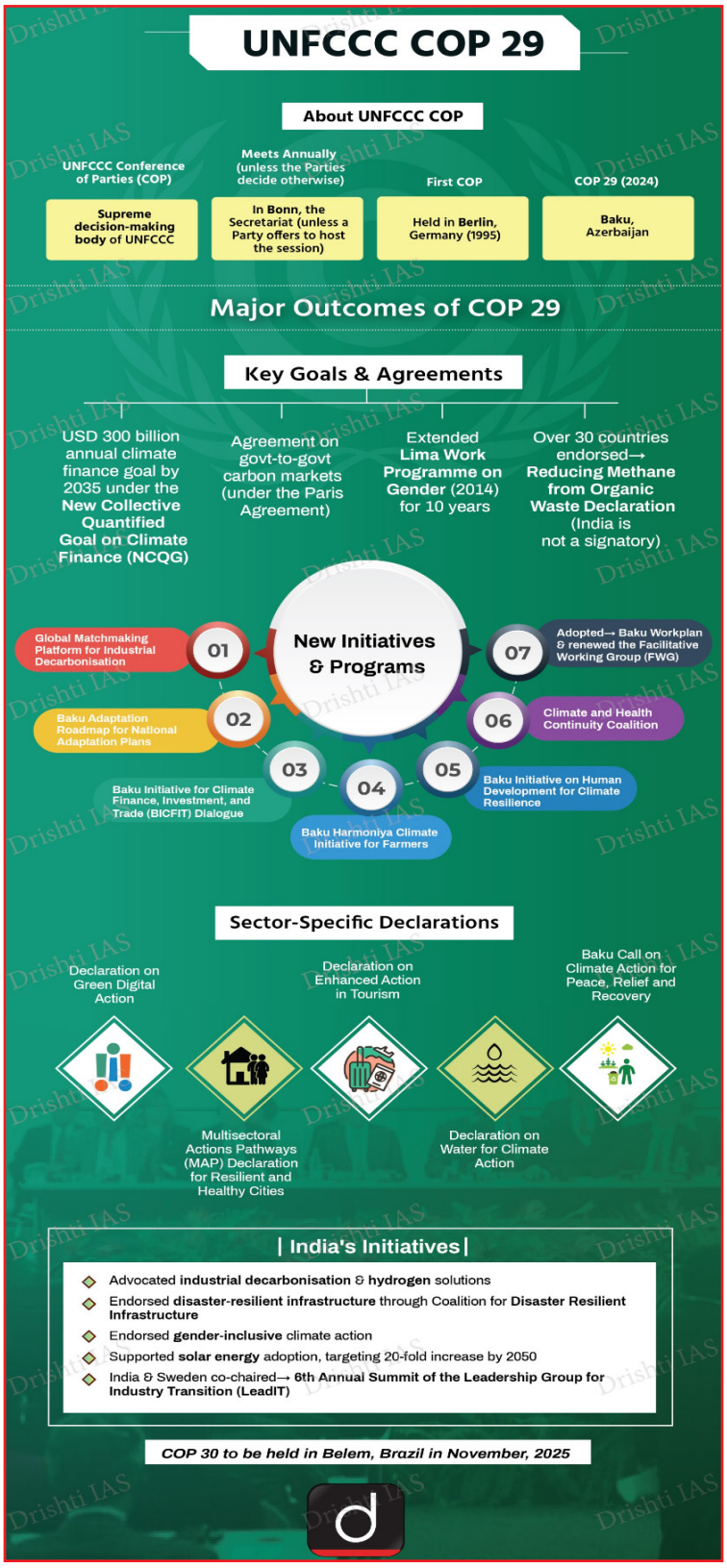
➢ **Criticism:** The **World Meteorological Organization (WMO) State of the Global Climate 2022** report pointed out that the **Paris Agreement on Climate Change** has been ineffective in fulfilling its agenda.

- After the signing of the Agreement, the last eight years (2015-2022) have consecutively been the warmest years on record globally.
  - The situation could have been far worse if the **La Nina weather event** had not occurred in the past three years, which has a cooling effect on the weather system.
- Current **Nationally Determined Contributions (NDCs)** commitments are insufficient to limit global warming to 1.5°C, with projections of 2.5-2.9°C, and a gap between targets and actual implementation could lead to **even higher emissions by 2030.**
- The **World Meteorological Organization (WMO) report** highlights that the 2015 Paris Agreement has fallen short, calling for a fossil fuel treaty to complement it.
- While NDCs and disaster risk reduction plans are in place in many countries, their adequacy and implementation effectiveness vary.
  - For example, while the European Union's NDCs show strong targets and implementation like the **European Green Deal**, countries like South Africa **struggle with effective execution** due to reliance on coal and limited resources.



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What Are the Differing Perspectives of Developed, Developing, and Least-Developed Countries on the Paris Agreement?

Aspect	Developed Countries	Developing Countries	Least-Developed Countries (LDCs)
Approach to NDCs	Favor voluntary NDCs for flexibility.	Criticize voluntary NDCs as insufficient and inequitable.	Demand legally binding commitments for stronger global action.
Climate Finance	Faces criticism for shifting greater responsibility onto less industrialized nations.	Advocate for adequate and timely financial support from developed countries.	Disappointed by delays and insufficiency in promised funding, especially for adaptation and loss and damage.
Technology Transfer	Support limited, market-based technology sharing.	Demand accessible and affordable technology to transition to green economies.	Highlight lack of access to critical technologies, which increases their vulnerability.
Historical Responsibility	Seek to move past historical emissions accountability.	Argue for the principle of "common but differentiated responsibilities" (CBDR) to hold developed countries accountable.	Stress the importance of addressing historical emissions to ensure fairness in global action.
Adaptation Needs	Focus on mitigation strategies over adaptation.	Emphasize both mitigation and adaptation to address ongoing and future climate impacts.	Prioritize adaptation due to severe vulnerabilities, particularly to sea-level rise and extreme weather events.
Loss and Damage	Show reluctance to commit to compensation or reparations.	Support the establishment of robust mechanisms for addressing loss and damage.	Demand urgent action and reparations for irreversible climate impacts threatening their survival.

What can Be Done to Address the Implementation Gaps of the Paris Agreement?

- **Strengthen and Enforce NDCs:** Make NDCs **legally binding** with periodic reviews to align with **temperature goals**, while ensuring developed countries take on **higher mitigation targets** reflecting their historical emissions and financial capacity.
- **Phase Out Fossil Fuels:** Establish a **binding global framework** for phasing out fossil fuels, support developing nations with **financial and technical aid** for a clean energy transition, and eliminate fossil fuel subsidies to prioritise renewable energy investments.
- **Enhance Climate Finance:** Developed countries must surpass **the USD 300 billion annual climate finance goal by 2035,** focus on adaptation and **loss-and-damage** funding for vulnerable nations, and implement innovative mechanisms like carbon and aviation taxes.
- **Promote Technology Transfer:** Facilitate **affordable technology transfer,** build technological capacity through **training and research**, and foster public-private partnerships for sustainable innovation and deployment.
- **Focus on Adaptation and Risk Reduction:** Develop disaster risk reduction strategies, invest in **resilient infrastructure,** and establish early warning systems to mitigate the impact of climate-induced extreme weather events.
- **Equitable Implementation and Accountability:** Uphold equity by **reinstating CBDR**, establishing transparent accountability for NDCs and finance, and implementing incentives for compliance with penalties for non-compliance.
- **Increase Global Cooperation:** In light of the recent developments at COP29 in Baku, there is a need to **strengthen multilateral institutions** to facilitate **unified global action** and to establish robust legal frameworks that ensure accountability for non-compliance.

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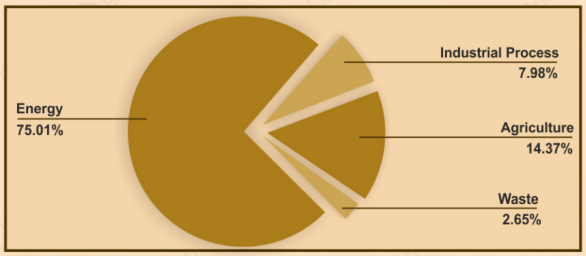
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Note:

INDIA'S CLIMATE PROFILE

Sector-wise Contribution

- **Key Emitting Sectors:** Energy, Transportation, Construction



- **Key Climate Risks:** Floods, Droughts, Heat Waves, Cold Waves and Cyclones
- **Vulnerable Sectors:** Agriculture & Food, Water, Coastal, Health, Forests & other natural ecosystems

Key Initiatives for Tackling Climate Change

- **National Policy Framework**
  - National Action Plan on Climate Change (NAPCC)
  - State Action Plan on Climate Change (SAPCC)
- **India's Updated Nationally Determined Contributions (2022)**
  - Mass movement for 'LIFE'– Lifestyle for Environment
  - Adopt a climate-friendly and cleaner path for economic development
  - 45% reduction in emissions intensity of GDP by 2030 compared to 2005 levels, aiming for net-zero emissions by 2070
  - 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030
  - Additional carbon sink of 2.5 to 3 billion tonnes of CO_2
  - Better adapt to climate change by enhancing investments in specific sector
  - Mobilise domestic and new & additional funds
  - Build capacities, create domestic framework and international architecture
- **International Climate Negotiations - UNFCCC (1994) Convention and Agreements**
  - Paris Agreement (2015)
  - Kyoto Protocol (2005)

Bilateral and Multilateral Cooperation

Bilateral Projects

- **With Deutsche Gesellschaftfür Internationale Zusammenarbeit (GIZ) GmbH (Germany)**
  - Climate Adaptation & Finance in Rural India (CAFRI) (2020-2023)
  - Nationally Appropriate Mitigation Actions (NAMAs) (2007)
  - Global Carbon Market (GCM) (1997)
  - Institutionalisation of Capacities on Climate Change Studies and Action (ICCC)
- **With European Union (EU)**
  - Strategic Partnerships for the Implementation of the Paris Agreement (SPIPA) (2018-2022)
  - Clean Technologies and Energy Efficiency for Eco-Cities

Multilateral Projects

- **UN Secretary-General (UNSG) Climate Action Summit (2019)**
- **Global Commission on Adaptation (GCA) (2018)**
- **UNDP:** Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action

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Social Issues

Highlights

- *Impact of Covid-19 Pandemic*
- *EAC-PM Report on Domestic Migration*
- *Rising Drug Abuse Among Youth*
- *Misuse of Indian Law*

Impact of Covid-19 Pandemic

Why in News?

Recently, the world marked **five years** since the outbreak of Covid-19, a pandemic that caused **millions of deaths**, unprecedented economic disruptions, and significant **social challenges**.

- Although much of the immediate crisis has passed, its **lingering effects on global economies, policies, and societies** continue to shape the world profoundly.

How the Covid-19 Pandemic Changed the World?

- **Economic Impact:**
  - **GDP Gaps:**
    - **India** experienced a sharp contraction in its GDP growth rate during 2020-21, dropping to **-5.8%** due to stringent lockdowns, compared to the pre-Covid average of 6.6%.
    - Post-pandemic recovery was robust, with growth rates of **9.7%, 7%, and 8.2%** in subsequent three years (2021 to 2023), but the economy remains years behind its pre-pandemic trajectory.
    - At a **7% growth rate**, India's GDP is projected to return to its pre-Covid trend by 2042-43, whereas a **7.5% growth rate** could achieve this a decade earlier.
    - Global GDP contracted by **3.1%** in 2020, and the 2023 Global Economic Prospects report indicates a nearly USD 4.7 trillion shortfall from the original 2020 forecast.
      - The large economies, including the US and China, faced similar output gaps, worsened by trade tensions and external challenges.
  - **Debt Explosion:**
    - Governments globally borrowed heavily during the pandemic, causing the **largest spike in public debt** in two decades in 2020.
    - Public debt remains **above pre-Covid levels**, with spending expected to escalate due to **net-zero commitments, increased defense budgets in Europe, and rising protectionism**.
    - High debt burdens constrain **fiscal flexibility**, diverting resources from critical sectors like **health, education, and infrastructure**.
- **Industrial Policies**:
  - The pandemic exposed the vulnerabilities of **global supply chains**, especially the over-reliance on China for manufacturing inputs like **semiconductors** and **pharmaceuticals**.
  - Governments globally introduced **new industrial policies**, including the **US CHIPS Act**, **India's Production-Linked Incentives**, and **Made in China 2025**, aiming to enhance self-sufficiency.
  - Between 2019 and 2024, **state interventions tripled globally**, driven by geopolitical concerns and efforts to strengthen **supply chain resilience**.
- **Social and Political Dynamics**:
  - **Erosion of Trust**:
    - The **Edelman Trust Barometer** measures global trust in institutions like governments, businesses, and media, post-pandemic it showed a **sharp decline in trust**, reflecting public dissatisfaction with governance and leadership.
    - A 2023 Pew survey across 24 countries revealed **74% of people felt disconnected from elected officials**, and 59% were dissatisfied with democracy.

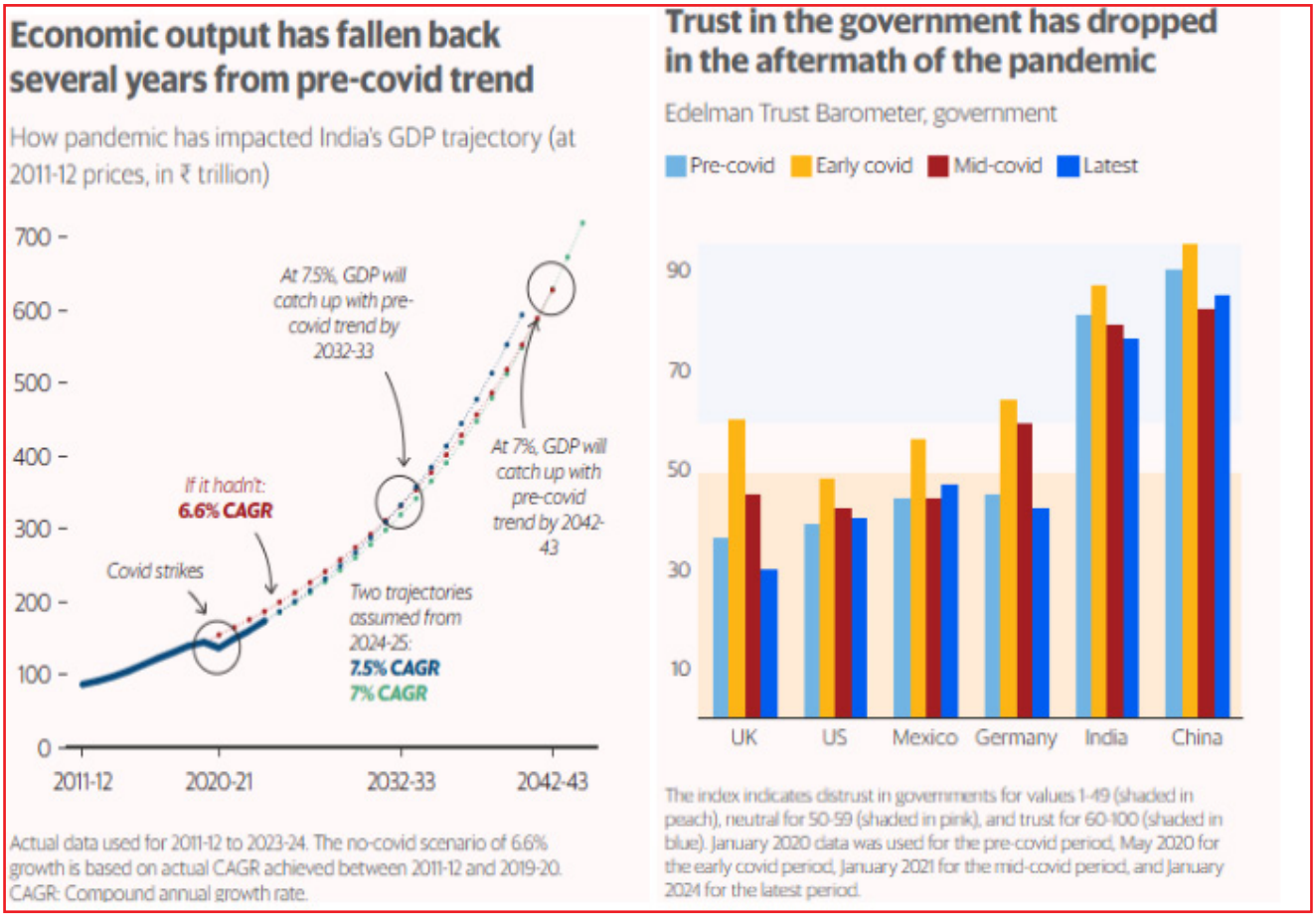
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- Anti-incumbency sentiment surged, with **40 of 54 elections in 2024 resulting in incumbent losses**, showing the lasting political repercussions of the pandemic.

❍ **Changing Work Models**:

- The pandemic popularised **hybrid work**, with **42% of Indian job seekers** in 2024 prioritising flexible hours.
- The rise of **gig work** and **e-commerce platforms** enabled workers to monetise hobbies and explore alternative income streams.
- Greater emphasis on **work-life balance** led employers to adopt policies catering to employee well-being.



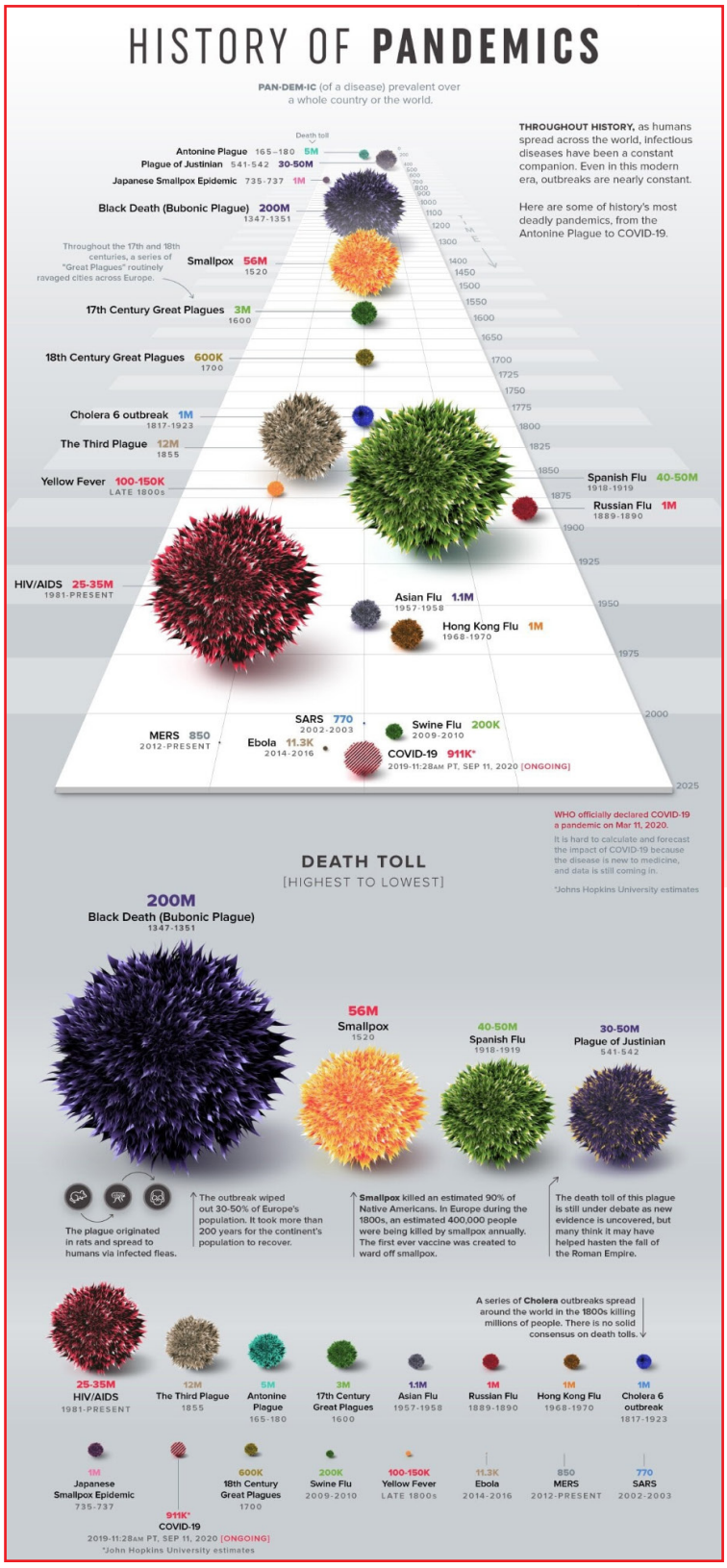
Covid-19 Pandemic

- Covid-19, caused by the SARS-CoV-2 virus, was first identified in **Wuhan, China, in December 2019**, before rapidly spreading globally.
- By **March 2020**, it was declared a pandemic by the **World Health Organization (WHO)**, triggering widespread lockdowns and restrictions.
- The virus led to **millions of deaths**, overwhelming healthcare systems, and caused severe socio-economic hardships, including job losses and global recessions.
- Its impact highlighted vulnerabilities in **public health systems, supply chains, and global coordination.**

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Note:



EAC-PM Report on Domestic Migration

Why in News?

The **Economic Advisory Council to the Prime Minister (EAC-PM)** released a working paper titled ***"400 Million Dreams!"*** which highlights a **12% decline in domestic migration** since 2011.

- This shift, reflecting broader socio-economic changes, is attributed to improved economic opportunities and infrastructure in traditionally high migration source areas.

What are the Key Highlights of the EAC-PM Report on Domestic Migration?

- **Reduction in Migration**: The number of domestic migrants in India has decreased by **12%** since 2011, with the estimated number of migrants in 2023 standing at **40.20 crore**.
  - This is an **11.78% decline** from the 45.58 crore migrants reported in **Census 2011.**
  - The **migration rate** (difference between the number of persons entering and leaving) has fallen from **37.64%** of the total population in 2011 to **28.88%** in 2023, indicating a slowdown in migration.
- **Migration Dynamics:**
  - **Migrant States**: **West Bengal**, **Rajasthan**, and **Karnataka** have experienced the **highest growth** in attracting migrants.
    - **Maharashtra** and **Andhra Pradesh** have seen a reduction in their percentage share of total migrants.
  - **Urban Concentration of Migration:** Major urban agglomerations like **Delhi**,

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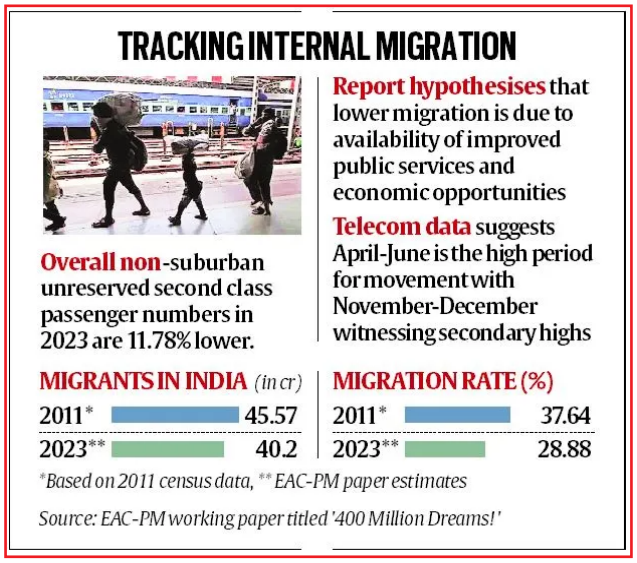
Mumbai, **Chennai**, **Bengaluru**, and **Kolkata** continue to be the primary destinations for migrants.

- **Mumbai**, **Bengaluru Urban**, and **Howrah** are among the top districts attracting the most migrant arrivals.

- **Emerging Migration Routes**: Primary migration corridors include **Uttar Pradesh-Delhi**, **Gujarat-Maharashtra**, **Telangana-Andhra Pradesh**, and **Bihar-Delhi**.
- **Seasonal Migration Trends**: Migration is most frequent during **April to June**, with secondary peaks in **November-December**, likely due to festivals and marriages.

- **January** experiences the lowest levels of migration, suggesting a seasonal pattern.

- **Reasons for Decline in Migration:** The decline in domestic migration is attributed to improved local economic opportunities through schemes like **Pradhan Mantri Mudra Yojana (PMMY)**, enhanced infrastructure via **Pradhan Mantri Gram Sadak Yojana (PMGSY)**, better healthcare through **Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (PM-JAY)**, and advancements in education and connectivity through **Digital India** in migration-origin regions.



Migration

- Migration refers to the **movement of people from their usual place of residence to a new one**, either across international borders or within a state.
  - While there is no universally agreed definition, the **United Nations Department of Economic and Social Affairs** defines a **long-term migrant as someone who lives outside their country of origin for at least 12 months.**
- **Two Primary Types of Migration:** International migration involves **crossing state boundaries to live in another country for a minimum duration**, while internal migration occurs **within the same country.**
  - **Urbanization is a specific form of internal migration**, where people move from rural to urban areas.

What are the Implications of Decreased Domestic Migration?

- **Economic Implications:** Reduced migration can lead to **labor shortages in certain regions,** especially in industries that rely heavily on migrant workers.
  - This can increase wages in those areas but may also lead to **higher production costs and reduced competitiveness.**
  - Improved economic opportunities in smaller cities may reduce **income inequality** between urban and rural areas. **Boost to local economies** as the workforce stays in their home regions.
- **Social Implications:** Reduced migration can lead to increased demand for **quality education, healthcare, and infrastructure in rural and semi-urban areas.**
  - However, it limits access to better employment and education opportunities in urban centers.
  - Women who traditionally stay back may face prolonged economic dependence if migration opportunities for male family members shrink.
- **Demographic Implications:** Reduced inflow of migrants to urban areas could **slow down urbanization**, impacting cities' economic dynamism.

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Note:

- Decline in population growth in metro cities might affect their **consumer base and economic activities.**

➢ **Policy and Governance Implications:** Lower migration rates can reduce the pressure on urban areas, potentially easing issues like **overcrowding, housing shortages, and strain on public services.**

- National employment schemes like **Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)** may need to scale up to address reduced employment migration.
- Staying in rural areas might increase **pressure on local land and water resources,** leading to **unsustainable agricultural practices.**

India's Initiatives for the Welfare of Migrants

- **PM Street Vendor's AtmaNirbhar Nidhi (PM SVANidhi)**
- **Pradhan Mantri Shram Yogi Maan-Dhan Yojana (PMSYM)**
- **Pradhan Mantri Garib Kalyan Yojana (PMGKY)**
- **One Nation One Ration Card (ONORC)**
- **Mera Ration App**

Economic Advisory Council to the Prime Minister (EAC-PM)

- The EAC-PM is an independent advisory body providing economic and related advice to the Government of India, specifically the Prime Minister.
  - Its **Terms of Reference** include analyzing and advising on issues referred by the Prime Minister, addressing macroeconomic matters, and performing tasks assigned by the Prime Minister.
- The EAC-PM's role is **advisory and non-binding,** with additional efforts to foster economic understanding among the public through reports, presentations, and stakeholder interactions.
- The **NITI Aayog (National Institution for Transforming India)** acts as its nodal agency for administrative and logistical support.

Rising Drug Abuse Among Youth

Why in News?

The **Supreme Court of India** has expressed concern over the rising drug abuse among youth, calling it a generational threat.

- This concern emerged during a verdict supporting the **National Investigation Agency's (NIA)** probe into a heroin smuggling case linked to Pakistan.
- The court emphasized the **need for urgent collective action** from families, society, and state authorities to address the growing menace of drug abuse.

What is the State of Drug Abuse in the World?

➢ **Global Scenario:**

- As per the **World Drug Report 2024** released by the **United Nations Office on Drugs and Crime (UNODC)**, global drug use reached **292 million** people, marking a **20% increase** over the past decade.
- **Drug Preferences**: **Cannabis** remains the most widely used drug (**228 million users**), followed by opioids (**60 million**), amphetamines (**30 million**), cocaine (**23 million**), and ecstasy (**20 million**).
- **Emerging Threats**: The report flags **netizens**, a new class of synthetic opioids, as a significant threat, more potent than fentanyl, contributing to rising overdose deaths, especially in high-income countries.
  - **Fentanyl** is an opioid drug used as an **analgesic (pain relief) and anesthetic**
- **Treatment Gap**: Only **1 in 11** people with **64 million** drug use disorders receive treatment.
  - Women face greater barriers, with only **1 in 18 women** with drug use disorders receiving treatment, compared to **1 in 7 men**.

➢ **Drug Prevalence in India:**

- **Drug Addiction:**
  - Drug addiction is on the rise, with approximately **100 million people** in India affected by various

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Note:

narcotics according to the **Narcotics Control Bureau (NCB)**.

- States like **Uttar Pradesh**, **Maharashtra**, and **Punjab** recorded the highest number of FIRs under the **Narcotic Drugs and Psychotropic Substances Act (NDPS)** between 2019 and 2021.

- **Alcohol**: According to the **National Survey on Extent and Pattern of Substance Use in India (2019)**, conducted by the Ministry of Social Justice and Empowerment, **16 crore** people (14.6%) between ages 10 and 75 are current alcohol users. Of these, **5.2%** are **alcohol dependents (alcoholism).**
  - **Alcoholism** is a **chronic disease** that causes people to crave alcohol and be unable to control their drinking.
- **Cannabis**: **3.1 crore** people (2.8%) are cannabis users, with **72 lakh** (0.66%) facing cannabis-related issues.
- **Opioid Use**: **2.06%** of the population uses opioids, and nearly **0.55%** (60 lakh) require treatment services for opioid dependence.
- **Sedative**: **1.18 crore** (1.08%) individuals use sedatives for non-medical purposes.
- **Inhalant**: Inhalant abuse affects **1.7% of children and adolescents**, significantly higher than the **0.58% prevalence in adults**. Approximately **18 lakh children** require assistance to address inhalant abuse.
- **Injecting Drug Use**: Approximately **8.5 lakh** people inject drugs, known as **People Who Inject Drugs (PWID).**

Major Drug-Producing Regions:

- **Golden Crescent**: Comprising Afghanistan, Iran, and Pakistan, it remains a primary hub for opium production, impacting Indian states such as **Jammu and Kashmir**, **Punjab**, **Himachal Pradesh**, **Rajasthan**, and **Gujarat**.
- **Golden Triangle**: Located at the intersection of **Laos**, **Myanmar**, and **Thailand**, this region is notorious for heroin production, with **Myanmar** producing **80%** of the world's heroin. Trafficking routes pass through Laos, Vietnam, Thailand, and India.



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Note:

What are Different Drug Types and Substances?	
Drug Type	**Characteristics**
Stimulants	➢ Stimulants stimulate the central nervous system, increasing alertness and physical activity. They can cause mood swings, insomnia, irregular heartbeat, and anxiety. ➢ **Examples:** Cocaine, Crack, Amphetamines, and inhalants like Amyl or Butyl Nitrites.
Depressants:	➢ Depressants, such as alcohol, barbiturates, and tranquilizers, slow down the **central nervous system**, causing relaxation. ➢ Alcohol abuse can lead to **slurred speech, memory loss, and in severe cases, unconsciousness or death**. ➢ **Examples:** Barbiturates and tranquilizers
Hallucinogens	➢ Hallucinogens **alter perception, causing emotional swings, paranoia, delusions, and confusion**. Though not physically addictive, they can lead to lasting psychological harm. ➢ Examples: LSD, Ecstasy, Psilocybin (magic mushrooms).
Dissociative Drugs	➢ Dissociative drugs cause **detachment from the body and environment,** impairing motor functions and causing confusion. ➢ **Examples:** Ketamine, DXM (Dextromethorphan).
Opioids	➢ These are **highly addictive and induce pain relief and euphoria**. ➢ **Examples:** Heroin, Opium, Pharmaceutical painkillers (e.g., codeine, morphine).
Inhalants	➢ Inhalants can cause headaches, nausea, loss of coordination, and in severe cases, suffocation or death. **Examples:** Gasoline, Paint Thinners, Amyl Nitrite.
Cannabis	➢ Cannabis, derived from the ***Cannabis sativa*** **plant**, is commonly used in forms like **marijuana, hashish, and hash oil**. ➢ Its abuse impairs **memory, concentration, and can lead to paranoia, addiction**, and long-term **cognitive issues. Examples:** Marijuana, Hashish, Hash Oil.

What are the Factors Contributing to Drug Abuse in India?

- **Peer Influence**: The desire to fit in with friends and gain social approval often leads to experimentation with drugs, especially in high school and college environments.
- **Academic Stress and Mental Health Issues**: Pressure to excel academically, coupled with high competition, can cause stress, anxiety, and depression.
  - Some youth use drugs as a coping mechanism for managing these pressures.
- **Cultural Norms and Media Influence**: The glamorisation of drug use in **media, movies, and music often normalizes substance abuse** among young people, making it appear trendy or acceptable.
  - The **limited role of state authorities and local governments** in addressing drug abuse has contributed to the rise of substance use in India.
- **Socio Economic Factors**: Poverty, unemployment, and limited access to educational and recreational resources increase the likelihood of **substance abuse as young people** turn to drugs as a form of escape or coping mechanism.
- **Family Environment**: Dysfunctional family dynamics, **parental substance abuse,** and lack of emotional support often **correlate with higher rates of youth drug use**.
  - A supportive family environment can mitigate these risks.
- **Legal System Loopholes:** **Organized crime** syndicates exploit legal system loopholes, such as weak border controls, to smuggle drugs. They often misuse trade routes from Africa and South Asia for drug trafficking purposes.
  - In 2023, the **Border Security Force** reported a 35% increase in drug seizures along the India-Pakistan

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Note:

border, highlighting the ongoing challenges in controlling illicit drug flows through these routes.

- **Easy Availability:** Easy drug availability, particularly due to **smuggling in Punjab,** has led to widespread abuse.
  - Around **15.4%** of Punjab's population uses narcotics, with **over 3 million people affected** as per a 2022 study by Post Graduate Institute of Medical Education and Research (PGIMER).
- **Fear of Strict laws**: Strict laws like the **NDPS Act** can **discourage families from disclosing drug abuse** due to **fear of prosecution, hindering efforts for rehabilitation**.
  - This not only prevents individuals from seeking help but also allows the illegal drug supply chain to continue, contributing to the rise of drug abuse in India.

What are the Government Measures to Tackle Drug Abuse in India?

- **Legislative Measures**:
  - **Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985**: It r**egulates the production, manufacture, and trafficking of narcotic drugs** and **psychotropic substances**.
  - **Drugs and Cosmetics Act, 1940** and **Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances (PITNDPS) Act, 1988** govern the legal framework for **controlling and preventing** drug trafficking and abuse.
- **Institutional Measures**:
  - **National Investigation Agency's (NIA)**: It is the **Central Counter Terrorism Law Enforcement Agency** in India.
    - It plays a crucial role in **tackling drug trafficking**, particularly when it involves national security concerns.
    - It investigates cases with **inter-State and international links**, including **drug smuggling networks tied** to **terrorism, arms trafficking, and cross-border infiltration**.
    - It coordinates with other agencies to **disrupt transnational drug trade, seize illicit shipments, and dismantle organized criminal** syndicates involved in trafficking.
  - **National Narcotics Control Bureau (NCB)**:
    - **NCB** is a **nodal drug law enforcement and intelligence agency** of India. It coordinates with national and international agencies, and participates in initiatives such as the **SAARC Drug Offences Monitoring Desk (SDOMD)**.
  - **Other Enforcement Agencies**: The **Directorate of Revenue Intelligence (DRI), Customs Department,** and various law enforcement agencies work together to curb **drug trafficking.**
- **Preventive and Rehabilitation Measures**:
  - **National Action Plan for Drug Demand Reduction (NAPDDR)**: The **NAPDDR** plan focuses on reducing the demand for drugs through awareness campaigns, capacity-building programs, de-addiction, and rehabilitation services.
  - **Nasha Mukt Bharat Abhiyan (NMBA)**: **NMBA** was launched to raise awareness about the harmful effects of drugs, especially among school children.
  - **NIDAAN and NCORD Portals**: **NIDAAN and NCORD Portals** are online platforms that maintain detailed databases of drug offenders, supporting law enforcement agencies in tracking drug-related crimes and trends.
- **Specific Initiatives**:
  - **Project Sunrise (2016)**:
    - **Project Sunrise** is addressing the rising HIV prevalence among drugs injecting people in the northeastern states.
  - **Nasha Mukt Bharat**:
    - **Nasha Mukt Bharat** is a nationwide campaign focusing on community outreach to prevent drug use and its social consequences.
  - **Seizure Information Management System (SIMS)**:
    - **SIMS portal** was developed by the NCB to **track drug offenses and offenders** through an online database.
  - **De-addiction Centers**:
    - Institutions like the **National Drug Dependence Treatment Centre (NDDTC)** at AIIMS, and state-run centers offering counseling, medical treatment, and social reintegration for addicts.

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Note:

Misuse of Indian Law

Why in News?

Recently, a **Public interest Litigation (PIL)** was filed in the **Supreme Court (SC)**, after a techie's **suicide in** Bengaluru, seekings intervention to review and reform **dowry and domestic violence laws.**

- The plea stated that **Dowry Prohibition Act, 1961** and **Section 498A** of the **Indian Penal Code (now Bharatiya Nyaya Sanhita)** have been **misused** to settle unrelated disputes and suppress the husband's family.

How Indian Laws are Misused?

- **Section 304B (Dowry Death) of IPC:** Overtime people were made to believe that **every unnatural or untimely death** of a married Indian woman is **dowry death**.
  - In such cases a **husband or relative** shall be punished with **imprisonment** for no less than seven years, which may extend to life imprisonment.
- **Section 498A (Cruelty Against Women) of IPC: Section 498A** mandates imprisonment of **up to three years and a fine for a husband or his relatives** if found guilty of cruelty or harassment towards a married woman.
  - **Section 304B** is a **non-bailable, non-compoundable, and cognizable** offence, meaning a **trial** will occur even if the **allegation is false**, and the husband is **presumed guilty** until proven innocent.
  - According to **National Crime Records Bureau data**, in 2012 nearly **200,000** people were arrested on **unproven dowry allegations**, with **only 15% of the accused convicted.**
- **Section 375 (Rape) of IPC:** Under Section 375 of the IPC, **only men can be perpetrators** and **women victims** of rape. The section does **not recognize men and transgenders as rape victims.**
  - Section 377 of IPC is the only option for male victims, but it faces challenges and **does not classify male-on-male sexual assault as rape**.
- **Section 69 of the BNS:** It criminalizes **"sexual intercourse by deceitful means,"** including "promising to marry a woman without intent," with imprisonment up to 10 years and a fine.
  - A **consensual sexual relationship** made on the promise of marriage will be a crime only if a **man backtracks from it and not a woman.**
  - Criminalising a **"Promise to Marry"** can intrude into an individual's **right to privacy and autonomy** ignores the fact the woman was in a relationship **on her own will.**
- **Section 354 of IPC:** It deals with assault or criminal force with the intent to **outrage a woman's modesty.** However, there is **no such law made to protect the modesty of a man and transgender.**
  - There are cases where **women bully men, and go unprosecuted**, because the law of the country **does not protect men** from such crimes.
- **Section 125 of CrPC Act, 1973:** Section 125 of the **Code of Criminal Procedure, 1973** sets out the **concept of maintenance** in India not only to the wife but also to her **parents and children.**
  - The maintenance law was designed to make **men solely responsible** for supporting their dependents, without considering **whether women actually need financial support.**
- **Protection of Women from Domestic Violence Act, 2005:** It does **not recognize men** and **transgender** as potential victims of **domestic abuse.**
  - Men facing **harassment or abuse** from partners have **no legal protection** under this act and are often met with **skepticism** when reporting such cases.
- **Custody and Divorce Proceedings:** In custody disputes, the **courts often favor mothers** as primary caretakers. **Fathers** are often **marginalized** even when they have a close bond.
- **Protection of Children from Sexual Offences Act, 2012:** A single woman can adopt kids of any sexual identity, but **a single man cannot adopt a daughter**.
  - In the event of a **married relationship, both spouses must agree** to the adoption.

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Note:

Note: In the ***Praveen Kumar Jain-Anju Jain divorce Case, 2024,*** the Supreme Court laid down **eight factors for determining alimony** for the wife. It includes:

- Status of the parties, social and financial
- **Reasonable needs of the wife** and the dependent children
- Parties individual **qualifications and employment statuses**
- Independent income or **assets owned by the applicant**
- **Standard of life enjoyed by the wife** in the matrimonial home
- Any employment sacrifices made for the family responsibilities
- Reasonable litigation costs for a non-working wife
- **Financial capacity of the husband**, his income, maintenance obligations, and liabilities

What are Impacts of False Accusations and Legal Harassment?

- **Depression and Anxiety**: False accusations or legal harassment can cause severe **psychological distress,** leading to feelings of **betrayal, helplessness, and chronic anxiety.**
- **Social Stigma:** Men facing legal harassment or false accusations may be **stigmatized as guilty or untrustworthy**, leading to isolation from family, friends, and social networks.
- **Suppressed Emotions**: Societal expectations that men be **stoic and resilient** discourage them from expressing vulnerability or seeking support, leading to **internalized distress** and worsened mental health issues.
- **Marital Suicide Rates**: NCRB data shows that married men have a significantly **higher suicide rate than women,** partly due to legal and social challenges.
- **Financial Burdens**: For many men, the burden of **legal fees**, potential loss of employment can be financially devastating.

Redressal in Case of False Accusations

- Under **Section 500** of the Indian Penal Code, the **husband can file a defamation lawsuit.**
- Under **Section 9** of the CrPC, the husband can file a claim for **recovery of damages** which he and his family have been subjected to for the **false allegations of cruelty and abuse.**
- **Section 182** of the IPC safeguards against false 498A cases. If false statements are made, the person can be sentenced to **6 months imprisonment, a fine, or both,** for misleading the judiciary.

What is the Judicial Stand on Misuse of Indian Law?

- ***Sakshi v Union of India case, 1999*:** The SC directed the Law Commission to deal with the issue of **gender neutral rape laws.**
  - Consequentially, the **172nd Report of the Law Commission 2000** recommended replacing the offence of rape with a gender-neutral offence of **"sexual assault."**
- ***Priya Patel v State of MP Case, 2006*:** In this case, the perpetrator's wife witnessed the rape, slapped the victim, closed the door, and left, **showing intent to assist in the crime.**
  - However, the Court ruled she **couldn't be convicted of rape** because she was a woman.
- **Sushil Kumar Sharma Case, 2005:** The petitioner challenged **Section 498A** of the IPC for violating equality.
  - The Supreme Court acknowledged that **misuse** of the provision could lead to **legal terrorism but upheld its constitutionality**, stating its main purpose was to prevent dowry deaths.
- **Chandrabhan Case, 1954:** In Chandrabhan case, 1954, the **Delhi HC** concluded that most complaints against husbands are filed in the **heat of the moment over trivial fights,** and amidst the rift and hostility, the children suffer the most.
- **Arnesh Kumar v State of Bihar, 2014:** The SC, laid stress on the need for **exercising caution** while dealing

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Note:

with the arrest of an accused under Section 498A as it is a **non-bailable and cognizable offence.**

How to Achieve Gender-Neutrality in Indian Laws?

- **Acknowledging Gender Bias:** The outdated view that **men** are always **perpetrators and women victims** ignores the fact that men can also be victims of **domestic violence, harassment, and false accusations.**
  - Legal reforms should acknowledge these realities and ensure laws protect both men and women and other gender equally.
- **Sensitizing Criminal Justice System:** Efforts should be made to **sensitize judges, legal professionals and police** to recognize and challenge their own **unconscious biases** through training programs and workshops on **gender stereotypes.**
- **Revise Existing Laws**: It is essential to adopt **gender-neutral language** that ensures both men and women, and even non-binary individuals, are equally protected.
  - E.g., using terms like **"spouse"** instead of **"husband" or "wife"** ensures that the laws do not favor one gender over the other.
- **Institutions for Men's Welfare**: Institutions need to be gender neutral. The ministry of **women needs to be renamed as the ministry for welfare of human development** so that every person needs to be protected.
- **Sensitizing Society**: Achieving gender neutrality requires **challenging** stereotypes that see **men as strong and emotionless and women as weak and nurturing.**
  - Both men and women can be victims or perpetrators and should be treated with **equal respect.**

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Note:

Science & Technology

Highlights

- *Pegasus Spyware and Surveillance Concerns*
- *NAFLD is now called MASLD*
- *ISRO's SpaDeX*
- *NASA's Parker Solar Probe*
- *Impact of mtDNA Mutations on Age-Related Muscle Loss*
- *Dark Matter and Dark Energy*
- *Quantum Satellite*
- *Nanoplastics Causing Antibiotic Resistance*

Pegasus Spyware and Surveillance Concerns

Why in News?

The **Pegasus spyware** has stirred controversy worldwide, including India, over its **misuse for surveillance**, raising serious **privacy and fundamental rights concerns**.

- Recently, a US court ruled that **Pegasus spyware** violated the **Computer Fraud and Abuse Act, 1986** by surveilling 1,400 WhatsApp users, including **300 from India.**

What is Pegasus Spyware?

- **About:**
  - **Pegasus** is a **spyware** developed by **NSO Group**, an Israeli cybersecurity firm founded in **2010.** It is capable of **hacking iOS and Android** devices to extract data, record conversations, capture photos, and access app data.
  - Spyware is a **malicious software** that secretly **monitors and collects information** from a device **without the user's consent.**
- **Features:**
  - **Advanced Exploitation**: It uses **zero-day vulnerabilities** to jailbreak iOS devices remotely while the Android version uses software like **Framaroot** for rooting devices.
    - A zero-day vulnerability is an **undiscovered security flaw** in software with **no available defense or patch.**
    - Rooting is the process of **unlocking or jailbreaking** a device, such as a smartphone or tablet to **gain administrative control**.
  - **Invisibility**: It operates **covertly**, with **no visible signs** except for the browser closing after clicking a **phishing link**.
- **Pegasus Clients and Related Controversy:**
  - As per the NSO Group, the use of **Pegasus is limited to governments** around the world.
  - Pegasus is **controversial** because, although meant to **fight terrorism and crime**, it has been used by governments to **spy on journalists, opposition leaders, activists, and critics**.

How Pegasus was Used in India?

- **Pegasus Project**: A global collaborative investigation reported that over **300 verified Indian mobile numbers** were targeted using Pegasus spyware developed by the Israeli NSO Group.
  - It targeted **ministers, opposition leaders, journalists, lawyers, businessmen, scientists, rights activists, and government officials.**
- **Amnesty International Research:** Amnesty International's **Security Lab** confirmed that Pegasus was used to **target 37 phones, of which 10 belonged to Indians**.

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Note:

- **Bhima Koregaon Case:** In 2019, Pegasus was allegedly used against **lawyers and activists** associated with the Bhima Koregaon case and Dalit rights movements in Maharashtra and Chhattisgarh.
- **RTI Response:** In response to an RTI request in **2013**, the Central Government disclosed **issuing 7,500 to 9,000 telephone interception** orders monthly.
  - However, **RTI requests** for such information are **now denied** citing threats to national security and to the physical safety of persons.
- **WhatsApp Allegations:** WhatsApp alleged that between April 2018 and May 2020, the NSO Group had **reverse-engineered and decompiled** its source code to create installation vectors (points of entry) named **"Heaven", "Eden" and, "Erised"**—all part of a sophisticated hacking suite called **"Hummingbird"** that NSO Group sold to its government clients.

What is India's Legal Framework for Surveillance and Data Protection?

- **Telecommunications Act, 2023**: Section 20(2) of the Telecommunications Act, 2023 empowers the Centre or states to **temporarily take control of telecom services or networks** during public emergencies, **disasters, or for public safety.**
  - However, **Rule 419(A) of the** Indian Telegraph Rules, 2007 mandates government authorization for lawful communication interception.
- **Information Technology (IT) Act, 2000**: Section 69 of the IT Act, 2000 and the Interception Rules, 2009 allow the government to **monitor, intercept, or decrypt** any information through a computer resource.
- **Digital Personal Data Protection (DPDP) Act, 2023:** DPDP Act, 2023 is a comprehensive **privacy and data protection law** that includes provisions regarding **consent, legitimate uses, breaches, data fiduciary** and processor responsibilities, and **individuals' rights over their data.**

What are the Concerns Surrounding Surveillance in India?

- **Impact on Fundamental Rights**: Surveillance directly infringes on the **right to privacy** under **Article 21** of the Constitution, as recognized in the **KS Puttaswamy Case, 2017.**
  - The mere existence of surveillance systems to **monitor citizens' activities** discourages free speech under **Article 19(1)(a)**.
    - According to **Article 19(1)(a),** all citizens shall have the **right to freedom of speech and expression** which is subject to be curtailed under certain conditions but are **frequently denied** in the name of undermining **sovereignty and integrity** of India or **public order.**
- **Lack of Transparency**: Surveillance is conducted covertly with **no judicial or parliamentary oversight**.
  - The **executive holds disproportionate power**, undermining the principle of **separation of powers** enshrined in the Constitution.
- **Inability to Approach Court**: Individuals subjected to surveillance are **not able to approach courts** or raise their complaints since they themselves are **unaware of such surveillances.**
  - This undermines **Articles 32 and 226**, which empower citizens to **seek remedies** for the enforcement of their **fundamental and other rights**.
- **Executive Overreach:** Reports of the surveillance of **constitutional functionaries**, such as sitting **Supreme Court** judges, highlight the absence of safeguards against executive overreach.
- **Suppressing Free Expression**: The fear of surveillance **stifles open discussions, creativity, and dissent**, which are essential for a vibrant democracy.

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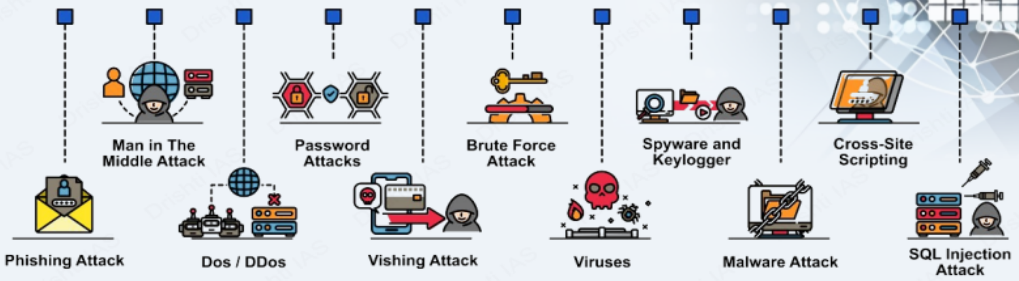
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Note:

CYBER SECURITY

Cybersecurity refers to any technology, measure, or practice for preventing cyberattacks or mitigating their impact.

CYBER SECURITY ATTACKS



'Crime in India' Report 2022 (NCRB) highlighted 24.4% surge in cybercrimes in India since 2021.

Common Cybersecurity Myths

- Strong passwords alone are adequate protection
- Major cybersecurity risks are well-known
- All cyberattack vectors are contained
- Cybercriminals don't attack small businesses

Cyber Warfare

- Digital attacks to disrupt vital computer systems, to inflict damage, death, and destruction.

CYBER THREAT ACTORS

CYBER THREAT ACTOR	MOTIVATION
NATION-STATES	GEOPOLITICAL
CYBERCRIMINALS	PROFIT
HACKTIVISTS	IDEOLOGICAL
TERRORIST GROUPS	IDEOLOGICAL VIOLENCE
THRILL-SEEKERS	SATISFACTION
INSIDER THREATS	DISCONTENT

Types of Cybersecurity

- Critical infrastructure security (Robust access controls)
- Network security (Deploying firewalls)
- Application security (Code reviews)
- Cloud Security (Tokenization)
- Information security (Data masking)

Recent Major Cyber Attacks

- WannaCry Ransomware Attack (2017)
- Cambridge Analytica Data Breach (2018)
- Financial data of 9M+ cardholders, including SBI, leaked (2022)

Regulations & Initiatives

- **International:**
  - UN Group of Governmental Experts (GGE) on Advancing Responsible State Behaviour in Cyberspace
  - NATO's Cooperative Cyber Defense Centre of Excellence (CCDCOE)
  - Budapest Convention on Cybercrime, 2001 **(India not a signatory)**
- **India:**
  - IT Act, 2000 (Sections 43, 66, 66B, 66C, 66D)
  - National Cyber Security Policy, 2013
  - National Cyber Security Strategy 2020
  - Cyber Surakshit Bharat Initiative
  - Indian Cyber Crime Coordination Centre (I4C)
  - Computer Emergency Response Team-India (CERT-In)

Steps Needed for Cyber Security

- Network Security
- Malware Protection
- Incident Management
- User Education and Awareness
- Secure Configuration
- Managing User Privileges
- Information Risk Management Regime

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Note:

NAFLD is now called MASLD

Why in News?

The term **Non-Alcoholic Fatty Liver Disease (NAFLD)** has been replaced by **Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD),** reflecting a shift towards recognising metabolic dysfunction as the primary cause rather than the absence of alcohol.

- This change helps remove the stigma tied to **alcohol use and better directs focus to underlying metabolic issues** and abnormal cholesterol.

What is Nonalcoholic Fatty Liver Disease?

- **About:** NAFLD is a condition where **fat accumulates in the liver** without alcohol involvement.
  - It includes two types: **nonalcoholic fatty liver (NAFL)** and **nonalcoholic steatohepatitis (NASH)**.
- **Types of NAFLD**
  - **NAFL:** Characterized by **fat buildup in the liver** with **minimal to no inflammation or damage.**
    - It typically doesn't lead to liver complications but can cause liver enlargement and discomfort.
  - **NASH**: This form includes both **fat buildup and liver inflammation,** which can lead to **liver damage, fibrosis** (a condition where the liver develops an excess of scar tissue), **and potentially cirrhosis,** a condition that increases the risk of liver cancer.
- **Symptoms and Causes**: NAFLD is often symptomless, but conditions like **obesity, metabolic syndrome** (a cluster of metabolic abnormalities), and **type 2 diabetes** increase its risk.
- **Diagnosis**: NAFLD is diagnosed through medical history, physical exams, and tests such as blood tests, imaging, and **liver biopsy to distinguish between NAFL and NASH.**
- **Treatment: Weight loss is key to managing NAFLD,** as it can reduce fat, inflammation, and liver fibrosis (a condition where the liver develops an excess of scar tissue, or collagen, due to chronic inflammation).
- **Prevention:** A healthy diet and maintaining a healthy weight can help prevent or manage NAFLD. Diet changes and weight loss are recommended for those affected.

What Makes MASLD Different?

- **Focus on Metabolic Causes:** MASLD highlights **metabolic dysfunction** as the primary cause, while **NAFLD only indicated the absence of alcohol use**.
- **Prevalence:** MASLD affects **25% of people globally**, with higher rates (50-70%) among those with obesity or type 2 diabetes.
- **MASLD Diagnosis:** Non-Invasive Tests like FibroScan, MRI, ultrasound, and blood tests are used to diagnose MASLD.
  - FibroScan is a non-invasive test that measures **liver fat and stiffness,** eliminating the need for a **liver biopsy.**
- **Prevention of MASLD:** Avoid fast food, processed foods, and sugary items.
  - A balanced diet of whole grains, fruits, vegetables, and lean proteins can help prevent MASLD.

Note: **Hepatitis is liver inflammation,** which can be acute or chronic. It can be caused by **viral infections (A, B, C, D, E),** alcohol use, toxins, medications, or autoimmune disorders where the immune system attacks the liver.

India's Initiatives Related to Healthy Lifestyle

- Eat Right Mela
- Fit India Movement
- Eat Right Station Certification
- Mission Poshan 2.0
- Mid-Day Meal Scheme
- Poshan Vatikas
- Anganwadi
- **Unified India Organic**

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Note:

Types of Hepatitis

	TRANSMISSION	PREVENTION	TREATMENT
Hepatitis A	Eating contaminated food or drinking contaminated water	• Practicing good hygiene • Vaccine	No treatment
Hepatitis B	Through contact with the blood or bodily fluids of an infected person	• Practicing good hygiene • Vaccine • Blood screening	• Alpha interferon • Peginterferon
Hepatitis C	Blood-to-blood contact	• Practicing good hygiene • Avoid sharing needles, toothbrushes, razors or nail scissors	Direct-acting antiviral drugs
Hepatitis D	Contact with infected blood (only occurs in people already infected with hepatitis B)	• Hepatitis B vaccine • Avoid sharing needles, toothbrushes, razors or nail scissors	Interferon
Hepatitis E	Eating contaminated food or drinking contaminated water	• Practicing good hygiene • Avoid drinking water that has come from a potentially unsafe source	No treatment

ISRO's SpaDeX

Why in News?

Indian Space Research Organisation (ISRO) is set to achieve a significant milestone with the **launch of the Space Docking Experiment (SpaDeX) mission on 30th December 2024**.

- The mission aims to demonstrate satellite docking capabilities, a crucial technology for future space missions.

What is SpaDeX?

- **About:** SpaDeX (Space Docking Experiment) is a **technology demonstrator mission** developed by the ISRO to showcase in-**space docking technology.**
  - This mission aims to demonstrate the ability to **rendezvous, dock, and undock two small spacecraft,** marking a significant advancement in India's space capabilities.
- **Objective:** The primary goal of SpaDeX is to develop docking technologies for two small spacecraft, **SDX01 (Chaser) and SDX02 (Target),** in low Earth orbit.

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Note:

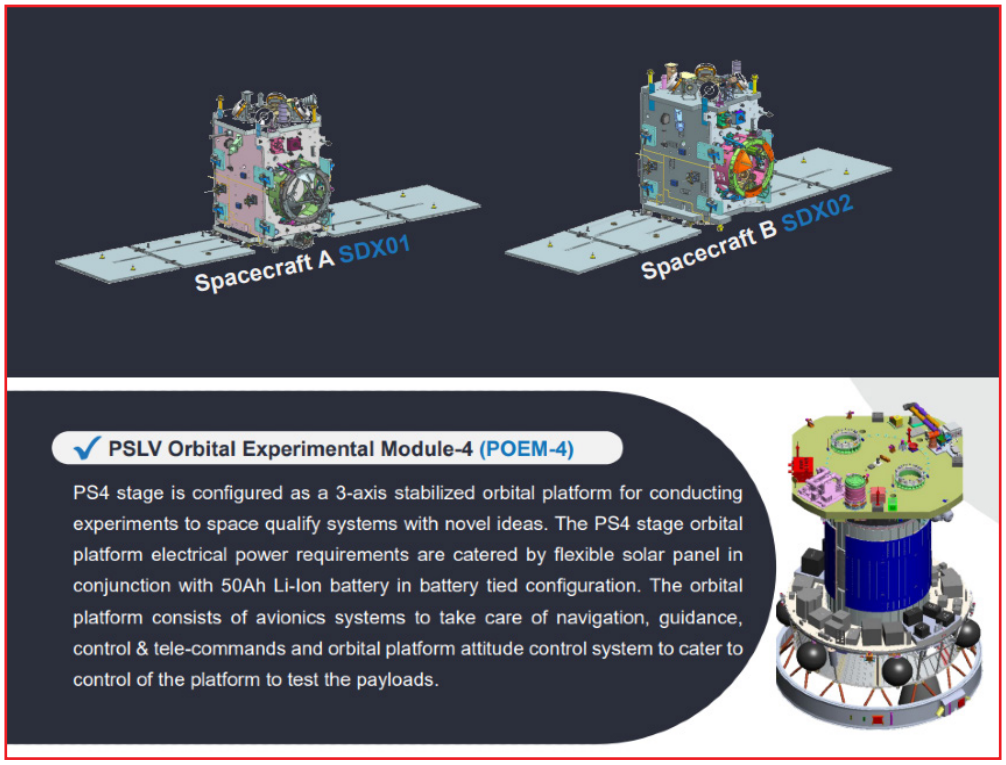
- They will dock autonomously using **advanced sensors and propulsion systems.**
- Secondary objectives include **testing electric power transfer and demonstrating spacecraft control.**

➢ **Mission Duration:** Two years

➢ **Mission Design:** SpaDeX will deploy two satellites, SDX01 and SDX02, into a 470 km orbit using the **Polar Satellite Launch Vehicle (PSLV) rocket**, where they **drift apart and gradually approach each other**, eventually docking at distances from 20 km to 3 meters.

- The two satellites are equipped with the **Bharatiya Docking System (BDS).**
  - BDS features identical, low-impact (approach velocity is in the order of 10 mm/s), **androgynous** (docking systems are identical for both spacecraft, Chaser & Target) docking mechanisms, enhancing mission flexibility and precision for future operations like satellite servicing, crew transfers, and India's space station development.
- SpaDeX will use **PSLV's fourth stage, POEM (PSLV Orbital Experimental Module)-4,** to carry 24 payloads from academic institutions and startups. These experiments will leverage the **microgravity environment** in orbit.

➢ **Docking Challenge:** The two satellites (Chaser and Target) will orbit at speeds of 28,800 km/h. They will need to carefully reduce their relative velocity to just 0.036 km/h before docking.



Space Docking

➢ Space docking is the intricate process of **maneuvering two fast-moving spacecraft into the same orbit,** bringing them closer, and joining them to form a single unit.
- This capability is pivotal for assembling large structures or transferring equipment, crew, or supplies in space.

➢ For instance, the **International Space Station (ISS)** was built using this technique, with various modules launched separately and docked in space.
- Continuous docking missions keep the **ISS operational** by delivering supplies, new crew members, and modules while facilitating the return of the older crew to Earth.

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Note:

Why is Space Docking Technology Crucial for India?

- **Modular Space Infrastructure:** Docking is a prerequisite for constructing multi-modular space stations. It allows the assembly of structures in space, reducing the size and weight constraints of single-launch missions.
- **Interplanetary and Lunar Missions:** Docking supports orbital refueling, and payload exchange, enhancing mission flexibility for lunar bases and Mars exploration.
  - It is crucial for future missions like **Chandrayaan-4,** space stations, and India's planned **Bharatiya Antariksh Station (BAS).**
- **Human Spaceflight Program:** Space Docking is critical for **crew transfers and emergency evacuations** during long-duration missions like Gaganyaan and beyond.
- **Global Collaboration and Market Potential:** SpaDeX could position **India as the fourth nation,** after Russia, the US, and China, to master space docking, strengthening its presence in satellite servicing and enabling advanced international collaborations.
- **Satellite Servicing:** Docking allows for repairing, refueling, and upgrading satellites, enhancing their operational life and performance.

NASA's Parker Solar Probe

Why in News?

NASA's Parker Solar Probe recently set a historic record by flying closer to the Sun than any other man-made object, reaching speeds of 430,000 mph and withstanding temperatures up to 982°C.

What are the Key Facts Related to Parker Solar Probe?

- **About:**
  - Launched in 2018, a car-sized robotic spacecraft, is named after American solar **astrophysicist Eugene Newman Parker**.
    - This is the **first NASA mission named for a living researcher** and it's humanity's first mission to explore within 3.8 million miles of the Sun's corona.
  - The Probe uses an **advanced carbon-composite heat shield** to withstand extreme temperatures.
- **Objectives:**
  - The Parker Solar Probe aims to approach within **6.5 million kilometers of the Sun** to **study energy flow**, solar corona heating.
    - It also investigates the source of **solar winds**, **high-speed streams of charged particles** that affect space weather.
  - To investigate the **Sun's corona**, and understand why it is hotter than the Sun's surface, a long-standing mystery in astrophysics.
  - To determine the **structure and dynamics of the plasma and magnetic fields** at the sources of the solar wind.
  - To explore mechanisms that accelerate and transport energetic particles.

Aditya-L1 Mission

- The **Aditya-L1 mission** is India's solar observatory at **Lagrange Point L1**, enabling continuous observation of the **Sun's chromospheric and coronal dynamics**.
- The spacecraft will be positioned in a halo orbit around **Lagrange Point 1 (L1)** of the **Sun-Earth system**, approximately **1.5 million km from Earth**.
- The spacecraft will carry **seven payloads** to observe the **photosphere**, **chromosphere**, and the outermost layers of the **Sun (the corona)** using electromagnetic and particle detectors.

Lagrange Points

- **About:**
  - Lagrange Points are positions in space within a two-body gravitational system where a small object can remain stable.
  - It enables spacecraft to **maintain stable positions with minimal fuel** consumption by **balancing the gravitational forces of two large bodies** with the **centripetal force** required for the smaller object to move in sync with them.
- **Types:**
  - The **Lagrange point L1** lies **between the Sun-Earth line**. The distance of L1 from Earth is approximately **1% of the Earth-Sun distance.**

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Note:

- **L2,** located **behind Earth from the Sun**, offers ideal conditions for observing the universe without Earth's shadow interference.
- **L3**, located **behind the Sun, opposite Earth**, offers potential observations of the Sun's far side.
- Objects at **L4** and **L5** maintain stable positions, forming an equilateral triangle with the two larger bodies.

ADITYA-L1 MISSION

ABOUT

- India's 1st scientific expedition to study the Sun
- To be placed at halo orbit around **L1 Lagrange point**
- Launch date - 02 Sept, 2023
- Time to reach - **4 months**; Mission Life - **5 years**

FIELDS OF STUDY:

- **Sun's corona** (Visible and Near-infrared rays), **photosphere** (soft and hard X-ray) and **chromosphere** (UV)
- Solar emissions, solar winds and flares and **Coronal Mass Ejections** (CMEs)
- Carry out round-the-clock imaging of Sun

SIGNIFICANCE

- Solar weather/environment affects the weather of entire solar system
- Solar events help **understand space weather**
- **Tracking Earth-directed storms** can help predict their impact

LAUNCH VEHICLE

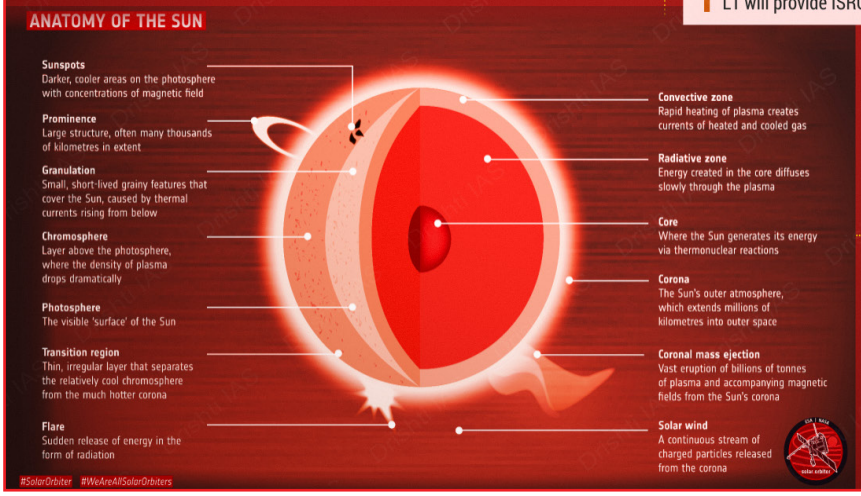
- PSLV-C57

PAYLOADS:

- Visible Line Emission Coronagraph **(VLEC) (primary payload)**
- Solar Ultraviolet Imaging Telescope **(SUIT)**
- Solar Low Energy X-ray Spectrometer **(SoLEXS)**
- Aditya Solar wind Particle Experiment **(ASPEX)**
- High Energy L1 Orbiting X-ray Spectrometer **(HEL1OS)**
- Plasma Analyser Package for Aditya **(PAPA)**
- Advanced Tri-axial High Resolution Digital Magnetometers

What are Lagrange Points?

- Named after Italian-French mathematician Josephy-Louis Lagrange
- Positions in space where gravitational forces of a two-body system (e.g. Sun & Earth) produce enhanced regions of attraction and repulsion
- Spacecrafts placed at L points consume lower fuel to remain in position
- L1 will provide ISRO continuous view of Sun without any occultation/ eclipses



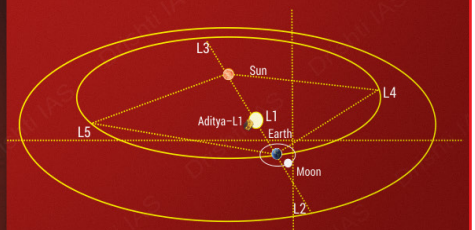


Illustration of all five Lagrange points of Sun–Earth System. Aditya–L1 will be placed around Largrange point 1

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Note:

Impact of mtDNA Mutations on Age-Related Muscle Loss

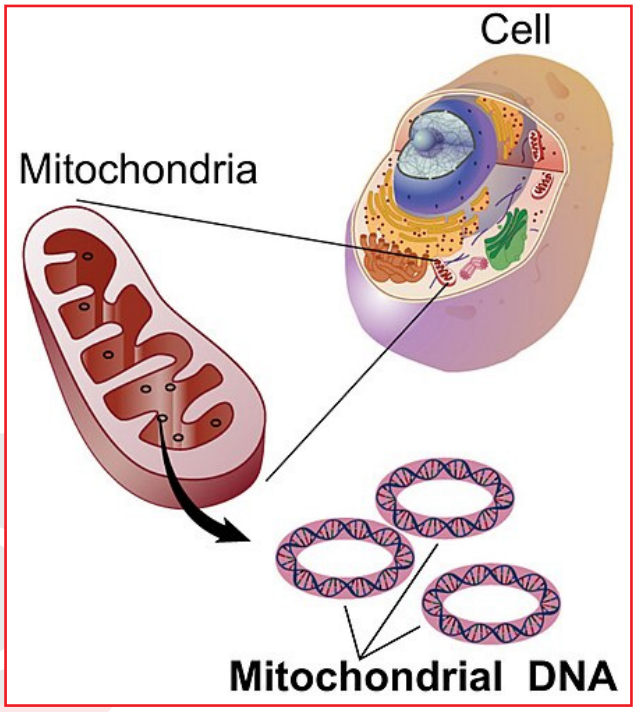
Why in News?

A recent study published in ***Genome Research*** reveals that **deletion mutations in mitochondrial Deoxyribonucleic Acid (mtDNA)** contribute significantly to **muscle loss with age.**

- Researchers found that these **mutations impair mitochondrial function**, leading to **muscle degradation.** This discovery offers potential pathways for delaying age-related muscle decline.

What is Mitochondria?

- **About: Mitochondria** are membrane-bound organelles found in the cytoplasm of most **eukaryotic cells.**
  - Often referred to as the **"powerhouses" of the cell,** mitochondria are essential for **producing energy** needed for various cellular processes.
  - Mitochondria are **inherited exclusively from the mother through the egg cell**.
- **Key Functions**:
  - **ATP Production:** Mitochondria generate **adenosine triphosphate (ATP),** the primary energy carrier in cells.
    - ATP is crucial for almost all cellular functions, including muscle contraction, protein synthesis (process by which cells create proteins from DNA), and cell division.
  - **Cellular Respiration:** Mitochondria are central to **cellular respiration** (break down food and release energy in the form of ATP).
  - **Regulating Cell Death**: Mitochondria are involved in controlling **apoptosis** (type of cell death), which is important for maintaining healthy tissues and organs.
- **Mitochondrial DNA (mtDNA):** Unlike most other organelles, mitochondria have their own DNA, known as **mtDNA.**
  - mtDNA is **prone to deletion mutations,** where parts of the **DNA are lost.** These mutations can have significant consequences on cellular function.
    - A deletion mutation in mtDNA makes the molecule smaller and less functional. Mutated mtDNA can **outcompete healthy mtDNA** during replication, causing a **gradual decline in mitochondrial function.**



Feature	Nuclear Genome (DNA)	Mitochondrial DNA (mtDNA)
Size	3.2 billion base pairs	16,569 base pairs
Shape	Linear, organized into 23 chromosomes	Circular
Genes	~20,000 protein-coding genes and ~15,000–20,000 non-coding genes	13 protein-coding genes, 24 non-coding genes
Inheritance	Inherited from both parents	Inherited only from the mother
Location	Found in the nucleus	Found in the mitochondria
Function	Encodes instructions for making most proteins	Encodes proteins crucial for mitochondrial function

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Note: A gene is a segment of DNA that is transcribed into **messenger RNA (mRNA).** The mRNA then moves from the nucleus to the **cytoplasm,** where the cell uses it to make proteins.

What are the Key Findings of the Study?

- **mtDNA Mutations:** The study identifies that deletion mutations in mitochondrial DNA (mtDNA) play a significant role in the loss of muscle mass with age.
- **Dysfunction and Muscle Loss:** Mutations **impair mitochondrial function,** causing muscle cells to struggle in generating enough **ATP,** leading to **muscle cell death and atrophy.**
  - The study found that mtDNA deletions lead to the **creation of chimeric genes** (where two different mitochondrial genes fuse and form abnormal sequences).
    - These chimeric genes disrupt the normal expression of mtDNA, further accelerating mitochondrial dysfunction.
- **Age-Related Changes:** Researchers found that older individuals showed a **two-fold increase in chimeric mitochondrial mRNA** due to mtDNA deletions, which, along with **abnormal gene expression**, accelerated **mitochondrial dysfunction and aging in muscle and brain tissues.**
- **Biological Age Indicators:** mtDNA deletion mutations and chimeric mRNA are valuable biomarkers for biological aging.
  - Understanding their role could lead to **therapies that prevent or repair these mutations,** potentially **delaying age-related muscle loss** and other aging symptoms.

Dark Matter and Dark Energy

Why in News?

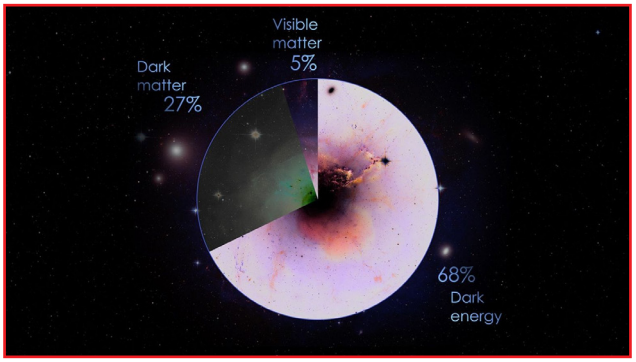
Recently, **physicists** revised the **minimum mass of dark matter** and pushed it up to **2.3×10^{-30} proton masses.**

- For decades scientists thought this minimum mass was about **10^{-31} times the mass of a proton.**

Note: In **1922, Dutch astronomer Jacobus Kapteyn** concluded the **density** of **"dark matter"** (using that term for one of the first times) must be **0.0003 solar masses per cubic light year.**

What is Dark Matter?

- **About:** Dark matter is a **form of matter** that is **entirely invisible**, emitting **no light or energy,** making it **undetectable** by conventional sensors and detectors.
  - Dark matter **doesn't interact with electromagnetic forces**, so it **neither absorbs, reflects, nor emits light,** making it hard to detect.
  - Dark matter makes up about **27% of the universe**, outweighing visible matter six to one, while **visible matter** accounts for **only 5%.**
  - **Visible matter (Baryonic matter)** consists of subatomic particles like **protons, neutrons, and electrons.**



- **Composition of Dark Matter:** Dark matter is thought to consist of **non-baryonic WIMPs (weakly interacting**

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Note:

massive particles), 10-100 times the mass of a proton, but weakly interacts with normal matter, making detection difficult. Among WIMPs are:

- **Neutralinos:** They are **hypothetical particles (not yet been observed)** that are heavier and slower than neutrinos.
- **Sterile Neutrinos:** Sterile neutrino is proposed as a dark matter candidate as it **only interacts with regular matter through gravity**. Also, **neutrinos** are particles that don't form regular matter.

➢ **Origin of Dark Matter:**

- **Big Bang Theory:** Dark matter may have formed during the **Big Bang** and concentrated into **black holes**, where their gravitational forces **trap dark matter** particles.
- **Stellar Remnants:** Stellar remnants such as **white dwarfs and neutron stars** are also thought to contain high amounts of dark matter.
  - **Brown dwarfs (failed stars)** that didn't accumulate enough material to kick-start nuclear fusion in their cores can also be a source of **dark matters.**

➢ **Evidence of Dark Matter:**

- **Galaxy Rotation Curves**: According to **Newtonian gravity**, objects at the **edge of galaxies** should be moving **slower** than those near the center.
  - Observations show **stars on galaxy edges move faster than expected**, suggesting **unseen mass**—attributed to dark matter—provides **extra gravitational pull.**
- **Gravitational Lensing**: **Gravitational lensing** occurs when **light is bent by a massive object's gravity**, revealing more mass than visible, suggesting the presence of dark matter.
- **Galaxy Formation: Galaxies' distribution and motion** over time suggest dark matter, as it enables galaxies to **clump together** and form current structures.

➢ **Projects to Study Dark Matter:** There are some key projects designed to shed light on dark matter.

- **Alpha Magnetic Spectrometer (AMS):** The AMS is an experiment mounted on the **International Space Station** which has detected an **excess of positrons** (the antimatter counterpart to electrons), which may be a signature of dark matter.
- **XENON1T:** The XENON1T experiment in the **Italian Gran Sasso Laboratory** aims to detect dark matter by observing the **interactions of WIMPs with xenon atoms.**
- **IceCube Neutrino Observatory, Antarctica:** The **IceCube Neutrino Observatory** is investigating the possibility of **sterile neutrinos**—hypothetical particles that only interact with regular matter via gravity and could be a form of dark matter.
- **Particle Colliders at CERN, Switzerland:** CERN's **Large Hadron Collider (LHC)** conducts high-energy particle collisions to probe the fundamental particles of the universe. The LHC also looks for potential signs of **dark matter by analyzing the aftermath of particle collisions.**
- **James Webb Space Telescope (JWST):** **JWST** is expected to provide valuable insights into how **galaxies and cosmic structures developed**, which could help us understand the role of dark matter in their formation.

Note: **Antimatter** consists of particles that are essentially the **same as visible matter** particles but with **opposite electrical charges.**

- ➢ These particles are called **antiprotons and positrons** (or antielectrons).
- ➢ **Antimatter** is **not** the same as **dark matter.**

What is Dark Energy?

➢ **Dark energy** is a **mysterious form of energy** that makes up about **68% of the universe.** It is thought to be responsible for the **accelerated expansion** of the universe.

➢ It is **distributed evenly** throughout the universe, not only in **space but also in time** i.e., its effect is **not diluted as the universe expands**.

➢ The even distribution means that dark energy does **not have any local gravitational effects,** but rather a **global effect** on the universe as a whole.

- This leads to a **repulsive force**, which tends to accelerate the **expansion** of the universe.

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Note:

- The **rate of expansion** and its **acceleration** can be measured by observations based on the **Hubble law.**
  - Hubble's Law states that **galaxies move faster away from Earth** as they are farther, implying the **universe is expanding**.

Quantum Satellite

Why in News?

India's **National Quantum Mission (NQM)** aims to launch a **quantum satellite** in 2-3 years, advancing secure communications through **quantum physics.** This initiative positions India at the forefront of next-gen technology.

What is a Quantum Satellite?

- **About**: A quantum satellite is a communications satellite that employs quantum physics to secure its signals, making it highly resistant to interception.
  - It utilizes **quantum cryptography** (a method that uses quantum mechanics to encrypt and transmit data), **particularly Quantum Key Distribution (QKD),** to protect data by detecting eavesdropping during transmission.
- **Quantum Cryptography:**
  - **Encryption Basics: Classical encryption methods,** like the ***Caesar cipher,*** messages are encoded in a **secret code**. Without the key, it is not possible for eavesdroppers to decipher the message.
    - However, these methods are vulnerable to **quantum computers,** which could crack the code much faster than traditional supercomputers.
  - **Quantum Encryption**: It uses **quantum key distribution (QKD),** to secure messages.
    - In **Quantum Measurement,** when a quantum system, such as a **photon (a tiny particle of light),** is measured, its state changes.
      - If an eavesdropper attempts to **measure the photons carrying a key,** this **interference alters the state of the photons.** As a result, the legitimate parties communicating will immediately detect that the key has been compromised.
    - Additionally, **quantum entanglement** ensures that **any change to one photon instantly affects the other**, making it impossible for an eavesdropper to alter the information without detection.
    - This makes QKD offer **"unconditional security"** by detecting any interception, ensuring secure communication.
- **Global Developments in QKD:** China currently operates the **world's largest QKD network,** which includes three quantum satellites and four ground stations.
  - India is advancing its quantum communications experiments, with plans for a satellite-based QKD network. Studies by the Raman Research Institute, Bengaluru, suggest that the **Indian Astronomical Observatory in Hanle, Ladakh,** offers ideal conditions for such a system.
    - **Indian Space Research Organisation (ISRO)** has successfully demonstrated free-space **Quantum Communication** over a distance of 300 m.
  - The **United Nations (UN)** has designated the year **2025 as the 'International Year of Quantum Science and Technology'** to increase public awareness of the importance of quantum science and its applications.

What are the Limitations of Quantum Key Distribution?

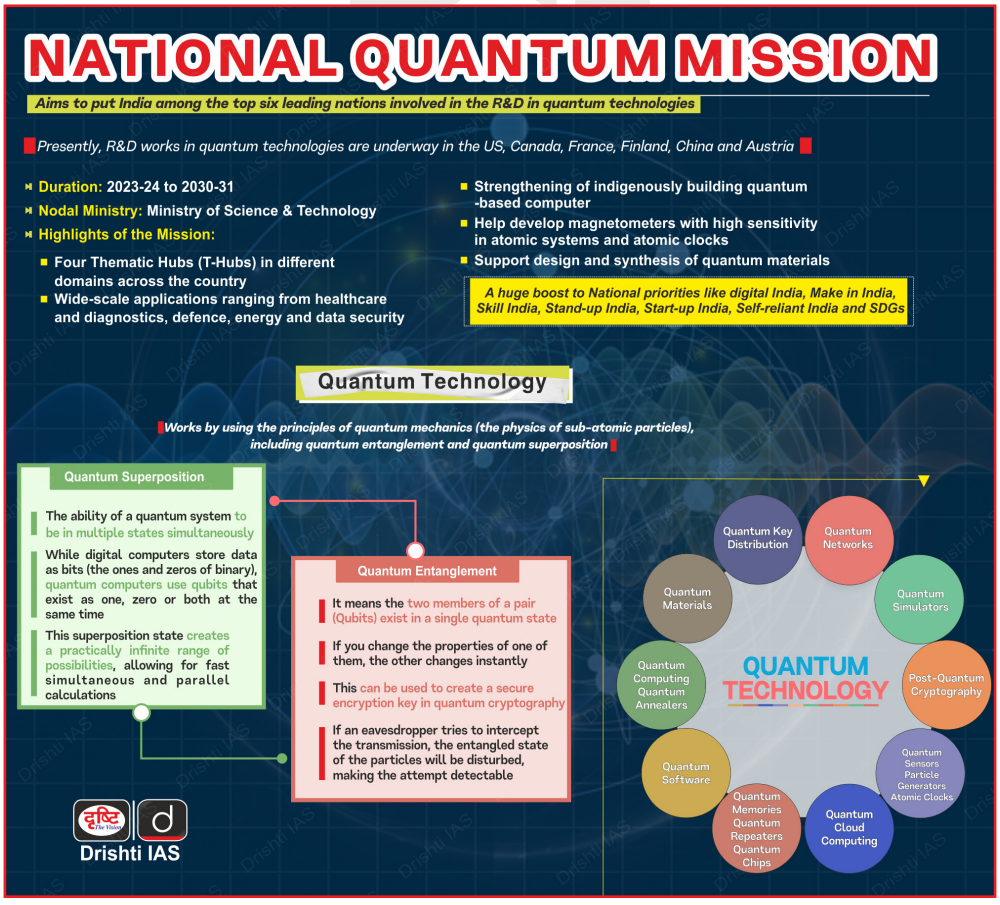
- **Technological Maturity:** The technology is still in the **experimental phase in India**, and commercial implementation of large-scale QKD networks is not yet feasible.
- **Infrastructure Costs:** Implementing QKD requires **specialized hardware and infrastructure,** which increases costs compared to traditional cryptography methods.
- **Integration:** Integrating QKD with **existing communication networks** and ensuring compatibility with classical encryption systems presents a significant technical challenge.
- **Lack of Authentication:** QKD doesn't provide a **reliable means to authenticate the source of the transmission,** making it vulnerable to potential attacks where an **adversary could impersonate a legitimate party.**

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Note:

What is the National Quantum Mission (NQM)?

- **About:** The NQM, launched in 2023 with a Rs. 60,000 crore investment from 2023-24 to 2030-31, aims to advance **Quantum Technologies in India** and position India as a global leader in **Quantum Technologies and Applications (QTA).**
- **Objective**: The NQM aims to develop quantum computers (build intermediate-scale quantum computers with 50-1000 physical **qubits (quantum bits)** over 8 years), utilizing **superconducting and photonic platforms**.
  - It will establish **satellite-based secure quantum communications** within 2000 km in India and internationally.
  - The NQM will support inter-city quantum key distribution over 2000 km and develop multi-node quantum networks. It also focuses on creating atomic clocks for precision applications.
- **Significance**: NQM aims to make **India a global leader in quantum technologies,** surpassing classical physics limits with advanced capabilities beyond current systems.
- **National Priorities:** The NQM aligns with and supports national priorities like **Digital India**, **Make in India**, **Skill India**, **Start-up India**, and **Self-reliant India.**
- **Implementation:** The Mission will establish four **Thematic Hubs** in collaboration with top academic and National R&D institutes. These hubs will focus on **Quantum Computing**, **Quantum Communication**, Quantum Sensing & Metrology, and **Quantum Materials & Devices.**
  - These hubs will drive new knowledge and research, advancing quantum technology.
- **Sectoral Impact:** The Mission will greatly benefit sectors such as **communication, health, financial services, energy, and more.** Specific applications include Drug design, Space exploration, and Banking and security.



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Note:

Nanoplastics Causing Antibiotic Resistance

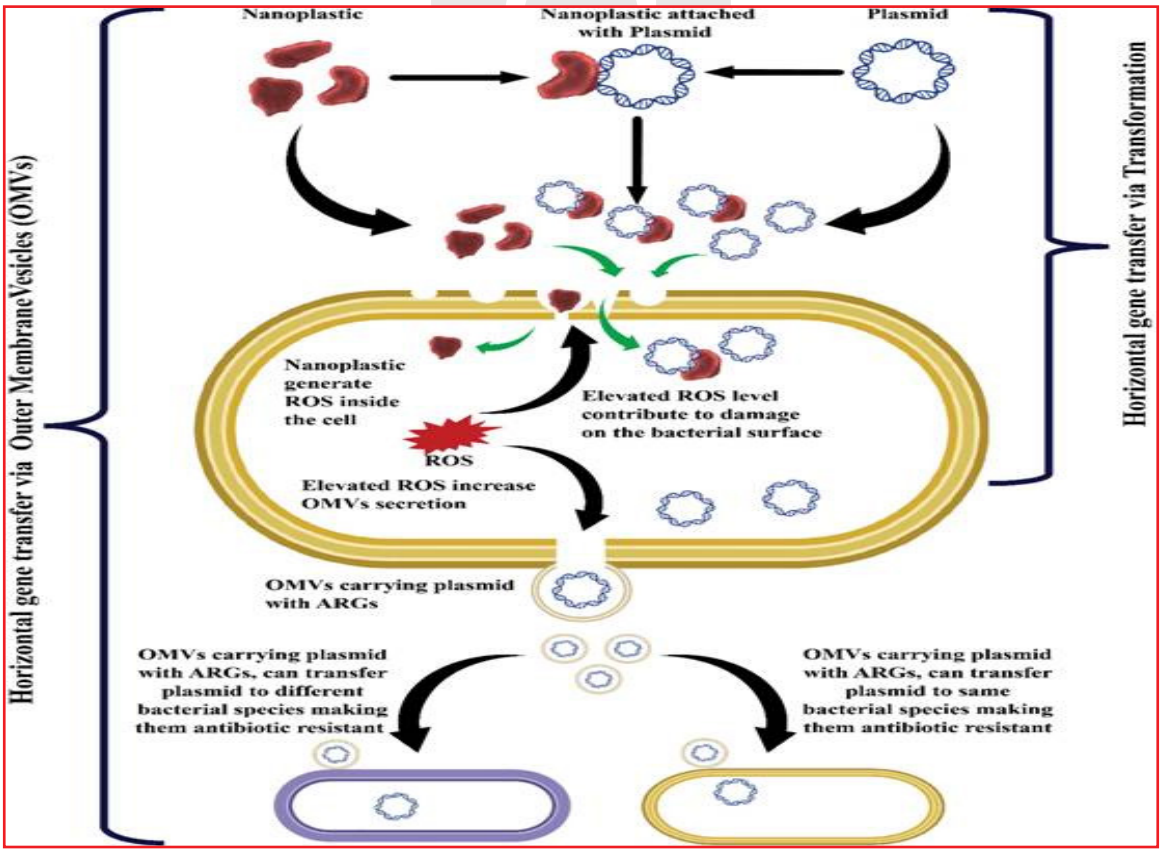
Why in News?

Recently, a study revealed that **nanoplastics** derived from **single-use plastic bottles (SUPBs)** contribute to the spread of **antibiotic resistance (AR)**, presenting an overlooked public health risk.

- Antibiotic resistance, **a type of antimicrobial resistance**, occurs when **bacteria evolve** to **resist** the effects of **drugs** that once killed them or inhibited their growth.

What are Key Highlights of the Study?

- **Risk to Gut Microbiome**: Nanoplastics could transform **Lactobacillus acidophilus (gut microbiota) into a carrier of AR genes**, which may then be transferred to pathogenic bacteria during infections, thus worsening the AR crisis.
- **AR Gene Transfer Mechanism:**
  - **Horizontal Gene Transfer (HGT)**: Polyethylene terephthalate bottle-derived nanoplastics (PBNPs) **facilitate** the transfer of AR genes from **E. coli to Lactobacillus acidophilus** through **horizontal gene transfer (HGT).**
    - In HGT, genes are **passed directly from one organism to another**, potentially across different species. (Vertical gene transfer, from parent to offspring).
  - **Two Mechanisms of AR Gene Transfer**:
    - **Direct Transformation Pathway**: PBNPs act as **physical carriers**, transporting AR plasmids across bacterial membranes and promoting direct gene transfer.
    - **OMV-Induced Transfer Pathway**: PBNPs induce **oxidative stress**, triggering increased **outer membrane vesicle (OMV) secretion**.
      - These OMVs, carrying AR genes, **facilitate gene transfer** between bacterial species, including between beneficial and pathogenic bacteria.

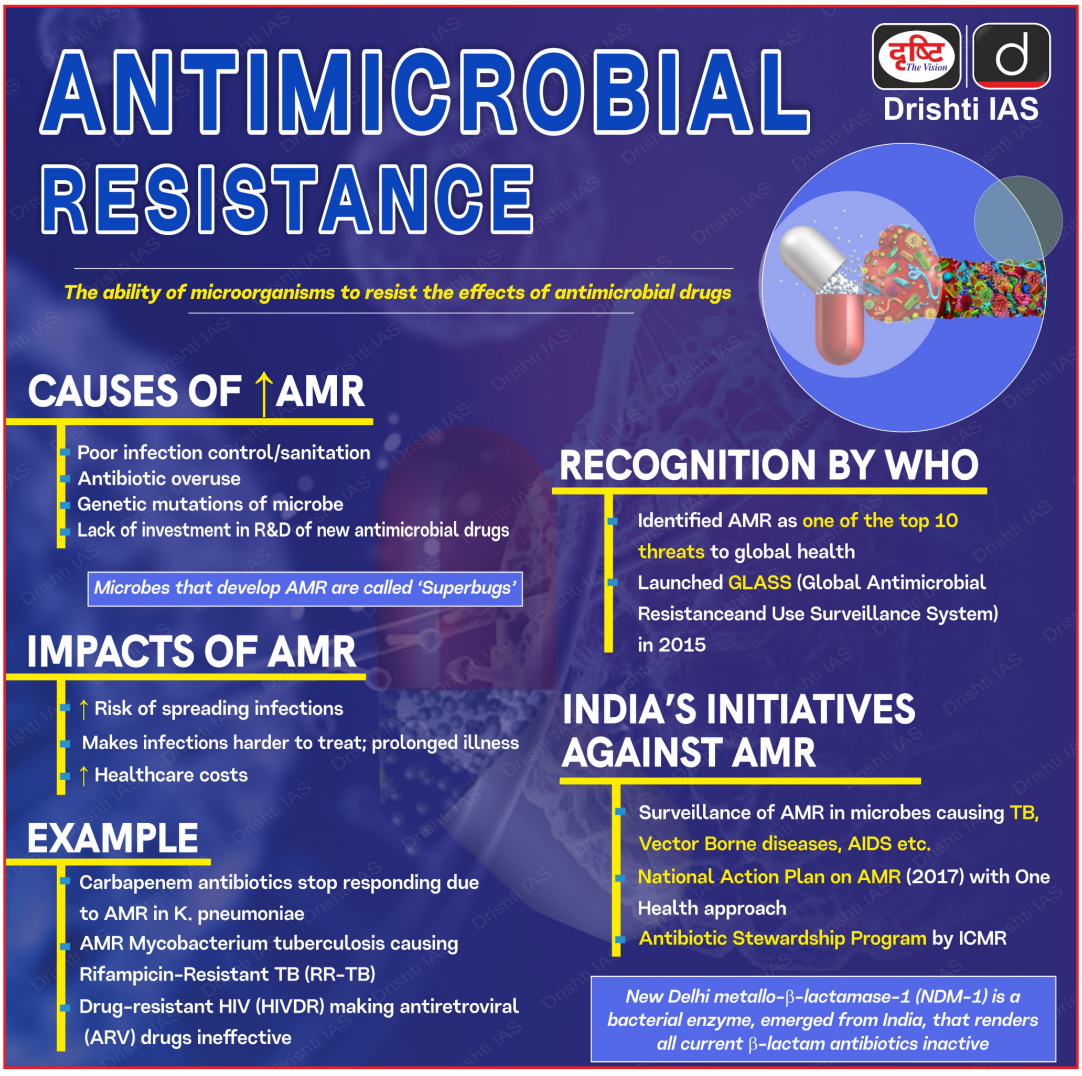


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Note:

What Are Nanoplastics?

- **Definition**: Nanoplastics are **solid particles** of **synthetic or heavily modified natural polymers** with sizes ranging between **1 nm and 1000 nm.**
- **Types:**
  - **Primary Nanoplastics**: These are **intentionally produced** nanoplastics, typically for specific applications.
  - **Secondary Nanoplastics**: The majority of nanoplastics in the environment are secondary, meaning they **result from the fragmentation of larger plastic** items released unintentionally into the environment.
- **Concerns with Nanoplastics**:
  - **Environmental Presence:** Disrupts marine food chains and **ecosystems**.
  - **Bioaccumulation**: Harmful effects on health.
  - **Toxicity**: Inflammation, and disruptions in normal **cellular processes.**
  - **Gut Microbiome Disruption**: Digestive problems, **immune dysfunction**, or an increased risk of infections.



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Note:

Environment and Ecology

Highlights

- *Impact of Climate Change on Water and Energy Demand*
- *India's E-Waste Management*
- *Biodiversity Credits for Environment Conservation*
- *Conservation of Cephalopods*
- *18th India State of Forest Report 2023*
- *Protecting Sacred Groves*
- *National Wildlife Health Policy*
- *Agricultural Expansion Threatens Biodiversity*
- *Strengthening Wetland Protection*
- *COP16 of UNCCD*

Impact of Climate Change on Water and Energy Demand

Why in News?

The interplay between climate change, **water availability** and **energy demand** represents one of the most **critical challenges** in sustainable development.

- Systemic solutions are required for **integrated resource management** as climate change rapidly affects both water and energy.

How Climate Change Affects Energy Demand?

- **Increased Energy Demand**: Global warming caused by **greenhouse gas emissions** leads to **higher demand for cooling systems** like air conditioners, especially in warmer regions.
  - According to the **International Energy Agency (IEA)**, climate change could increase global energy demand by **25% to 58% by 2050**, driven largely by the need for cooling.
- **Seasonal Patterns**: Besides cooling, some regions might experience **increased heating** demand due to extreme temperature fluctuations, creating **uneven energy requirements globally.**
- **Rising Temperatures**: The surge in cooling demand due to **global warming** creates a **feedback loop**: increased energy production (mostly fossil-fuel-based) further accelerates climate change.
  - It further leads to higher emissions of **air pollutants** and **greenhouse gases.**
- **Disruptions to Energy Supply:** Declining **snowpack** and **extended droughts** reduce water availability for **cooling power plants and hydropower.**
  - Industries like **petroleum refining and biofuel production**, which rely heavily on water, are affected by shortages.
- **Heat Effects:** High temperatures **reduce the carrying capacity of transmission lines**.
  - **Wildfires**, exacerbated by heat, destroy **transmission networks** and may start from faulty power lines.

Note: IEA reports that **fossil fuels** account for approximately **80% of global energy generation**.

- The **Intergovernmental Panel on Climate Change** estimates that fossil fuels are responsible for 73% of greenhouse gas emissions.

How Climate Change Affects Water Resources?

- **Energy Production**: Power plants require substantial **water for cooling to operate efficiently,** but this may be limited by water scarcity.
  - Changes in **streamflow (volume and timing)** affect hydroelectric dams.
  - **A kilowatt-hour of electricity** requires approximately **25 gallons of water** from rivers or lakes.
- **Altered Precipitation Pattern:** Global warming induced **drought** and **reduced rainfall** threaten water access for **drinking, irrigation, and energy.**
  - Declining snowpack reduces water supplies in regions dependent on snowmelt.
- **Bioenergy and Agriculture:** Growing crops for **bioenergy, such as rapeseed, sunflower, soybean,**

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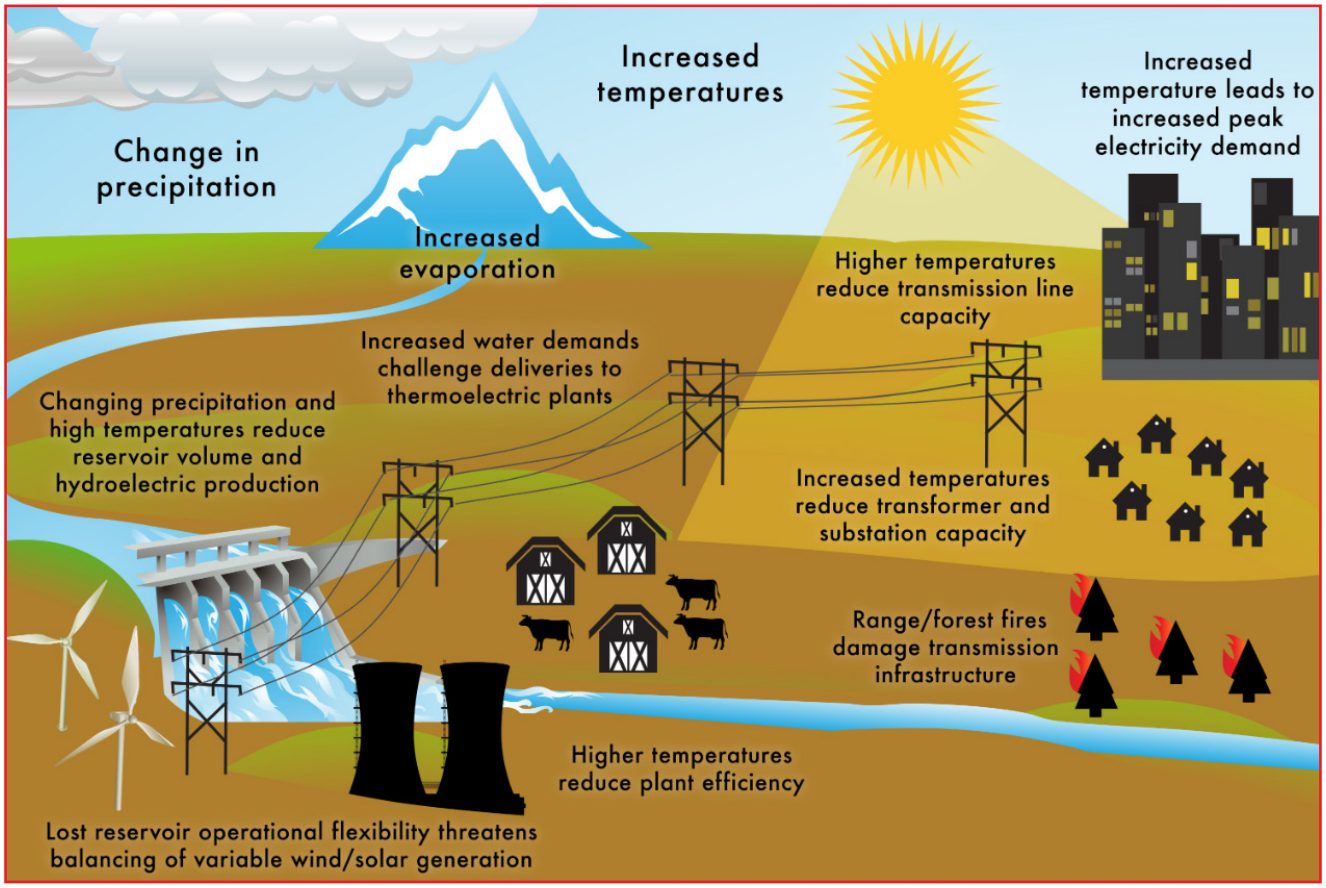
palm, or castor oil, can place additional stress on water resources.

- Rising temperatures increase **irrigation needs**, potentially over longer distances, increasing energy consumption.

- **Energy-Intensive Water Management:** Declining freshwat er may require **energy-intensive desalination** to convert saltwater into drinking water and groundwater extraction.

Note: According to the **World Resources Institute**, by **2040, 33 countries** will experience extreme water stress, with over **80% of their water resources withdrawn annually**.

- The **United Nations Environment Programme** anticipates a **30% increase in droughts by 2030,** particularly in vulnerable areas.
- The **World Meteorological Organization** reports a **fivefold increase** in climate-related disasters over the **past 50 years,** compounding global water stress.



How to Manage Climate-Water-Energy Correlation?

- **Water-Efficient Technologies:** Power plants can reduce water consumption by **up to 90%** through dry cooling systems with slight reduction in efficiency.
  - A dry cooler uses **air to cool fluids** instead of water.
- **Regional Energy Strategy:** High-resolution models **integrate crop, water, and economic data** to identify local resource constraints and develop **regional energy-economic strategies** that address specific needs at a local level.
- **Energy-Efficient Water Management:**
  - **Conventional Treatment**: Prioritising **low-water-intensity** (opposed to **desalination**) solutions like **conventional water treatment** and **water-saving practices** can help balance energy and water needs.

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Note:

- **Water-Efficient Practices**: Efficient irrigation systems like **drip irrigation** and **wastewater treatment**, can reduce energy consumption and water wastage.
- **Water Recycling:** Recycling **greywater** and industrial water can greatly **reduce freshwater demand** in agriculture and industry.

- **Maximise Renewable Energy:** Decentralized systems like **solar and wind** use minimal water (less than 1% of the water used by fossil fuels), reducing competition and supporting sustainable energy.
- **Nature-Based Solutions (NbS):** Restoring ecosystems such as **wetlands**, **forests**, and **watersheds** enhances water security and reduces energy demands associated with artificial water management systems.
- **Capacity Building:** Building capacity to **design, implement,** and **manage** sustainable energy and water systems is key to long-term success.

India's E-Waste Management

Why in News?

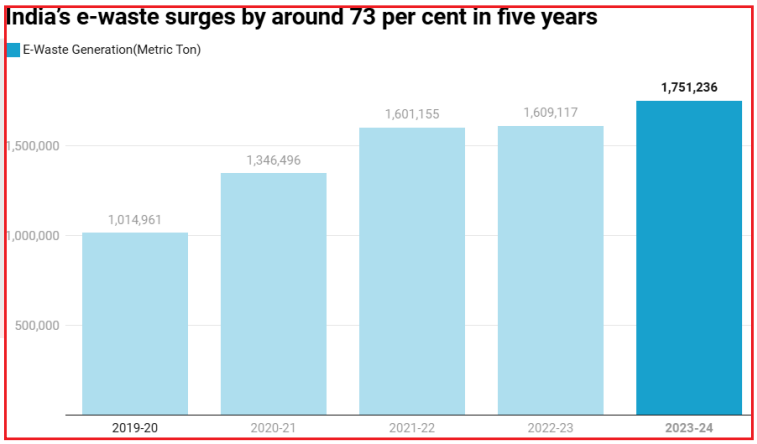
Recently, the **Minister of State for the Union Ministry of Housing and Urban Affairs** provided data that reflects growing use of electronic and electrical devices across the country.

E-waste

- **Electronic waste (e-waste)** refers to discarded electrical and electronic equipment, including household appliances and office devices, that are old or at the end of their life.
- E-waste contains numerous toxic chemicals including metals such as lead, cadmium, mercury, and nickel.

What is the State of E-Waste in India?

- **Volume Growth**: India has witnessed a **72.54% rise in e-waste generation over five years,** increasing from 1.01 million metric tonnes (MT) in 2019-20 to 1.751 million MT in 2023-24.
  - Approximately **57 %** of e-waste **(equivalent to 990,000 MT)** of e-waste remains untreated annually.
  - The 65 cities in India generate more than 60% of the total generated e-waste, whereas 10 states generate 70% of the total e-waste.
- **Recycling Gaps**: Only **43% of e-waste** was recycled in 2023-24, up from **22% in 2019-20.**
  - Informal sectors dominate e-waste handling, lacking environmental safeguards.
- **Global Context**: India is the **third-largest e-waste generator** globally, after **China and the US.**
  - **Approximately 53.6 MT of e-waste** was generated worldwide in 2019, as per UN estimates.



E-Waste (Management) Rules

- **E-Waste (Management) Rules 2022:**
  - **Extended Producer Responsibility (EPR)**: Producers are mandated to achieve annual recycling targets via registered recyclers.
    - **EPR** certificates ensure accountability for recycled products.
  - **Expanded Product Coverage**: Inclusion of 106 **Electrical and Electronic Equipment (EEE)** items from FY 2023-24 (up from 21 items).
  - **Integration of Bulk Consumers**: Public institutions and offices must dispose of e-waste via registered recyclers/ refurbishers.
    - Registered recyclers and refurbishers are tasked with managing e-waste collection and processing.

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Note:

- **E-Waste (Management) Second Amendment Rules, 2023:** Under **Rule 5 of E-Waste (Management) Rules, 2022, clause 4** was added to ensure safe, accountable, and sustainable refrigerant management in refrigeration and air-conditioning manufacturing.
- E-Waste (Management) Amendment Rules, 2024:
  - The **Central Government** may **establish platforms** for **trading Extended Producer Responsibility** certificates **as per guidelines** issued by the **Central Pollution Control Board** with its approval.
  - The Central Pollution Control Board will **set the price range for Extended Producer Responsibility** certificates at **100% (maximum)** and **30% (minimum)** of the environmental compensation for non-compliance.

What are the National and International Conventions Related to E-waste Management?

- **International:**
  - Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1989).
    - **India** is a party to the Basel Convention
  - **Bamako Convention (1991):** Prohibits the **import of hazardous waste (including e-waste) into Africa** and controls the transboundary movement of such waste within the continent.
  - Minamata Convention on Mercury (2013)
    - **India** ratified the Minamata Convention in **2018.**
  - Stockholm Convention on Persistent Organic Pollutants (POPs) (2001).
    - India ratified the Stockholm Convention and implements its provisions through domestic laws.
- **National:**
  - **E-Waste (Management) Rules, 2022:** Focuses on **EPR** and proper recycling.
  - Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
  - **National Action Plan for Chemical and Waste Management:** Reflects commitments to the Stockholm and Rotterdam Conventions.

What are the Common E-Waste Disposal Methods in India?

- **Landfilling:** It involves **burying e-waste in excavated pits**, sealed with layers of earth.
  - A major **concern** is the **risk of hazardous substances** leaching **into soil** and groundwater, causing environmental harm.
- **Incineration:** Controlled **burning of e-waste at high temperatures (900–10,000°C)**, reduces waste volume and neutralizes some hazardous substances.
- **Recycling: Dismantling e-waste** to recover valuable materials (**e.g., metals, plastics**) and safely dispose of toxic components. It reduces hazardous substances like mercury, cadmium, and lead, minimizing environmental and health risks.
  - **Examples:** Recycling printed circuit boards, CRTs, mobile phones, and wires.

What are the Issues and Challenges in E-Waste Management?

- **Informal E-Waste Recycling: Informal e-waste recycling**, using **hazardous methods like burning and acid leaching**, releases **toxic fumes and contaminates soil and water**, posing serious environmental and health risks.
  - Informal recycling markets in **China, India, Pakistan, Vietnam**, and **Philippines** handle anywhere from 50 % to 80 % of the world's **E-Waste.**
- **Lack of Infrastructure:** The lack of infrastructure for e-waste management, including **insufficient collection points** and **recycling facilities**, leads to improper disposal.
  - This **results in e-waste ending up in landfills**, causing soil and water contamination from harmful chemicals.
- **Lack of Awareness:** Lack of awareness among consumers, businesses, and policymakers about **proper disposal and recycling.**
  - **For instance,** individuals might dispose of their **e-waste in regular trash bins** or **donate it to charities** that lack the proper resources to manage e-waste responsibly**.**

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Note:

- **Environmental Effects of E-waste:** E-waste harms the **environment as toxic materials (**like **lead, cadmium, and mercury) contaminate water, soil**, and air, affecting wildlife.
  - **Improper disposal exacerbates groundwater contamination, air pollution**, and **soil degradation**.

What Strategies Can Strengthen E-Waste Management in India?

- **Integration of Informal Sector**: Integrate informal waste handlers into formal systems **to boost collection rates**. Provide training programs for informal recyclers on safe handling techniques.
  - For example, **China** formalizes the informal sector with training and financial support through Regulation on the Management of the Recovery and Disposal of **Waste Electrical and Electronic Products (WEEE)**.
- **Technological Advancements**: Promote research in advanced recycling technologies to enhance efficiency and **develop AI and IoT-based solutions** for improved e-waste tracking and collection systems.
  - EUs **"right to repair"** rules clarify the obligations for manufacturers to repair goods and encourage consumers to extend a product's lifecycle through repair.
- **Learning from Global Practices:**
  - **EU:** Set stringent **recycling targets** and enhance eco-design incentives for producers.
    - For example, **the Waste Electrical and Electronic Equipment (WEEE)** Directive by the European Union (EU).
  - **Japan:** Introduce a **nationwide e-waste recycling fee** to **fund and support recycling initiatives** effectively.
    - Japan focuses on **Extended Producer Responsibility (EPR)** through **Home Appliance Recycling Law (HARL)**.
- **Refurbishing and Reuse Programs:** Create **incentives for companies** to refurbish used electronics for resale, extending their lifecycle.
  - **Example:** In **Germany**, consumers can **return old devices for repair** or refurbishment at designated centers.
  - **Strengthen organized second-hand markets** to make affordable electronics accessible while reducing e-waste.
- **Public Awareness and Education**: Campaigns targeting urban and rural populations on e-waste hazards and proper disposal methods.
  - Collaboration with NGOs and think tanks for outreach programs.
- **Collaboration with International Bodies:** Partner with organizations like the **International Telecommunication Union (ITU)** for capacity building in recycling technologies.

Biodiversity Credits for Environment Conservation

Why in News?

Recently, a new study published in the journal **Proceedings of the Royal Society B,** casts doubt on the **effectiveness of the biodiversity credit market** which is touted as a **potential game-changer** for biodiversity conservation**.**

- The study also highlighted **deep uncertainties** within the market and **questioned** whether its benefits designed to **offset biodiversity loss**, truly outweigh the potential harms.

What are Biodiversity Credits?

- **About:** Biodiversity credits are a **verifiable, quantifiable and tradable financial instrument** that rewards **positive nature and biodiversity outcomes** (e.g. species, ecosystems and natural habitats) through the **creation and sale** of either **land or ocean-based biodiversity units** over a fixed period.
  - The **World Economic Forum (WEF)** launched the **Biodiversity Credits Initiative** to unlock **new financing** for measurable positive outcomes for nature.
- **Mechanism:** Biodiversity credits function similarly to **carbon credits.**
  - When a **company or government** harms biodiversity, they can **offset the damage** by paying for **conservation efforts elsewhere**.

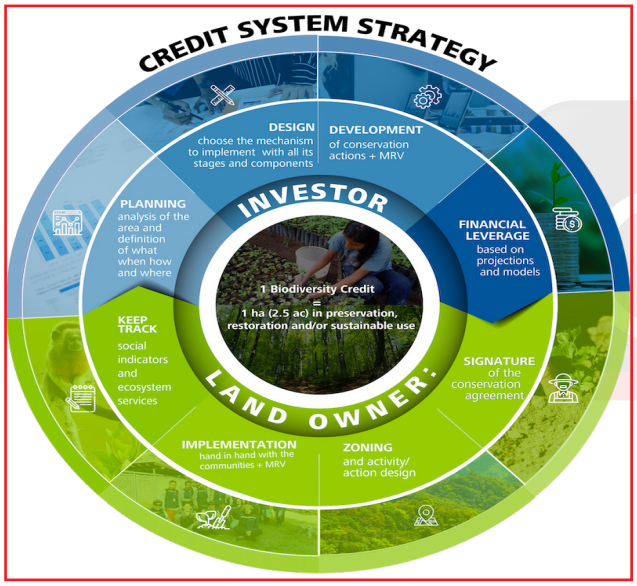
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Note:

- The idea is to **balance the overall loss** to biodiversity through **compensatory actions** while attracting private funding for conservation.

➢ **Future Potential:** WEF estimates the biodiversity credit market is worth **USD 8 million**, with projections reaching **USD 2 billion by 2030** and **USD 69 billion by 2050.**

- The **Kunming-Montreal Global Biodiversity Framework 2022** calls for financing mechanisms like **ecosystem services payments, green bonds, and biodiversity credits** to mobilize **USD 200 billion annually by 2030**. In line with this, the **Biodiversity Credit Alliance (BCA)** was launched.



Biodiversity Credit Alliance (BCA)

➢ **About:** BCA is a **voluntary** international alliance that brings together diverse stakeholders to support the **realization** of the **Kunming–Montreal Global Biodiversity Framework.**

- It focuses on **Targets 19(c) and (d)**, which **"encourage the private sector to invest in biodiversity"** utilizing, amongst others **"biodiversity credits ... with social safeguards."**

➢ **Background:** BCA was launched during the **15th meeting of Convention on Biological Diversity (CBD COP 15)** in December 2022, in **Montreal, Canada.**

- The BCA Secretariat is facilitated by **UNDP, UNEP-Finance Initiative (UNEP FI)** and the **Swedish International Development Cooperation Agency (SIDA)**.

➢ **Objectives:** BCA provides guidance for the formulation of a **credible and scalable** biodiversity credit market by building a framework of **high-level, science-based principles.**

➢ **Key Stakeholders:** It includes representatives from **indigenous peoples, local communities, and the private sector**, with the **World Business Council for Sustainable Development (WBCSD)** as a key partner.

What are the Initiatives Related to Biodiversity Conservation?

➢ **India:**

- India Business & Biodiversity Initiative (IBBI)
- Wetland (Conservation and Management) Rules 2010
- National Plan for Conservation of Aquatic Ecosystem
- Wildlife Crime Control Bureau
- Biological Diversity Act, 2002

➢ **Global:**

- Nagoya Protocol
- Convention on International Trade in Endangered Species of Wild Fauna and Flora
- World Wide Fund for Nature

What are the Concerns Related to the Biodiversity Credit Market?

➢ **Flawed Concept:** When a company or government harms biodiversity, they can **offset the damage** through conservation payments elsewhere, but this is **criticized** for **shifting harm** instead of **preventing it** and addressing **root causes**.

➢ **Displacement and Land Grabs**: Wealthy **corporations and nations** could purchase credits sourced from poorer countries in the **Global South**, leading to **land grabs and displacement** of Indigenous and local communities.

- Displacement and loss of access to land and resources disproportionately affect **women and marginalized groups**.

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Note:

- **Lack of Accurate Measurement**: Unlike **carbon credits**, which are standardized in terms of **one tonne of CO_2 or CO_2 equivalent**, biodiversity credits are measured in **hectares**, making it **difficult to equate biodiversity** across different ecosystems, continents, and **biomes**.
  - **Additionally, Leakage** occurs when harmful activities, like **deforestation, shift to other areas,** such as farmers converting new land for agriculture **after adopting biodiversity credits.**
- **Delay of Systemic Changes**: Biodiversity credits may provide a **temporary solution**, delaying systemic changes needed to tackle biodiversity loss.
  - Biodiversity credits, often issued for **short periods,** make it difficult to assess **long-term impacts**, as trends like **butterfly populations require longer data** for accurate evaluation.

Conservation of Cephalopods

Why in News?

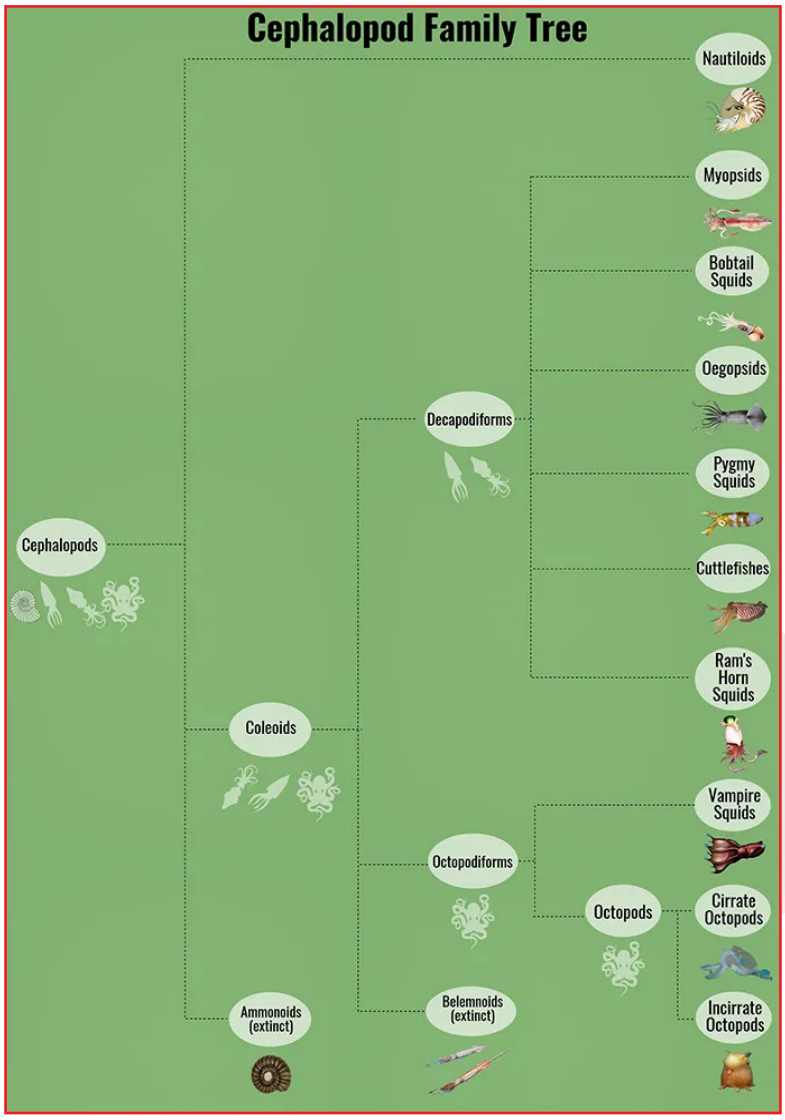
Recently, **California and Washington** have approved **bans on octopus farming**. **Hawaii** is considering similar action against raising **octopus, a member of Cephalopods**, demand for food.

What are Cephalopods?

- **About:** Cephalopods are a class of **ocean-dwelling intelligent invertebrates** that includes **cuttlefish, squid and octopus**.
  - Cephalopods are a broad class of **molluscs.** Mollusca are **soft-bodied invertebrates**, often enclosed **partly or fully** in a **calcium carbonate shell.**
  - Early cephalopods had **protective shells**, but many lost them, and evolved traits like **high intelligence, flexible arms, and camouflage**.
- **Diversity:** Cephalopods are a diverse class with **three superorders**:
  - **Octopodiforms** (**octopuses** and related species)
  - **Decapodiforms** (**squid, cuttlefish**, and related species)
  - **Nautiloids** (**nautiluses** and related species)
- **Anatomy**: The term **cephalopod** means **"head foot,"** referring to the connection between their head and arms.
  - Cephalopods have **two eyes and at least eight arms**. E.g., octopuses are eight-armed while **squids are ten-armed.**
  - **Nautiluses** are the only cephalopods with an **external shell.**
- **Eyes and Vision**: Most cephalopods are likely **colorblind** and exhibit **visual camouflage.**
  - They can **open and close tiny sacs** just below their skin that contain coloured **pigments and reflectors**, revealing specific colours.
- **Movement:** Cephalopods mainly use **jet propulsion**, expelling water from their mantle cavity to propel themselves.
  - Octopuses **walk with their arms**, while squid and cuttlefish use **fins** for movement.
- **Circulatory System**: Cephalopods have **three hearts**: two pump deoxygenated blood, and one pumps oxygenated blood.
  - Their **blood is blue** due to **copper-based hemocyanin**, which is less efficient than iron-based **hemoglobin** but highly effective in **cold, low-oxygen environments.**
- **Brain:** Over half of the **neurons** in common octopus (Octopus vulgaris) are not in the brain at all, but distributed in **"mini-brains," or ganglia, in the arms.**
  - Most neurons in the **central brain focus on vision**, leaving less than a quarter for learning and memory.

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Note:



18th India State of Forest Report 2023

Why in News?

Recently, the **Ministry for Environment, Forest and Climate Change** released the **18th India State of Forest Report 2023 (ISFR 2023).**

- ISFR is brought out by the **Forest Survey of India (FSI)** on a biennial basis since 1987.

What are the Key findings of ISFR 2023?

- **Forest and Tree Cover:** The total forest and tree cover of the country is **8,27,356.95 km²** which is **25.17%** of the geographical area (GA) of the country.
  - The total **Forest Cover** has an area of **7,15,342.61 km² (21.76%)** whereas the **Tree Cover** has an area of **1,12,014.34 km² (3.41%).**

Class	Area (km²)	Percentage of GA
Forest Cover	7,15,342.61	21.76%
Tree Cover	1,12,014.34	3.41%
Total Forest and Tree Cover	8,27,356.95	25.17%
Scrub	43,622.64	1.33%
Non Forest	24,16,489.29	73.50%
Geographical Area of the Country	32,87,468.88	100.00%

- **Increase in Forest and Tree Cover:** The country's forest and tree cover has increased by **1,445.81 km², with a 156.41 km² rise** in forest cover compared to 2021.
  - **Maximum increase (Forest and Tree Cover): Chhattisgarh (684 sq km)** followed by Uttar Pradesh (559 sq km), Odisha (559 sq km) and Rajasthan (394 sq km).
  - **Maximum Increase (Forest Cover): Mizoram (242 sq km)** followed by Gujarat (180 sq km) and Odisha (152 sq km).
  - **Largest Decrease: Madhya Pradesh (612.41 km²)** followed by Karnataka (459.36 km²), Ladakh (159.26 km²), and Nagaland (125.22 km²).
- **Top Three States:** Area wise top three states having largest forest cover are **Madhya Pradesh** (77,073 sq km) followed by **Arunachal Pradesh** (65,882 sq km) and **Chhattisgarh** (55,812 sq km).
  - In terms of **percentage** of forest cover with respect to total geographical area, **Lakshadweep** (91.33%) has the highest forest cover followed

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by **Mizoram** (85.34%) and **Andaman & Nicobar Island** (81.62%).

- **High Forest Cover: 19 states/UTs** have **above 33%** of the geographical area under forest cover.
  - Out of **these, eight states/UTs** namely **Mizoram, Lakshadweep**, A & N Island, Arunachal Pradesh, Nagaland, Meghalaya, Tripura, and Manipur have forest cover **above 75%.**
- **Carbon Stock:** The country's forest **carbon stock** is estimated at **7,285.5 million tonnes**, with an **increase of 81.5 million tonnes** compared to 2021.
  - **Top 3: Arunachal Pradesh** (1,021 Mt) followed by Madhya Pradesh (608 Mt), Chhattisgarh (505 Mt) and Maharashtra (465 Mt).
  - India's carbon stock has reached **30.43 billion tonnes of CO^2 equivalent**, **exceeding the 2005 base year by 2.29 billion tonnes**, nearing the **2030 target** of **2.5–3.0 billion tonnes**.
- **Regional Performance:** The **Western Ghats Eco-Sensitive Areas (WGESA)** covers **60,285.61 km²**, with 44,043.99 km² (73%) under forest cover.
  - The total forest and tree cover in the **Northeastern region** is **1,74,394.70 km²** , which is **67%** of the geographical area of these states.
- **Mangrove Cover:** India's **mangrove** cover is **4,991.68 km²**, representing **0.15%** of the total geographical area, with a **net decrease of 7.43 km²** since 2021.
  - **Gujarat** saw a **decrease** of **36.39 km²** in mangrove cover, while **Andhra Pradesh** and **Maharashtra** experienced increases of **13.01 km² and 12.39 km², respectively.**
- **Forest Fire:** The top three states with the most fire incidents in the 2023-24 season are **Uttarakhand, Odisha, and Chhattisgarh.**

Note

- **Paris Agreement:** In the **Nationally Determined Contribution (NDC)** commitments made at the Paris Climate Change Agreement, **India** has resolved to create an **additional carbon sink of 2.5 to 3 billion tonnes of CO_2 equivalent** through additional forest and tree cover by **2030.**
- **Bonn Challenge:** India has also pledged to bring in **26 million hectares** of **degraded land** under **restoration by 2030**, as part of **Bonn Challenge**.
- **Livelihood:** India's forests support the livelihoods of about **17%** of the **global human population** and **18% of the world's total livestock.**
- **Global Standing:** As per **Global Forest Resource Assessment (GFRA, 2020)** published by **FAO**, India is ranked amongst the **top 10** countries of the world, in terms of **forest area** and holds **3rd position** for **highest annual net gain in forest cover** between 2010-2020.

Forest Survey of India

- **Established**: Established on **1st June 1981**, succeeding the **Pre Investment Survey of Forest Resources (PISFR)** initiated in **1965**.
  - In **1976**, the **National Commission on Agriculture (NCA)** recommended establishing a **National Forest Survey Organization,** leading to the creation of **FSI.**
  - PISFR was initiated in **1965** by the Government of India with the sponsorship of **FAO and UNDP.**
- **Parent Organization**: **Ministry of Environment and Forests**, Government of India.
- **Primary Objective**: To **assess and monitor the forest resources** of India regularly.
  - In addition, it is also engaged in providing the services of **training, research and extension.**
- **Functioning:** FSI has headquarters at **Dehradun** and has pan India presence with four regional offices at **Shimla, Kolkata, Nagpur and Bangalore**.
  - The Eastern zone has a sub centre at **Burnihat (Meghalaya).**

What are the Trend in Forestry Parameters Between 2013-2023?

- **Increase in Greenery:** The forest cover of the country has shown an **increase** of **16,630.25 km².**
  - The **tree cover** has shown an increase of **20,747.34 km².**
  - **Mangrove** cover of the country has increased by **296.33 km².**
- **Soil Health:** There is a general improvement in **soil health** (**87.16%** of shallow to deep soil as against **83.53% in 2013**) reflected by improvement in humus.

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Note:

- The soil organic carbon has increased from **55.85 tonnes per hectare to 56.08 tonnes per hectare.**
  - Soil organic carbon is **carbon contained in soil organic matter** which contributes to **soil aggregation, enhancing soil structure and stability**.

- **Biotic influences:** Biotic influences on forests have also come down to **26.66% from 31.28% in 2013** which indicates **improved floral biodiversity**, and improved surroundings for **faunal biodiversity.**
  - Biotic influences are any influence of living organisms. In forests, the biotic influences could include **grazing, browsing, man-made fire, pollarding, illicit felling, and lopping.**

Protecting Sacred Groves

Why in News?

Recently, the **Supreme Court** directed the Union government to create a comprehensive policy for the protection of **sacred groves** across the country.

- The judgment was inspired from the **Piplantri Model** created in a **Piplantri village** in **Raasthan's Rajsamand district.**

What are Sacred Groves?

- **About:** Sacred Groves are the tracts of **virgin forests** that are left untouched by the local inhabitants and are **protected by the local people** due to their **culture and religious beliefs.**
  - Sacred groves are **relic vegetation** of once dominant flora.
- **Sacred Groves in India**: Over 1 million sacred forests and **100,000 to 150,000 sacred groves** exist across India.
  - It is prominent in **Maharashtra, Karnataka, Kerala, Tamil Nadu, and Uttarakhand**.
- **Statutory Provision: Wild Life (Protection) Act, 1972** empowers State governments for declaration of any **private or community land**, as a **community reserve**, under which sacred groves can be declared as community reserves.
  - **National Forest Policy, 1988,** backed by the ***Godavarman Case, 1996,*** encouraged communities with **customary rights** to protect and improve these forest patches on which they depend for their needs.
- **Cultural Significance**: It is integral to **Hindu beliefs**, promoting **coexistence and reverence** for nature.
- **Role in Conservation**: Practices like **tree worship** and strict prohibitions on logging and hunting align with biodiversity principles.
  - Serve as **refuges for diverse flora and fauna** and maintain clean water ecosystems.
  - They are examples of **Other Effective Area-Based Conservation Measures (OECMs).**
- **Different Names:**

Region/State	Name of Sacred Groves
Himachal Pradesh	Devban
Karnataka	Devarakadu
Kerala	Kavu
Madhya Pradesh	Sarna
Rajasthan	Oran
Maharashtra	Devrai
Manipur	Umanglai
Meghalaya	Law Kyntang/Law Lyngdoh
Uttarakhand	Devan/Deobhumi
West Bengal	Gramthan
Andhra Pradesh	Pavithravana

Note:

- The **Supreme court (SC)** cited **Verse 20 from Chapter 13** of the Bhagavad Gita: **"Nature is the source of all material things:** the maker, the means of making, and the things made. **Spirit is the source of all consciousness** which feels pleasure and feels pain."
- In the ***Godavarman Case 1996,*** the SC addressed multiple environmental issues, ranging from **encroachments of forest lands to wildlife conservation, the regulation of mining activities within forest areas**.

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Note:

Piplantri Model

- It showed how **environmental protection, gender equality, and economic growth** can work together to change communities.
- The sarpanch of the **Piplantri village** started the initiative to **plant 111 trees for every girl child born.**
  - It started after the tragic death of her girl child due to environmental damage caused due to excessive **marble mining**, leading to water shortages, deforestation, and economic decline.
- Environmentally, **over 40 lakh trees** have been planted, which has helped **raise the water table by 800-900 feet** and **cooled the climate by 3-4^{0}C.**
- It also led to drastic lowering of **female foeticide, increased local income, avenues of education** and saw women self-help groups flourish.

National Wildlife Health Policy

Why in News?

Recently, the Indian government proposed a **National Wildlife Health Policy** aimed at addressing health threats faced by wildlife.

What is the Proposed National Wildlife Health Policy?

- **About:**
  - The **Central Zoo Authority**, under the **Ministry of Environment, Forest and Climate Change (MoEF&CC),** organized a consultative workshop involving government departments, **NGOs**, academic institutions, **zoological parks**, and veterinary universities.
    - The policy development is being supported by institutions such as the GISE Hub at **IIT Bombay** and the **Office of the Principal Scientific Adviser** to the Government of India.
- **Aim:**
  - The policy will complement **India's National Wildlife Action Plan (2017-31)** and the **One Health policy**, which **aims** to optimize the **health of people, animals, and the environment** by recognizing their interdependence.
  - The **National Wildlife Action Plan (2017-31)** outlines **103 conservation actions** and **250 projects**.
    - These include creating a **standard protocol for disease surveillance** in tiger reserves, protected areas, and forests, as well as **establishing a legally binding protocol** for mercy killing and euthanasia of wild animals.
  - The policy will also cover areas such as **managing wildlife pathogen risk**, **disease outbreak preparedness** and **response**, and **biosecurity.**
  - **The policy aimed to** promote **R&D initiatives** focused on wildlife diseases and health management strategies.
    - Enhance the **skills and knowledge of stakeholders** involved in wildlife conservation and management.
- **Current Wildlife Health Challenges:**
  - Indian wildlife is facing **various health issues**, including **infectious diseases (Canine Distemper Virus),** habitat loss, climate change impacts, and illegal activities.
    - The policy is required as **India is home to over 91,000 species of wildlife**, with **more than 1,000 protected areas**, including national parks, wildlife sanctuaries, and biosphere reserves.

Central Zoo Authority

- The **Central Zoo Authority (CZA)** is a statutory body under the Ministry of Environment, Forest and Climate Change, established in 1992 under the Wildlife (Protection) Act, 1972.
- It is chaired by the Environment Minister and has 10 members and a member-secretary.
- Its objective is to complement and strengthen the national effort in conservation of rich biodiversity.

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Note:

WILDLIFE CONSERVATION INITIATIVES

Constitutional Provisions for Wildlife

- **42nd Amendment Act, 1976:** Forests & Protection of Wild Animals and Birds (moved from State to Concurrent List)
- **Article 48 A:** State shall endeavor to protect & improve environment and safeguard forests and wildlife of country
- **Article 51 A (g):** Fundamental duty to protect & improve natural environment including forests and Wildlife

Legal Frameworks

- Wildlife (Protection) Act, 1972
- Biological Diversity Act, 2002

Major Conservation Initiatives

- **Integrated Development of Wildlife Habitats (IDWH):**
  - Financial assistance provided to State/UT Governments for protection and conservation of wildlife
  - A Centrally Sponsored Scheme
- **National Wildlife Action Plan (2017-2031)**
- **Guidelines for Eco-tourism in Protected Areas**
- **Human-Wildlife Conflict Mitigation**
- **Wildlife Crime Control Bureau:** To combat wildlife-related crimes
- **Wildlife Division (MoEFCC):**
  - Policy and law for conservation of biodiversity and Protected Area network
  - Technical and financial support to the State/ UTs under IDHW, Central Zoo Authority and Wildlife Institute of India
- **Wildlife Crime Control Bureau (WCCB):** Collection, collation of intelligence & its dissemination, establishment of centralized Wild Life crime databank, coordination etc.
- **Wildlife Crime Control:**
  - Operation Save Kurma
  - Operation Thunderbird

Species-Specific Initiatives

- Protection and conservation of Greater Adjutant in Gangetic riverine tract
- Dolphin Conservation in Non-Protected Area Segment of Ganga River
- Conservation Breeding Centre for Wild water buffalo (2020)
- Recovery programme for Snow leopard (2009)
- Recovery programme for Vultures (2006)
- Project Elephant (1992)
- Project Tiger/National Tiger Conservation Authority (NTCA) (1973)

India's Collaboration with Global Wildlife Conservation Efforts

- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Convention on the Conservation of Migratory Species of Wild Animals (CMS)
- Convention on Biological Diversity (CBD)
- World Heritage Convention
- Ramsar Convention
- The Wildlife Trade Monitoring Network (TRAFFIC)
- United Nations Forum on Forests (UNFF)
- International Whaling Commission (IWC)
- International Union for Conservation of Nature (IUCN)
- Global Tiger Forum (GTF)

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Note:

Agricultural Expansion Threatens Biodiversity

Why in News?

Recently, a study found that **agricultural expansion** is putting **frog populations at risk** in the **Western Ghats.**

- It is part of the **broader issue** of agricultural expansion **threatening biodiversity and causing habitat loss.**

What are the Key Findings of the Study?

- **Impact of Agricultural Expansion:** Paddy fields and orchard expansion threaten frog population with paddy fields showing the **lowest frog diversity** and mango and cashew orchards housing the **fewest frogs overall.**
- **Decline of Rare Frog Species:** Rare species, such as the **CEPF Burrowing Frog (Minervarya cepfi)** and the **Goan Fejervarya (Minervarya gomantaki)**, were **scarce** in altered agricultural habitats.
- **Global and Local Amphibian Decline:** About **40.7% (8,011 species)** of amphibians worldwide are classified as **threatened** due to habitat destruction, pollution, climate change and diseases like **chytridiomycosis.**
  - The **Western Ghats**, a **biodiversity hotspot** with 252 amphibian species (226 frogs), is facing **habitat loss** and declining frog populations.
- **Reasons for Decline:**
  - **Loss of Microhabitats:** Important microhabitats like **rock pools**, which protect **frog eggs and tadpoles** during dry spells, are being threatened by **agricultural practices.**
  - **Wetland Destruction:** Agricultural and urban expansion is **destroying wetlands** crucial for frog reproduction.
  - **Agricultural Runoff:** Agricultural runoff with **pesticides and fertilizers** harms water quality, endangering sensitive frog populations.
  - **Climate Change:** Frogs' sensitivity to even minor environmental changes makes them **vulnerable to climate change** and human disturbances.

Note: Frogs hold **cultural importance** in Indian communities, symbolizing **rain and fertility**. E.g.,

- In **Assam**, ***Bhekuli Biya*** (frog marriage) is practised as a means of **invoking rain.**
- In **southern India**, frog marriage is known as ***Mandooka Parinaya*** for **invocation for rain.**
- In **Uttar Pradesh**, frog marriage is practised in places like **Sonebhadra, Gorakhpur, and Varanasi.**
- **Nadukani-Moolamattom-Kulamavu tribes** of **Kerala** harvest the **pig-nose purple frog** for food during the monsoon season.



How Agricultural Expansion Threatens Biodiversity?

- **Deforestation**: Conversion of forests into farmland is the **leading cause of habitat decline.**

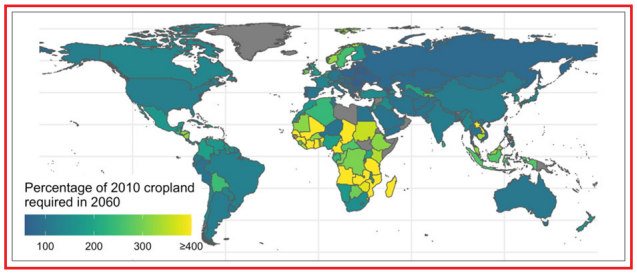
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Note:

- The area of primary forest worldwide has **decreased by over 80 million hectares since 1990** resulting in habitat destruction, **fragmentation**, and eventual extinction.

➢ **Habitat Destruction:** Between **1962 and 2017**, approximately **340 million hectares** of new cropland and **470 million hectares** of natural ecosystems were converted into pastures globally leading to the destruction of critical ecosystems.



➢ **Monoculture:** Large-scale agricultural practices like **cattle ranching, soy, and palm oil cultivation** replaces previously diverse ecosystems with **monocultures** and domesticated animals like **cows, goats, sheep, and pigs.**

➢ **Overuse of Chemicals:** Industrial agricultural practices, especially the overuse of **pesticides, fertilizers, and chemicals** pollute **groundwater** and **water systems**, affecting both aquatic and terrestrial species.

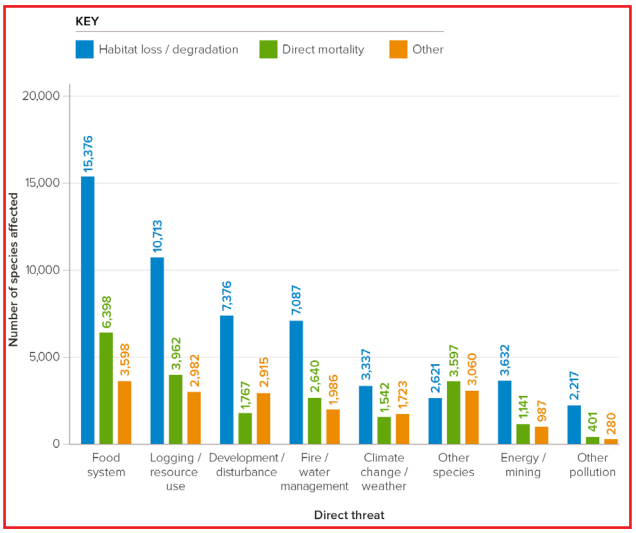
➢ **Reduced Carbon Storage**: Cropland stores significantly **less carbon** compared to the original forests or vegetation.

- Land-use changes could release **17 gigatons of CO_2 in the long-term**, worsening the climate crisis and threatening biodiversity by disrupting ecosystems.

➢ **Extinction Risks:** Around **13,382 species** of the **25,000 identified as threatened by the IUCN** are **endangered** primarily due to agricultural land clearing and degradation.

- In addition, some **3,019 species** are affected by **hunting and fishing**, and **3,020 by pollution** from the food system.

➢ **Isolation of species:** Agricultural expansion **fragments habitats**, isolating ecosystems and increasing species' extinction risk due to **inbreeding, resource scarcity, and limited mobility.**



How Agricultural Expansion and Biodiversity Protection Can Be Balanced?

➢ **Closing yield Gaps**: In many **low-income countries**, yields have **stagnated** despite growing food demand, leading to **increased land clearing**.

- Closing the yield gap in **tropical countries with high biodiversity** is crucial to meet food demands without encroaching further on natural ecosystems.
- **Yield gap** is the difference between **current and potential yields**.

➢ **Sustainable Intensification:** Precision agriculture reduces pollution, emissions, and land use by optimizing fertilizer use, helping farmers **maintain high yields with fewer environmental costs.**

➢ **Diversified Farming Systems**: Practices like intercropping (growing multiple crops together) or using **cover crops** can **increase productivity** without additional chemical inputs, enhancing soil fertility and pest control.

➢ **Land-Use Planning:** Strong land-use planning and **zoning policies** that protect areas of **high ecological value** can direct agricultural growth while protecting sensitive ecosystems.

➢ **Healthier Diets:** Diets that are more **plant-based** and less reliant on resource-intensive **meat production** require less cropland and have a lower environmental impact. E.g., **seafood** is a healthier alternative to red meats.

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Note:

- **Reducing Food Waste**: Reducing food loss and waste by half could **reduce global food demand by 15%,** and thus the need for **230 million hectares** of additional cropland.

Strengthening Wetland Protection

Why in News?

Recently, the **Supreme Court of India** in a PIL filed by activists, ordered the protection of approximately 30,000 additional **wetlands**, building upon the earlier protection of 201,503 wetlands as per a 2017 ruling in ***M. K. Balakrishnan Vs Union of India Case***.

- The court mandated that **states and Union Territories** complete the demarcation and ground truthing of these wetlands **within three months**.

What are Wetlands?

- **Wetlands** are defined as **areas of marsh, fen, peatland, or water (natural or artificial)** with water that is static or flowing, including marine areas with a **depth not exceeding six meters**.
  - **Wetlands are ecotone**, having land transitional between terrestrial and aquatic ecosystems.
- **Types of Wetlands:**
  - **Coastal Wetlands**: Found **between land and open sea,** not influenced by rivers.
    - Examples include **shorelines, beaches, mangroves**, and **coral reefs**, such as **mangrove swamps** in sheltered tropical coastal areas.
  - **Shallow Lakes and Ponds**: Areas of permanent or semi-permanent water with **little flow,** including vernal ponds, spring pools, salt lakes, and volcanic crater lakes.
  - **Marshes**: Periodically saturated, flooded, or ponded with water, characterised by **herbaceous (non-woody)** vegetation adapted to wet soil conditions.
    - They can be tidal or non-tidal.
  - **Swamps**: Dominated by **trees and shrubs**, swamps are primarily fed by surface water inputs and occur in freshwater or saltwater floodplains.
  - **Bogs**: Waterlogged peatlands **found in old lake basins** or landscape depressions, with most water coming from rainfall.
  - **Estuaries**: Areas where **rivers meet the sea**, transitioning from fresh to saltwater, rich in biodiversity.
    - Examples include deltas, tidal mudflats, and salt marshes.
- **Significance of Wetlands:**
  - **Natural Water Filters**: Wetlands act as **natural water filters by trapping sediments, breaking down pollutants,** and absorbing excess nutrients.
    - This process improves water quality, ensuring it is cleaner and safer for human consumption and supporting overall ecosystem health.
  - **Flood Prevention**: They absorb and store excess water, reducing flood risks and protecting homes and infrastructure.
    - The **National Disaster Management Authority (NDMA)** emphasizes that wetlands can significantly reduce flood risks in surrounding areas by up to 60%.
  - **Habitat for Wildlife**: Wetlands provide crucial habitats for many species of birds, fish, and other wildlife, including threatened species like the **Sarus Crane**.
    - According to the **National Wetland Inventory & Assessment by the Space Applications Centre (SAC)**, wetlands support **over 40% of the world's species**, despite covering **only about 6% of the Earth's surface**.
  - **Carbon Sequestration**: Wetlands store large amounts of carbon in their soil and vegetation, helping to mitigate climate change.
    - The **Indian Network for Climate Change Assessment (INCCA)** emphasizes that restoring wetlands can significantly contribute to India's climate goals by enhancing **carbon sequestration**, improving water quality, and reducing flood risks.
  - **Livelihoods:** Many communities depend on wetlands for their livelihoods through fishing, agriculture, and tourism.

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Note:

- Around one billion households in **Asia, Africa, and the Americas** rely on rice cultivation for their livelihoods. Wetland paddy rice is a staple for 3.5 billion people, providing 20% of global calorie intake.

What is the Status of Wetlands in India?

- As per satellite based observation by **Space Applications Centre (SAC)**, there are approximately 231,195 wetlands in India. However, **only 92 wetlands have been officially notified for protection under the Wetlands (Conservation and Management) Rules 2017.**
- Initiatives Taken for Conservation of Wetlands:
  - **Ramsar Convention:** India joined the Ramsar Convention on **1st February 1982**, and has since **designated 85 wetlands**, covering **1,367,749 hectares**, as Wetlands of International Importance.
    - Recent ones are Nanjarayan Bird Sanctuary, Kazhuveli Bird Sanctuary (Tamil Nadu), and **Madhya Pradesh's Tawa Reservoir.**
    - **Montreux Record:** Montreux Record is a register of wetland sites under Ramsar Convention on the List of Wetlands of International Importance.
  - Wetlands (Conservation and Management) Rules, 2017.
  - Action Plan of MoEFCC
  - National Plan for Conservation of Aquatic Ecosystems (NPCA)
  - Amrit Dharohar Capacity Building Scheme



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Note:

What are the Challenges in Wetland Conservation?

- **Inadequate Legal Framework:**
  - **Regulatory Challenges:** While there are laws in place, such as the **Wetlands (Conservation and Management) Rules, 2017,** enforcement is often weak. Many wetlands remain unprotected or improperly managed.
    - The **2022-23 water body census** shows India has 24,24,540 water bodies, with **55% privately owned**, **complicating conservation efforts**.
  - **Decentralization Issues:** The delegation of powers to state governments for wetland management has led to **inconsistencies in implementation and protection** across different regions.
- **Urbanisation and Land Use Changes:**
  - **Encroachment:** Rapid urbanization has encroached on wetlands, diminishing their size and ecological function. Cities like **Chennai and Mumbai** have seen significant declines.
    - Over the **past 30 years, India has lost 30% of its wetlands** due to urbanization, pollution, and agriculture.
- **Pollution and Water Quality Degradation:**
  - **Industrial Discharge:** Many wetlands like **East Kolkata Wetlands are subjected to pollution from industrial effluents**, agricultural runoff, and untreated sewage, which severely impacts their health and biodiversity.
  - **Invasive Species:** The introduction of invasive plant species can alter the natural ecosystem balance, further threatening native flora and fauna.
    - For example, **water hyacinth *(Eichhornia crassipes)*** is an invasive plant species that has spread across many water bodies in India
- **Climate Change Impacts:**
  - **Altered Hydrology:** Climate change affects rainfall patterns, leading to changes in water levels that can disrupt wetland ecosystems as seen in **Sundarbans**.
    - Wetlands are increasingly vulnerable to extreme weather events such as floods and droughts, which can degrade their ecological integrity.
- **Lack of Awareness:**
  - **Educational Gaps:** Many communities do not understand the benefits that wetlands provide, such as flood control, water purification, and habitat for biodiversity.
    - There is a general lack of awareness among the public and policymakers about the ecological importance of wetlands, leading to inadequate conservation efforts.

COP16 of UNCCD

Why in News?

Recently, the **16th Conference of the Parties (COP16)** to the **United Nations Convention to Combat Desertification (UNCCD)** concluded in **Riyadh, Saudi Arabia**, with nearly 200 countries committing to prioritise land restoration and drought resilience.

- It was also the **first time** a UNCCD COP was held in the **Middle East and North Africa (MENA) region.**

What Were the Key Outcomes of COP16 UNCCD?

- **Global Drought Framework:** Nations advanced efforts toward a global drought framework, aiming for **completion at COP17 in Mongolia 2026**.
- **Financial Pledges:** Over **USD 12 billion** pledged to address desertification, land degradation, and drought.
  - **Riyadh Global Drought Resilience Partnership**: **USD 12.15 billion** committed to supporting **80 vulnerable countries**, including USD 10 billion from the Arab Coordination Group.
  - **Great Green Wall (GGW) Initiative:** The African-led **GGW initiative** secured **Euros 11 million from Italy** for Sahel landscape restoration and **Euros 3.6 million from Austria** to enhance coordination across 22 African countries.
  - **Vision for Adapted Crops and Soils (VACS):** Nearly **USD 70 million** announced for VACS initiative.
    - VACS aims to build **resilient food systems** with diverse, nutritious, and climate-adapted crops in healthy soils.

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Note:

- **Indigenous Peoples and Local Communities**: Caucuses for Indigenous Peoples and Local Communities were formed to ensure their perspectives and challenges are represented.
  - The Sacred Lands **Declaration**, presented at the **Indigenous Peoples Forum**, greater involvement in global land and drought governance.
- **Business4Land initiative**: It highlights the role of **private sector advocacy**, environmental, social, and governance (ESG) **strategies**, and sustainable finance in tackling Desertification, Land Degradation and Drought (DLDD) challenges.
  - The private sector currently contributes **only 6%** of financing towards land restoration and drought resilience.
- **UNCCD's Science-Policy Interface (SPI):** Parties agreed to continue the **UNCCD's SPI**, established at **COP11 (Windhoek, Namibia) in 2013** to translate scientific findings into recommendations for decision-makers.

United Nations Convention to Combat Desertification

- **About:** The UNCCD is one of the three Rio Conventions, along with the UN Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity.
- **Purpose and Importance**: The UNCCD was established in **1994 t**o protect and restore land, aiming for a sustainable future.
  - It addresses the consequences of **land degradation and drought,** including crop failure, migration, and conflict.
- **Objective:** Its main goal is to **mitigate** land degradation **and protect land** to ensure access to food, water, shelter, and economic opportunities for all people.
- **Legally Binding Framework**: It is the **only legally binding international agreement** to combat desertification and drought.
- **Membership**: The Convention has **197 Parties,** including 196 countries and the European Union.
- **Principles**: It operates on the principles of **participation**, **partnership**, and **decentralization**.

International Drought Resilience Observatory

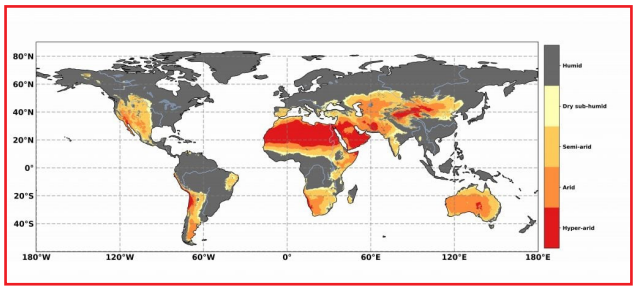
- The **International Drought Resilience Observatory (IDRO)** is the **first global AI-driven platform** to help countries assess, and enhance, their capacity to cope with harsher droughts.
- This innovative tool is an initiative of the **International Drought Resilience Alliance (IDRA).**
  - IDRA is a global coalition that helps mobilize **political, technical and financial capital** to enhance drought resilience in **countries, cities, and communities.**
  - It was launched by the **27th Conference of Parties (COP27)** to the **UNFCCC** at Sharm El-Sheikh by **Spain and Senegal.**

What is Desertification and its Current Status?

- **Desertification:** Desertification is a type of **land degradation** in which an already **relatively dry land area becomes increasingly arid**, degrading productive soil and losing its bodies of water, biodiversity and vegetation cover.
  - It is driven by a combination of factors, including climate change, deforestation**, overgrazing and unsustainable agricultural practices.**
- **Current Status**:
  - **Expansion of Drylands**: According to the UNCCD report ***The Global Threat of Drying Lands*, 77.6% of Earth's land** has experienced drier conditions since the 1990s.
    - Drylands now make up **40.6% of Earth's terrestrial surface** (excluding Antarctica), showcasing a rapid loss of productive land.
  - **Key Regions Affected**: **Europe** (95.9% of its land), parts of **Brazil**, the **Western United States**, **Asia**, and **Central Africa** are witnessing significant drying trends.
    - **Africa** and parts of **Asia** are seeing ecosystem degradation and desertification, threatening biodiversity.
  - **Projected Future Impact**: Projections indicate that, in a worst-case scenario, up to **5 billion people** could live in drylands by the century's end, facing challenges like **depleted soils**, **water scarcity**, and **ecosystem collapse**.

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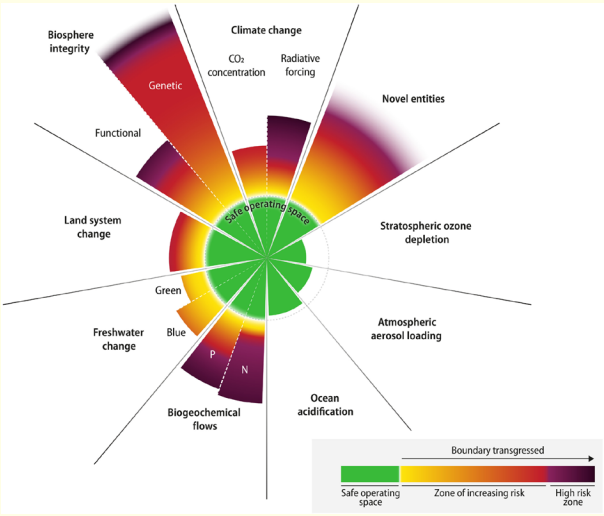
Note:



What are the Implications of Land Degradation and Desertification?

- **Planetary Boundaries at Risk**: **Seven of nine planetary boundaries** have been negatively impacted due to unsustainable land use, as highlighted in the **UNCCD Stepping back from the precipice report.**
  - **Agriculture** is responsible for **23% of global greenhouse gas emissions, 80% of deforestation,** and 70% of worldwide freshwater usage.
- **Economic Cost:** Droughts impact **1.8 billion people globally** and the economic toll of droughts is estimated at **USD 300 billion annually**, severely affecting agriculture, energy, and water availability.
- **Social Cost: Water scarcity** and **agricultural collapse** are driving **forced migration** across regions, including the **Middle East**, **Africa**, and **South Asia**, creating social and political challenges.
- **Food Security**: Land degradation threatens **one-sixth of the global food supply,** potentially **depleting one-third of the Earth's carbon reserves.**
- **Link to Natural Disasters**: Aridity is driving larger, more **frequent wildfires**, particularly in semi-arid regions, by increasing dry biomass.
  - **Sand and dust storms** are becoming more common, particularly in the **Middle East**.

Note: The nine planetary boundaries are:



Current Status of Desertification in India

- According to **UNCCD data**, from **2015-2019, 30.51 million hectares** of India's total reported land was degraded.
  - This means that **9.45%** of the country's landmass was **degraded** as of 2019. This was **4.42% in 2015.**
- India's total degraded land is equivalent to the size **of 43 million football pitches.**
- **251.71 million Indians** constituting 18.39% of the country's population were exposed to **land degradation** during the same period.
- **854.4 million** of the country's people were exposed to **drought from 2015-2018.**

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Note:

History

Highlights

- *100 years of the Belgaum Congress Session*
- *53rd Anniversary of Vijay Diwas*

100 years of the Belgaum Congress Session

Why in News?

The centenary of the **1924 Belgaum Congress session** is being celebrated in **Belagavi, Karnataka,** on 26-27th December 2024.

- This event commemorates **Mahatma Gandhi's chairmanship** of the historic **39th All-India Congress** session in Belgaum, where he made significant contributions to the Congress Party's ideology and organizational structure.

What is Significance of the 1924 Belgaum Session of Congress?

- **Gandhi's Leadership:** It was the **only Congress session** which was **presided over by Gandhiji** as the party chief**.** Gandhi had held the post of the **Congress president** between **December 1924 and April 1925**.
  - Gandhi's first visit to Belgaum in 1916 was at the invitation of local leader Deshpande.
- **Focus on Social Change:** Gandhi emphasized **combating untouchability, promoting khadi,** and supporting **village industries**, transforming Congress into a movement for both political independence and social reform.
  - **Khadi spinning was mandatory for Congress** members and mandated the submission of 2,000 yards of khadi cloth monthly.
  - Gandhi **reduced Congress membership fees by 90%**.
- **Hindu-Muslim Unity:** Gandhi used the platform to advocate for Hindu-Muslim unity, which was essential to the broader freedom movement.
- **Social and Economic Upliftment:** Gandhi also focused on issues like **sanitation, town planning,** and the **use of cows for economic upliftment of farmers**, with a specific stance on **cow protection**.
  - He stressed that his **advocacy for cow protection** was not linked to religious conversion or violence against Muslims.
  - He **praised the sanitation volunteers**, noting that 40 out of 70 were Brahmins, emphasising **social service across castes**.
  - He criticized the **session's excessive expenditure on VIPs** and called for **equal treatment of all members** in future sessions.
- **Cultural Significance:** The session was marked by notable musical performances, including by Hindustani maestro **Vishnu Digambar Paluskar** and young **Gangubai Hangal,** along with the Kannada song **"Udayavagali Namma Chaluva Kannada Nadu."**
- **Legacy of the Session:** The **Pampa Sarovara well,** dug for the session, continues to **supply water** to parts of south Belagavi.

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Note:

Mohandas Karamchand Gandhi

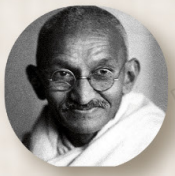
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"The weak can never forgive. Forgiveness is the attribute of the strong."

Brief Description

Birth: 2nd October 1869, Porbandar (Gujarat).
2nd October is observed as **International Day of Non-Violence.**
Profile: Lawyer, Politician, Social activist, Writer and led Nationalist Movement.
Father of the Nation (first called by Netaji Subhash Chandra Bose).
Ideology: Believed in the ideas of non-violence, Truth, Honesty, Care for Mother Nature, Compassion, Welfare of Downtrodden etc.
Political Mentor: Gopal Krishna Gokhale
Death: Shot dead by Nathuram Godse (30th January, 1948).
30th January is observed as **Martyrs' Day**
Nominated for the Nobel Peace Prize five times.



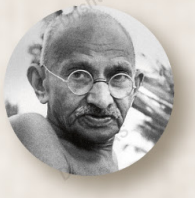


Gandhi in South Africa (1893-1915)

Used satyagraha against racist regime (Native Africans and Indians were discriminated).
Pravasi Bharatiya Divas (PBD) is celebrated every year on 9th January, to commemorate his return from South Africa.

Contribution in India's Freedom Struggle

Small-scale movements like Champaran Satyagraha (1917)—First Civil Disobedience, Ahmedabad Mill Strike (1918)— First Hunger Strike, and Kheda Satyagraha (1918)—First Non-Cooperation.
Nationwide Mass Movements: Against Rowlatt Act (1919), Non-Cooperation Movement (1920-22), Civil Disobedience Movement (1930-34), Quit India Movement (1942).
Gandhi-Irwin Pact (1931): Between Gandhi and Lord Irwin that marked the end of a period of civil disobedience.
Poona Pact (1932): Between Gandhi and **B.R. Ambedkar;** this abandoned the idea of separate electorates for the depressed classes (Communal Award).



Books Written

Hind Swaraj, My Experiments with Truth (Autobiography)

Weeklies

Harijan, Navjivan, Young India, Indian Opinion.

Gandhi Peace Prize

is given by India for social, economic, and political transformation through Gandhian methods.

"Happiness is when what you think, what you say, and what you do are in harmony."

"You must not lose faith in humanity. Humanity is an ocean; if a few drops of the ocean are dirty, the ocean does not become dirty"

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Note:

Key Sessions of the Indian National Congress

- **1885**: *First Session* in Bombay, presided by W.C. Banerjee – Formation of the Indian National Congress.
- **1886**: *Second Session* in Calcutta, presided by Dadabhai Naoroji.
- **1887**: *Third Session* in Madras, presided by Syed Badruddin Tyabji – First Muslim President.
- **1888**: *Fourth Session* in Allahabad, presided by George Yule – First English President.
- **1896**: *Calcutta* – National Song 'Vande Mataram' sung by Rabindranath Tagore.
- **1901**: *Calcutta* – First appearance of Gandhiji on the Congress platform.
- **1905**: *Benaras* – Formal proclamation of the Swadeshi Movement. Held under the presidency of **Gopal Krishna Gokhale.**
- **1906**: *Calcutta* – President Dadabhai Naoroji – Resolutions on Swaraj, Boycott, Swadeshi & National Education.
- **1907**: *Surat* – President Rash Bihari Ghosh – Split between Moderates and Extremists.
- **1916**: *Lucknow* – President A.C. Majumdar – Unity between Moderates and Extremists; Lucknow Pact with Muslim League.
- **1917**: *Calcutta* – President Annie Besant – First Woman President of Congress.
- **1919**: *Amritsar* – President Motilal Nehru – Support for Khilafat Movement.
- **1920**: *Calcutta* – President Lala Lajpat Rai – Gandhi moves Non-cooperation resolution.
- **1924**: *Belgaum* – President Mahatma Gandhi – **Only session presided over by Gandhi.**
- **1927**: *Madras* – President Dr. M.A. Ansari – Resolutions against Simon Commission and for Purna Swaraj.
- **1929**: *Lahore* – President Jawaharlal Nehru – Resolution on Poorna Swaraj; Civil Disobedience movement launched.
- **1931**: *Karachi* – President Vallabhbhai Patel – Resolutions on Fundamental Rights and National Economic Programme.
- **1936**: *Lucknow* – President Jawaharlal Nehru – Shift towards socialist ideas.
- **1938**: *Haripura* – President Subhas Chandra Bose – National Planning Committee formed.
- **1939**: *Tripuri* – President Rajendra Prasad – Bose re-elected but resigns; Forward Bloc formed.
- **1940**: *Ramgarh* – President Abul Kalam Azad – Civil Disobedience movement postponed.
- **1946**: *Meerut* – President J.B. Kripalani – Last session before Independence.

53rd Anniversary of Vijay Diwas

Why in News?

Recently, India commemorated Vijay Diwas on **16th December** marking the **53rd anniversary** of its victory in the Bangladesh Liberation War, 1971 and the **creation of Bangladesh.**

- National leaders, including the President and Prime Minister (PM), paid tributes to the fallen soldiers at the National War Memorial **in Delhi.**

53rd Vijay Diwas Celebrations

- The 53rd Vijay Diwas celebrations at Fort William, Kolkata, saw a Bangladeshi delegation, including Mukti Joddhas (who were part of the guerrilla resistance force in East Pakistan), recount their memories of the **1971 Liberation War.**
- They highlighted India's significant support in training, supplies, and moral backing during the war. Indian veterans also reflected on the atrocities committed by Pakistani forces.
  - The event included wreath-laying, a salute, and a military tattoo, emphasizing the enduring friendship between India and Bangladesh.

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Note:

Note:

- Recently, the **iconic 1971 surrender painting**, depicting Pakistan's surrender in Dhaka, was moved from the **Army chief's lounge** to the **Manekshaw Centre** coinciding with Vijay Diwas.



- The painting was replaced by ***Karam Kshetra–Field of Deeds***, painted by Lt. Col. Thomas Jacob.
  - It features **snow-capped mountains, Pangong Tso, Garuda, Lord Krishna's chariot, Chanakya**, and **modern military assets** like tanks, helicopters, and patrol boats, symbolizing India's strategic and cultural heritage.



What was the 1971 Bangladesh Liberation War?

- **About:**
  - The **Bangladesh Liberation War, 1971** was an armed conflict between erstwhile East Pakistan (now Bangladesh) and West Pakistan (now Pakistan) resulting in the independence of Bangladesh from Pakistan.
- **Origin:**
  - The roots of the 1971 Bangladesh Liberation War trace back to the **1947 Partition of India**, which divided the subcontinent along **religious lines**.
    - Pakistan was created as a Muslim-majority state in response to meet the demand of Jinnah.
    - Despite uniting under religion, stark **geographical, cultural, and linguistic differences** between East and West Pakistan sowed discord.
- **Causes of 1971 War:**
  - **Social Exploitation**: Post-independence, West Pakistan perceived East Pakistan as **culturally inferior** due to its historical ties with the Hindu-dominated elite before Partition. This perception fueled systematic discrimination against the Bengali population.
  - **Linguistic Marginalisation**: The **imposition of Urdu as Pakistan's national language disregarded Bengali,** the predominant language of East Pakistan, leading to widespread unrest and protests.
  - **Political Discrimination**: West Pakistan **dominated the central government**, with **power concentrated among the Punjabi elite**. East Pakistan, despite its larger population, had minimal representation in decision-making.
    - The **1970 elections**, won decisively by the **Sheikh Mujibur Rahman of Awami League**, symbolized **East Pakistan's demand for autonomy** but were met with resistance from West Pakistani leaders, triggering unrest.
  - **Economic Exploitation**: **East Pakistan faced severe economic neglect** and exploitation.
    - **East Pakistan, despite generating 62% of Pakistan's revenue,** received **only 25% of the national budget** for its development.
  - **Employment Disparities**: West Pakistanis occupied the majority of administrative and higher-ranking positions, while **Bengalis were underrepresented in both civil and military services,** further deepening inequalities.
- **Key Events of the War:**
  - **Operation Searchlight (25th March 1971):**
    - The Pakistani military launched a **brutal crackdown on Dhaka** and other regions of East Pakistan to **suppress Bengali nationalist movements**.

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Note:

- The operation **targeted students, intellectuals, and political leaders,** leading to widespread killings and destruction.

❍ **Independence and Provisional Government:**
- **Sheikh Mujibur Rahman**'s proclamation of Bangladesh's independence marked the formal beginning of the **Liberation War.**
- The **Mukti Bahini (Freedom Fighters)** was formed to organize **guerrilla warfare** against Pakistani forces.
- Later, the **Provisional Government of Bangladesh** was established in Mujibnagar and **Sheikh Mujibur Rahman was declared President**.

❍ **Military Campaigns by Mukti Bahini (April–December 1971):**
- The Mukti Bahini conducted guerrilla operations across East Pakistan, targeting Pakistani forces and disrupting supply chains.

❍ **Refugee Crisis in India (Mid-1971):**
- Over 10 million refugees fled to India due to the Pakistani military's atrocities.
- India, under Prime Minister Indira Gandhi, provided humanitarian aid and later extended military and diplomatic support to the Mukti Bahini.

Shimla Agreement, 1972

➢ It was signed on **2nd July 1972** after the **1971 Indo-Pak War**, which led to the creation of Bangladesh.

➢ It was negotiated by **PM Indira Gandhi** and **Pakistan's President Zulfikar Ali Bhutto** to normalise relations and establish peace.

➢ **Objectives:**
❍ Resolve the Kashmir issue bilaterally, preventing internationalisation.
❍ Improve Indo-Pak ties based on the new regional power balance.
❍ India refrained from making the ceasefire line a permanent boundary to prevent further resentment in Pakistan.

➢ **Key Provisions:**
❍ **Conflict Resolution:** Issues to be resolved bilaterally and peacefully.
❍ **Line of Control (LoC):** Both sides agreed to respect the LoC in Kashmir, established after the 1971 war, and not alter its status unilaterally.
❍ **Troop Withdrawal:** Forces to withdraw to their respective sides of the international border.
❍ **Future Diplomacy:** Provisions for continued dialogue and repatriation of prisoners of war.

What was India's Response to the 1971 Bangladesh Liberation War?

➢ **Initial Caution and Humanitarian Crisis**:
❍ India initially adopted a **cautious stance**, but the **military crackdown** by Pakistan in East Pakistan led to a **mass exodus of refugees**- approximately 8-10 million, predominantly Hindus, fleeing to India.
❍ India set up **refugee camps** in eastern states, primarily in **West Bengal, Bihar, Assam, Tripura**, and **Meghalaya**.

➢ **Diplomatic Efforts**:
❍ India sought **global support** to expose Pakistan's atrocities and garner international pressure.

➢ **Military Intervention and Outcome**:
❍ The war began on **3rd December 1971** when **Pakistan launched air strikes on Indian military bases** on western fronts, prompting **India to retaliate with air strikes** and launch coordinated operations on both the Eastern and Western fronts.
❍ India provided critical support to the **Mukti Bahini**, a **20,000-strong guerrilla force** of Bangladeshi fighters, by training them and leveraging their knowledge of East Pakistan's geography.
❍ The conflict lasted 13 days, with India's military forces, including the Navy and Air Force, making significant advances.
❍ On **16th December 1971**, Pakistan's Lt. Gen. A.A.K. Niazi signed the **Instrument of Surrender in Dhaka**, resulting in the **surrender of over 90,000 Pakistani soldiers**, marking one of the largest military capitulations since World War II and leading to the **creation of Bangladesh.**

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Note:

- **Consequences of the War**:
  - The war led to the **repudiation of Jinnah's two-nation theory**, undermining Pakistan's claim over **Kashmir** and significantly weakening its position in South Asia.
    - **Jinnah's two-nation theory** asserted that Hindus and Muslims were **distinct nations** with irreconcilable religious, cultural, and social differences, necessitating **separate nations to safeguard** their respective interests.
  - **India strengthened its international image** by **offering humanitarian aid and thextending support toe victims** of Pakistan's repression, showcasing its commitment to **human rights and compassion.**

■■■

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Note:

Geography

Highlights

- *Ken-Betwa Link Project*
- *Hydrothermal Vents in Indian Ocean*
- *Ocean Anoxic Event 1a*
- *Golan Heights*
- *2024 Arctic Report Card*
- *Human Evolution and Migration*

Ken-Betwa Link Project

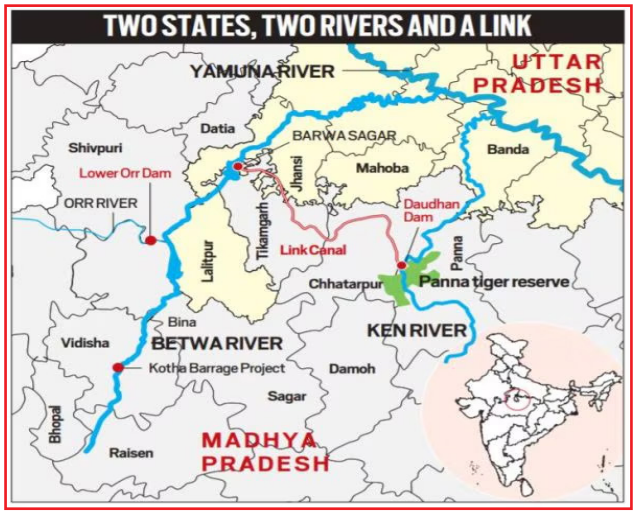
Why in News?

Recently, Prime Minister Narendra Modi laid the foundation stone for the **Ken-Betwa Link Project (KBLP)** in Khajuraho, Madhya Pradesh.

- This Rs 45,000 crore initiative, part of the **National Perspective Plan (NPP)** for interlinking rivers, aims to resolve water scarcity in **Bundelkhand**.

Note: Alongside the KBLP, PM laid the foundation stone for the **Daudhan Dam irrigation project,** which will serve **11 lakh hectares of land** in the region.

- The PM also inaugurated **Madhya Pradesh's first floating solar energy project at Omkareshwar,** marking a significant step toward **renewable energy adoption.**



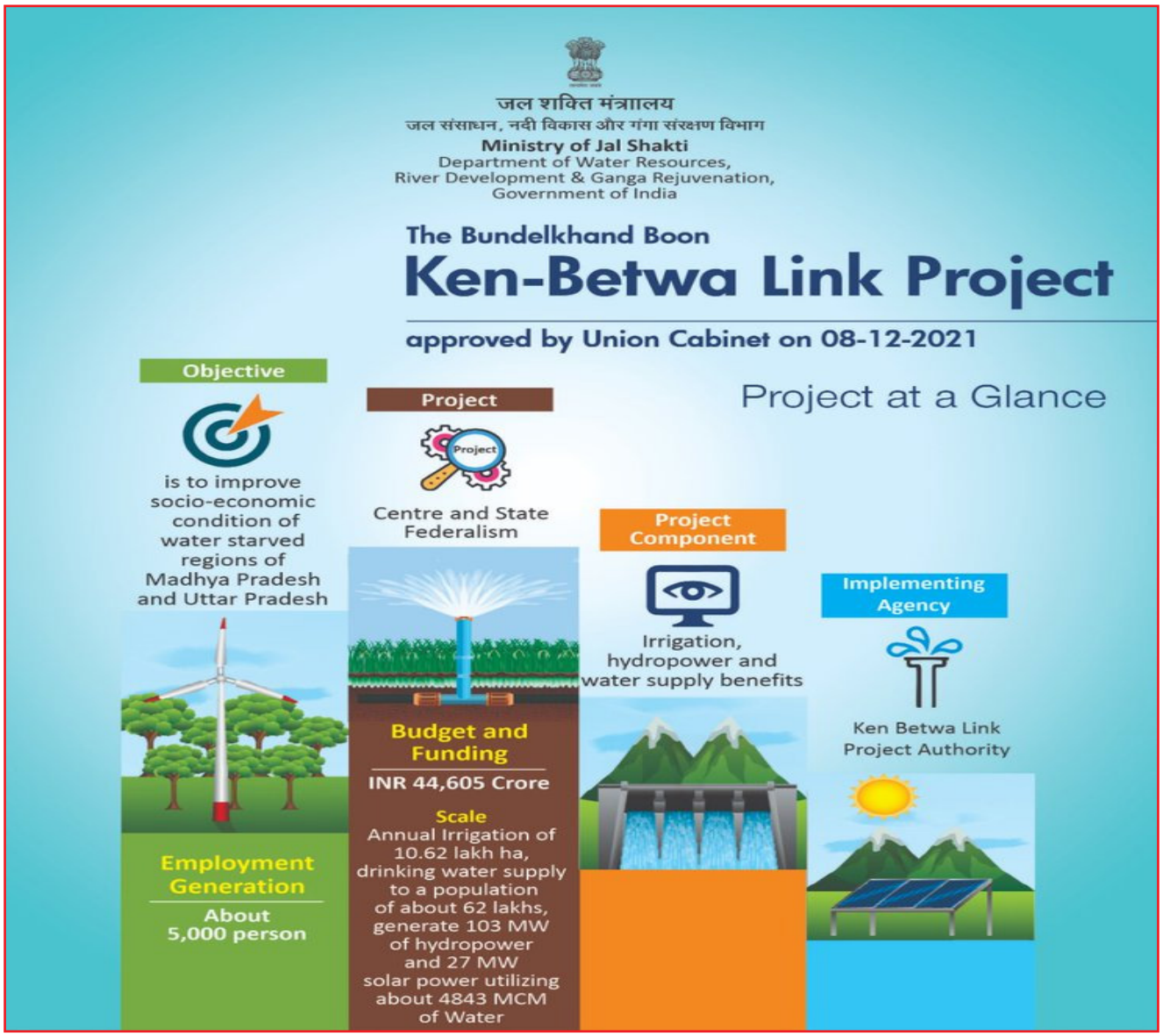
What are the Key Facts About Ken-Betwa Link Project?

- **About:** The KBLP is India's first initiative under the NPP, formulated in 1980 for river interlinking, implemented by **Ken-Betwa Link Project Authority**.
  - It aims to transfer surplus water from the **Ken River in Madhya Pradesh to the Betwa River in Uttar Pradesh,** both of which are tributaries of the **Yamuna.**
- **Phases of the Project:**
  - **Phase I:** Construction of the **Daudhan Dam complex**, low-level and high-level tunnels, Ken-Betwa link canal, and powerhouses.
  - **Phase II:** Development of the Lower Orr Dam located across the **Orr River** (a tributary of the Betwa), Bina Complex Project, and Kotha Barrage.
- **Benefits:**
  - Irrigation for **6.3 lakh hectares** annually.
  - Drinking water supply for 62 lakh people.
  - The project includes provisions for **hydropower generation** (100 Megawatt (MW)) and **solar energy** (27 MW).
- **Importance for Bundelkhand:** Bundelkhand is a geographical region, which spans 13 districts in Uttar Pradesh and Madhya Pradesh.
  - Bundelkhand has **long faced droughts and water shortages,** forcing migration for employment.
  - The KBLP enhances drinking water access, boosts agriculture with reliable irrigation, and fosters regional development, reducing migration pressures.

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Note:

- **Environmental Concerns Raised by Critics:**
  - The opposition has voiced concerns over the **project's environmental impact, particularly on the Panna Tiger Reserve,** which could see over 10% of its core area submerged.
  - Critics argue that the **project could cause significant loss of wildlife habitats,** including those of tigers, vultures, and other species.
    - Over 23 lakh trees are expected to be felled, and construction activities could severely disrupt the local ecosystem.
- **Government Response:** Assured that the project construction would consider the preservation of the **Panna Tiger Reserve's wildlife** and that measures would be implemented to mitigate the project's adverse effects on the local ecosystem, balancing development and conservation.



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Note:

Key Facts About Ken and Betwa Rivers

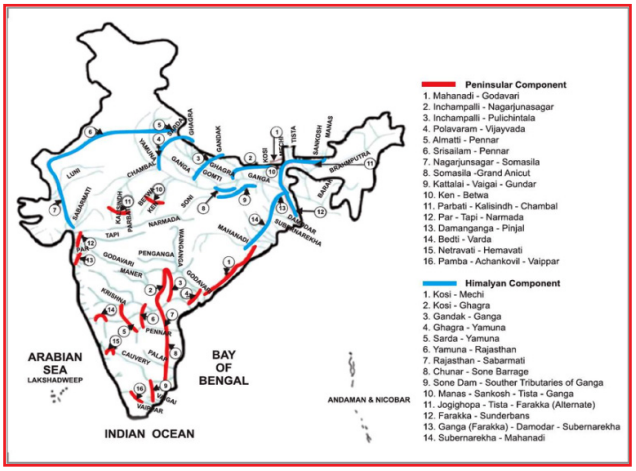
- **Ken River:** The Ken River originates near Ahirgawan village on the north-west slopes of the Kaimur hills in Jabalpur, Madhya Pradesh.
  - The river merges with the Yamuna at Chilla village near Fatehpur, Uttar Pradesh.
  - Ken River is known for the rare **Sajhar stone**. Its major tributaries include Bawas, Dewar, Kaith, Baink, Kopra, and Bearma.
- **Betwa River:** Betwa, originates in the **Vindhya Range** in Madhya Pradesh, flows through Bundelkhand, and meets the Yamuna at Hamirpur, Uttar Pradesh.
  - The major tributaries of Betwa are **Newan, Orr and Dhasan.** In ancient times, the Betwa was known as **Vetrawati.**

Origin of River-Linking Projects in India

- **Sir Arthur Cotton (19th Century):** The idea of linking rivers was first proposed by **Sir Arthur Cotton,** a British engineer, to connect the **Ganga** and **Cauvery** for navigation and irrigation.
  - The Periyar Project, constructed in 1895, is a major irrigation project that diverts water from the **Periyar River basin in Kerala** to the **Vaigai River basin in Tamil Nadu**
- **National Water Grid:** Dr. K.L. Rao, the then Union Irrigation Minister, proposed the construction of a **National Water Grid in the 1970s.**
  - It aims to transfer water from water-surplus regions to water-deficit areas.
- **Garland Canal:** Captain **Dinshaw J Dastoor** proposed a Garland Canal to redistribute the water from one area to another.
- **National Perspective Plan (1980):** Prepared in 1980, aimed at inter-basin water transfer.
  - In 1982, the **National Water Development Agency (NWDA)** was established to conduct water balance and feasibility studies for the linking of rivers.

What is the National Perspective Plan (NPP) for Interlinking Rivers?

- **About:** Formulated in 1980 by the Ministry of Irrigation (now Ministry of Jal Shakti), the NPP aims to develop water resources through the inter-basin transfer of water.
  - The **NWDA** has been entrusted with the work of Interlinking of Rivers under the NPP.
- **Components:** The plan has two main components: the Himalayan Rivers and Peninsular Rivers Development.
  - **30 link projects:** 16 under the Peninsular Component, 14 under the Himalayan Component.
  - **Peninsular Rivers Development Component:** Focuses on linking rivers in southern and central India. Key projects include the **Mahanadi-Godavari,** Godavari-Krishna, and Ken-Betwa links.
  - **Himalayan Rivers Development Component:** Aims to divert surplus water from eastern tributaries of the Ganga and Brahmaputra to the western regions. Notable projects include the **Kosi-Ghaghra and Gandak-Ganga links.**
- **Significance:** Addresses water shortages in states like **Rajasthan, Gujarat, Andhra Pradesh, Karnataka, and Tamil Nadu.**
  - Improves irrigation, boosts agricultural productivity, and enhances food security.
  - Promotes **inland waterways** for freight movement, and utilizes surface water to alleviate groundwater depletion and reduce freshwater flowing into the sea.



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Note:

Hydrothermal Vents in Indian Ocean

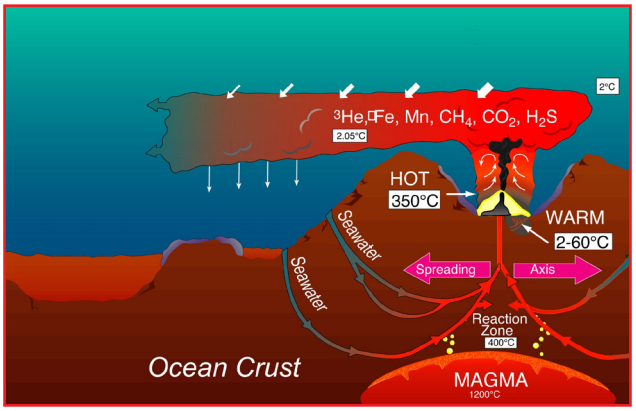
Why in News?

India's Deep Ocean Mission recently achieved a milestone by **imaging an active hydrothermal vent** 4,500 meters below the Indian Ocean's **surface.**

- This breakthrough enhances India's mineral exploration and deep-sea research, offering significant potential for the Samudrayaan mission and future exploration efforts.

What are Hydrothermal Vents?

- **Definition:** Hydrothermal vents are **underwater hot springs** found near the tectonic plates, where **hot water and minerals** from beneath the Earth's crust are expelled into the ocean.
  - Hydrothermal vents were first discovered in 1977 near the **Galapagos Islands, Ecuador.**
- **Formation Process:** Seawater percolates down through **fissures** (cracks that form when tectonic plates spread apart) in the ocean crust near tectonic plates that are either moving apart **(spreading ridges) or moving towards one another (subduction zones).**
  - The **cold seabed water (about 2°C)** comes into contact with **hot** magma, getting heated up to high temperatures **(370°C).**
  - The heated seawater reemerges from the ocean floor as **hydrothermal fluids,** forming the vents.
    - The seawater at hydrothermal vents can reach over 700°F but does not boil due to the **high pressure at the depths.**
- **Types of Hydrothermal Vents:**
  - **Black Smokers:** These vents emit **particle-laden fluids,** primarily **iron sulfides**, which form **black chimney-like structures.**
  - **White Smokers:** These vents emit fluids containing **barium, calcium, and silicon, forming white chimneys.**
- **Significance:** The deposits from hydrothermal venting are rich in **copper, zinc, gold, silver, platinum, iron, cobalt, nickel,** and other valuable minerals and metals.
  - Hydrothermal Vents create ecosystems where **chemosynthetic organisms** (organisms that rely on chemicals rather than sunlight for energy) thrive.
  - Hydrothermal vents, active for up to **30,000 years,** support long-term exploration and resource use.



Other Geothermal Features Similar to Hydrothermal Vents

- **Hot Springs:** Like hydrothermal vents, hot springs **on land** are areas where heated groundwater (heated by geothermal heat from Earth's interior) emerges at the surface.
  - In volcanic areas, water comes into contact with **hot rock heated by magma,** producing **superheated water.**
  - In non-volcanic areas, the **temperature of rocks increases with depth (Geothermal Gradient).** Water percolates deep enough to come into contact with hot rocks, circulating to the **surface and forming hot springs.**
  - **Example:** Manikaran (Himachal Pradesh), Gaurikund (Uttarakhand)
- **Geysers:** These are geothermal features that periodically **eject water and steam due to underground heating.**
  - Geysers require large amounts of groundwater to fill underground cavities in volcanic areas. When heated by **nearby magma, the water flashes into steam,** causing an eruption of hot water and steam.
  - **Example: Yellowstone National Park (US).**

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Note:

- **Fumaroles:** These are openings in the Earth's crust where volcanic gases and steam are released.
  - Fumaroles occur when **magma passes through the water table,** heating the water and causing steam to rise, carrying volcanic gases like **hydrogen sulfide (H_2S) to the surface.**
  - Often found near **"dying volcanoes"** where magma deep underground has solidified and cooled.
  - **Example: Barren Island (Andaman and Nicobar Islands)**
- **Mudpots:** These are the bubbling pools of mud that form in geothermal areas.
  - Formed when limited geothermal water mixes with mud and clay.
  - Example: Yellowstone National Park (US)



Read more: Underwater Structures in the Indian Ocean

Ocean Anoxic Event 1a

Why in News?

A recent study, published in ***Science Advances***, has provided new insights into the timing and duration of **Ocean Anoxic Event 1a (OAE 1a)**.

- By studying prehistoric rocks and fossils from **Mount Ashibetsu, Japan**, researchers have pinpointed the causes and timeline of the OAE 1a that caused widespread **oxygen depletion (anoxic) in Earth's oceans.**

What is the Ocean Anoxic Event 1a?

- **Definition**: OAE 1a refers to a period during the **Cretaceous Period** (145 million years ago and ended 66 million years ago) when Earth's **oceans became depleted of oxygen**, causing a significant disruption in marine life.
- **Cause**: The event is believed to have been triggered by **massive volcanic eruptions** that released significant amounts of **carbon dioxide (CO_2),** leading to **global warming** and **oxygen depletion** in the oceans, which subsequently resulted in the formation of **anoxic marine basins.**
- **Impact**: CO_2 in seawater forms **carbonic acid,** dissolving **sea creatures' shells and lowering oxygen levels.**
  - This oxygen depletion led to the extinction of marine species, particularly plankton, and caused the formation of **organic carbon-rich layers known as black shales.**

Anoxic Marine Basins

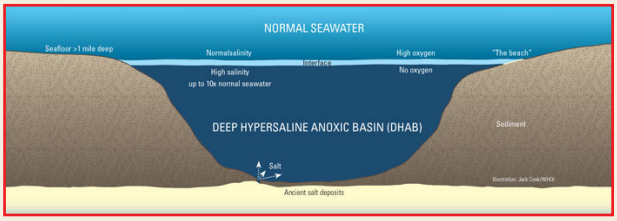
- **About:** An anoxic basin is a body of water, typically found in deep ocean regions, where **oxygen levels are extremely low or absent**.
  - This lack of oxygen **prevents the survival of most aerobic organisms**, but allows specialized microbes and certain fungi to thrive.

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Note:

- These conditions are often associated with deep-sea areas or lakes that are **isolated from the oxygen-rich surface water.**

- **Carbon sequestration:** Anoxic basins slow the decay of organic material (due to low oxygen), preserving carbon. This makes them **potential sites for long-term carbon sequestration,** helping reduce CO_2 levels in the atmosphere.
- **Examples:** Black Sea, Cariaco Basin (Caribbean Sea), and Orca Basin (northwest Gulf of Mexico).



- **Dead Zones:** These are **hypoxic areas (low oxygen)** in oceans and large lakes where oxygen levels are too low to support most marine life.

What are the Key Highlights of the Study on Ocean Anoxic Event 1a?

- **Timing of OAE 1a**: The study pinpointed the exact timing of OAE 1a to around **119.5 million years ago,** using advanced **isotopic analysis** of **volcanic tuffs** (igneous rocks formed from the compaction and cementation of volcanic ash) from **Japan's Hokkaido Island.**
  - OAE 1a lasted 1.1 million years, revealing how long oceans took to recover from CO_2-driven warming and anoxia.
- **Volcanic Eruptions**: The study confirmed that volcanic eruptions released CO_2, triggering oceanic oxygen depletion.
- **Relevance to Modern Climate Change**: The study links past volcanic CO_2 emissions to current **human-induced warming,** warning that the rapid pace of **modern warming** could trigger similar disruptions and potentially lead to a **Holocene extinction (probably a sixth mass extinction event).**
  - It also highlights the long-term impact of elevated CO_2 on marine ecosystems and the global **carbon cycle.**

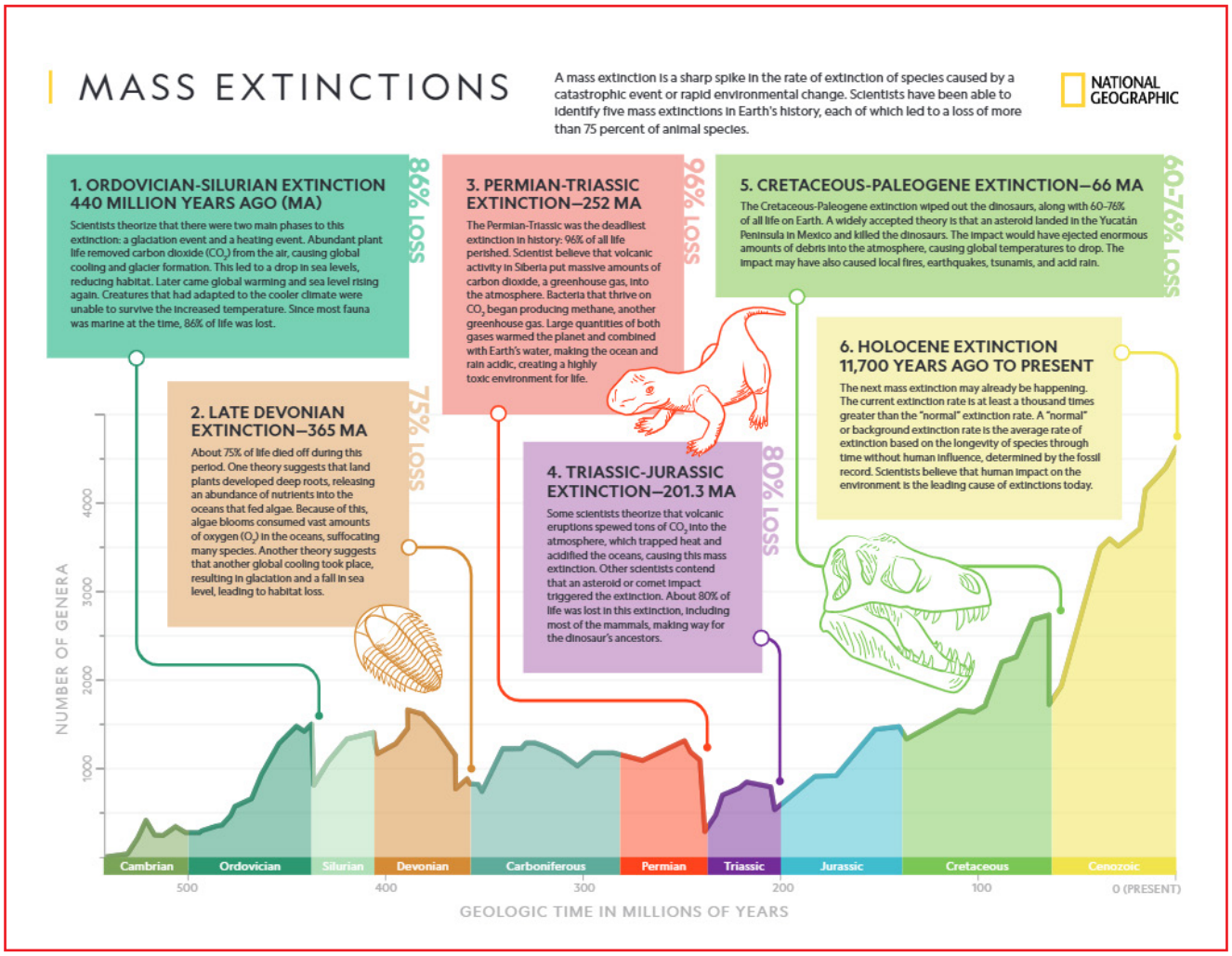
What are the Major Mass Extinction Events on Earth?

- **Ordovician-Silurian Mass Extinction (443 million years ago):**
  - **Impact**: Wiped out approximately 85% of all species.
  - **Cause**: Dramatic temperature drop and **glaciation**, leading to **sea level fall,** followed by rapid warming.
- **Devonian Mass Extinction: Occurred 374 million years ago:**
  - **Impact**: Killed about three-quarters of Earth's species, mostly marine invertebrates.
  - **Cause**: Environmental changes such as global warming, and cooling, fluctuating sea levels, and **reduced atmospheric oxygen** and carbon dioxide. Exact triggers of the extinction remain unclear.
- **Permian Mass Extinction (250 million years ago):**
  - **Impact**: Known as **"The Great Dying,"** it eradicated over 95% of species, including most vertebrates.
  - **Cause**: It is linked to massive volcanic eruptions in the **Siberian Traps, Russia,** causing global warming and ocean anoxia. Volcanism, climate shifts, and a potential asteroid impact likely exacerbated the catastrophe.
- **Triassic Mass Extinction (200 million years ago):**
  - **Impact**: Eliminated about 80% of species, including many **dinosaurs.**
  - **Cause**: Extensive geological activity that raised carbon dioxide levels, global temperatures, and caused **ocean acidification.**
- **Cretaceous Mass Extinction (66 million years ago):**
  - **Impact**: Killed 78% of species, including **non-avian dinosaurs.**
  - **Cause**: Likely caused by an asteroid impact in Mexico, creating a massive crater, global cooling, and ecosystem collapse.
    - Additionally, volcanic eruptions in **India's Deccan Plateau** may have worsened the event by **contributing to global warming.**

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Note:



What is the Holocene Extinction?

- **About:** The Holocene Extinction, also known as the **Sixth Mass Extinction,** refers to the ongoing extinction event that began around **12,000 years ago** and is largely attributed to **human activities,** unlike previous mass extinctions, which were caused by **natural phenomena.**
- **Key Drivers:**
  - **Overexploitation:** Overharvesting resources like overfishing, hunting, and poaching depletes species.
  - **Habitat Loss:** Conversion of land for agriculture and **urbanization** reduces habitats and fragments populations.
  - **Climate Change:** Human-induced climate shifts disrupt ecosystems, species distribution, and relationships.
  - **Pollution:** Industrial, agricultural, and waste pollution harms ecosystems through chemicals and plastics.
  - **Invasive Species:** Non-native species disrupt native ecosystems, outcompeting or preying on local species.
- **Key Examples of Holocene Extinction Events:**
  - The **Megafauna Extinction (12,000 years ago)** wiped out large mammals like **mammoths** and **saber-toothed cats,** likely due to human hunting and **climate change.**
  - **Coral Reef Bleaching** is driven by rising sea temperatures and ocean acidification, endangering reef biodiversity.

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Note:

- **Amphibian Declines,** especially frogs, are caused by habitat loss, pollution, and diseases like chytridiomycosis.

➢ **Impact:** The current extinction rate is **1,000-10,000 times higher than natural rates.**

- Ecosystem services, such as food production, clean water, and air, are at risk, threatening both biodiversity and human life.

➢ **Efforts to Mitigate the Holocene Extinction:** Strengthen commitments to cut carbon emissions and limit **global warming to 1.5°C**, as outlined in the **Paris Agreement.**

- Collaborate globally to **conserve at least 30% of lands, inland waters, and oceans**, as under the **30X30 Initiative.**
- Encourage individuals, businesses, and communities to adopt sustainable practices and demand accountability from governments and corporations.

Golan Heights

Why in News?

The **Golan Heights** has become a focal point of international attention as Israel announces plans to double its population in the strategically important region.



What are Key Facts About Golan Heights?

➢ **Geography:** The Golan Heights is a **1,200-square-kilometre** rocky plateau in southwestern Syria, overlooking the **Jordan River Valley.**

- The name "Golan" is derived from the **biblical city of refuge**, Golan in Bashan, which is mentioned in the Bible.
- The Golan is bounded by **Mount Hermon (north),** the **Yarmūk River(south),** the **Jordan River and Sea of Galilee (west)**, and the **seasonal Wadi Al-Ruqqād (east).**
- The area is a key source of water for an arid region. Rainwater from the Golan's catchment feeds into the **Jordan River.**

➢ **Historical Context:** Israel captured most of the Golan Heights from Syria in the **1967 Six-Day War.** Syria's attempt to retake it during the 1973 war failed.

- In 1974, Israel and Syria signed the **Agreement on Disengagement,** which established a ceasefire following the **Yom Kippur War.**
  - This agreement led to the creation of the **United Nations Disengagement Observer Force (UNDOF)** to monitor the ceasefire line in the Golan Heights.
- Israel annexed the region in **1981**, a move not recognized internationally, though the **US acknowledged Israeli sovereignty in 2019**. Syria still demands its return.

➢ **Military Presence:** The area remains divided by a **United Nations-monitored demilitarized zone (DMZ),** with Israeli and Syrian forces separated by the **"Area of Separation,"** a buffer zone created under the **1974 Agreement.**

➢ **Military Significance:** The Golan Heights is considered a vital **security buffer zone.** Israel's military presence in the area serves as a deterrent against potential threats from Syria and other regional actors.

- The plateau's elevated position allows Israel to monitor movements in both **Syria and Lebanon.**

Key Events Regarding Golan Heights

1967	1973	1981
Six-Day War: Israel seizes Golan Heights	Yom Kippur War: Syria's failed attempt to recapture Golan	Israel's Annexation of Golan

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Note:

Note: In December 2024, India voted in favor of the United Nations General Assembly (UNGA) resolution demanding **Israel's withdrawal from the occupied Syrian Golan Heights.**

- The resolution stressed the illegality of Israeli settlement construction and other activities in the occupied Syrian Golan since 1967.

Read more: Conflict between Israel and Syria

2024 Arctic Report Card

Why in News?

A recent report titled the **2024** Arctic Report Card by the National Oceanic and Atmospheric Administration (NOAA) reveals that the Arctic, once a **major** carbon sink, is now becoming a carbon source due to ongoing climate-induced warming.

Note: NOAA, a federal agency of the US, aims to understand and predict environmental changes, manage coastal and marine resources, and support informed decision-making.

- The Arctic Report Card, issued annually since 2006, provides reliable, and concise environmental information on the Arctic's current state compared to historical records.

What are the Key Findings of the Report?

- **Accelerated Arctic Warming:** The Arctic is warming at an unprecedented rate, with **2024 marking the second-warmest year since records began in 1900**.
  - The **Arctic's summer of 2024** was the **third warmest on record**, with regions like **Alaska** and Canada experiencing extreme heat waves.
- **Arctic Tundra a Carbon Source:** Permafrost thaw is causing the Arctic tundra to switch from a **carbon sink to a carbon source**.
  - Decomposing permafrost releases carbon dioxide **and** methane, accelerating global warming.
  - Wildfires are increasing in frequency and intensity, releasing more carbon and extending the wildfire season.
- **Decline in Sea Ice:** The **extent and thickness of** sea ice have reduced significantly over the past decades. The shorter sea ice season exposes more dark ocean surfaces, which absorb more heat and further contribute to warming.
  - Arctic glaciers and the **Greenland Ice Sheet** continue to contribute meltwater to oceans, exacerbating **global** sea-level rise.
- **Implications:** Changes in the Arctic contribute to **global challenges** like coastal flooding, extreme weather events, **and wildfires.**
  - The Arctic's diminishing ability **to store carbon** underscores the need to **urgently reduce** Greenhouse Gas emissions to mitigate further risks.
  - **The reindeer or caribou** are in decline due to climate change affecting Indigenous communities reliant on them for food and cultural practices.

What is the Arctic?

- **About:** The Arctic is the northernmost polar region of Earth. It includes the Arctic Ocean, adjacent seas, and parts of Alaska (US), Canada, Finland, Greenland, Iceland, Norway, Russia, and Sweden.
  - The Arctic is characterized by its cold climate, with temperatures often dropping below freezing.
- **Geopolitical Importance:** The Arctic is rich in natural resources, including oil, natural gas, and minerals, attracting significant international interest and competition for control over these resources.
- **India's Interest in Arctic Region:** India engaged with the Arctic by signing the **Svalbard Treaty in 1920.**
  - India began its Arctic research program in 2007, and launched its first scientific expedition to the Arctic Ocean and established the Himadri research base in the Svalbard archipelago, Norway in 2008.
  - India has held observer status in the Arctic Council since 2013.
  - In 2022, the Indian government announced an Arctic policy aimed at engaging in climate research. The National Centre for Polar and Ocean Research will be the nodal agency for its implementation.

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Note:



Human Evolution and Migration

Why in News?

Scientists have established that **Homo sapiens evolved in Africa** and **later migrated to various parts of the world**. The routes and timing of these migrations are still debatable among the scientists.

- The **coastal dispersion theory** suggests migration along coastlines, though it lacks strong archaeological evidence.

THEORIES OF EVOLUTION

The modification of living organisms during their descent, generation by generation from common ancestors.

Oparin-Haldane Theory of Origin of Life

- Also known as Materialistic theory
- Describes process of origin of life on early Earth as:

Physio-chemical processes of atoms→ Organic compounds→ Macromolecules→ First living system or cells

Theory of Inheritance of Acquired Character (Lamarckism)

- First theory of organic evolution
- **Evolutionary ideas:**
  - Internal forces of life increase the size of organism
  - New structures appear because of an 'inner want'
  - Direct environmental effect over living organisms
  - Inheritance of acquired character
- **E.g.;** Long neck of giraffe due to gradual lack of surface vegetation

Theory of Natural Selection (Darwinism)

- Foundation of evolutionary biology
- **Elements:**
  - Universal occurrence of variation
  - Rapid multiplication
  - **The struggle for existence** - Intraspecific and interspecific
  - **Survival of the fittest (Natural Selection)**
  - Inheritance of useful variations; Elimination of non-useful variations
- **E.g.;** Survival of more dark-winged moths than white-winged ones in post-industrialisation period

Neo-Darwinism

Integration of Darwin's theory of evolution with Gregor Mendel's theory of genetics

Modern Synthetic Theory

- One of the proven theories of organic evolution
- Includes factors such as – Mutation, Variation /Recombination, Heredity, Natural Selection and Isolation

Mutation Theory (Hugo de Vries)

- Describes evolution as a jerky process where new varieties of species are formed by mutations (discontinuous variations)
- **Salient features:**
  - Mutation appears all of a sudden and becomes operational immediately
  - Same type of mutation in several individuals of a species
  - All mutations are inheritable
  - Useful mutations are selected and lethal ones are eliminated by nature

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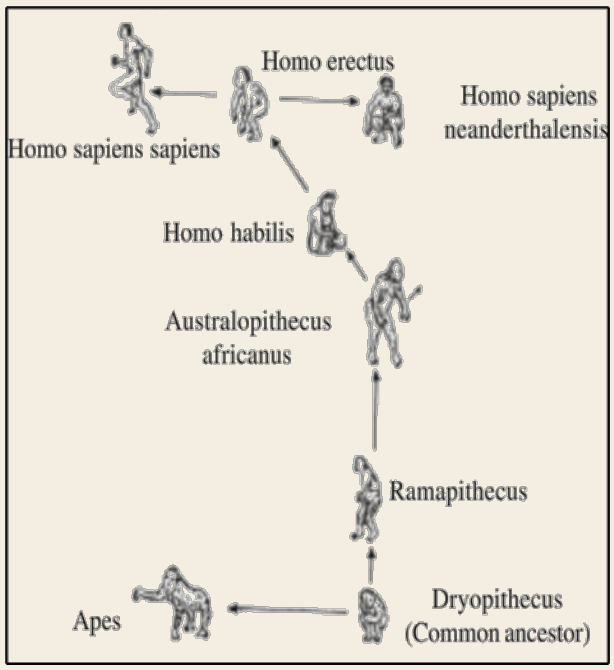
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Note:

Human Evolution

- Human evolution is the **evolutionary process that led to the emergence of anatomically modern humans,** beginning with the evolutionary history of primates—in particular **genus Homo**—and leading to the **emergence of Homo sapiens** as a distinct species of the **hominid family, the great apes.**
- **Stages of Evolution of Human:**
  - Dryopithecus
  - Ramapithecus
  - Australopithecus
  - Homo
    - Homo habilis
    - Homo erectus
    - Homo sapiens
      - Homo sapiens neanderthalensis
      - Homo sapiens sapiens



What is the Route of Human Migration?

- **Background:**
  - **Genetic studies** have provided **insights into human evolution and migration patterns**. By analyzing **mitochondrial DNA mutations**, scientists confirmed that Homo sapiens evolved in Africa over millennia before migrating globally.
    - While scientists widely accept the **out-of-Africa theory**, they differ on the timing and routes of migration.
- **Two Theories of Dispersion:**
  - **Coastal Dispersion Theory:** Studies suggest **humans migrated along coasts**, benefiting from **warm climates, abundant food, and tropical conditions.**
    - **Research in 2005** using mitochondrial DNA of **260 Orang Asli individuals (Tribe of Malaysia)** indicated **rapid coastal migration around 65,000 years ago, reaching Australia** via the **Indian Ocean.**
    - A **2020 study on 2,700-year-old DNA in Japan** linked coastal migration to genetic affinities with **Taiwanese tribes.**
- **Andaman Islands' settlements** also correlate with coastal journeys.
  - Challenges to the Theory:
- Archeological **evidence in India contradicts** this model. **Inland Palaeolithic sites** dominate, with **no archeological traces along the Indian Ocean coastline** to support coastal dispersion.
- **Inland Dispersion Model:** The inland dispersal model suggests that **early humans migrated through interior terrestrial routes** rather than coastal ones.
  - Saurashtra Peninsula Study:
    - Recent research analysed **Middle Palaeolithic tools** in the **Bhadar and Aji river basins of Gujarat.**
    - Using relative dating methods, the **tools** were found to be **56,000–48,000 years old, indicating inland migration.**
    - Middle Palaeolithic tools revealed advanced flaking techniques, contrasting with sharper blade tools of the **Late Palaeolithic.**
    - Studies suggest Saurashtra was connected to **Kutch, Makran, and the Western Ghats during the Middle Palaeolithic**, indicating the region was farther from the coast.
    - **No evidence of marine resource dependence** (e.g., fish, shellfish) was found, further supporting inland migration.

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Note:

Security

Highlights

- *61st Raising Day of SSB*
- *SIPRI Report on Global Arms Producers*
- *Eliminating Maoist Insurgency*

61st Raising Day of SSB

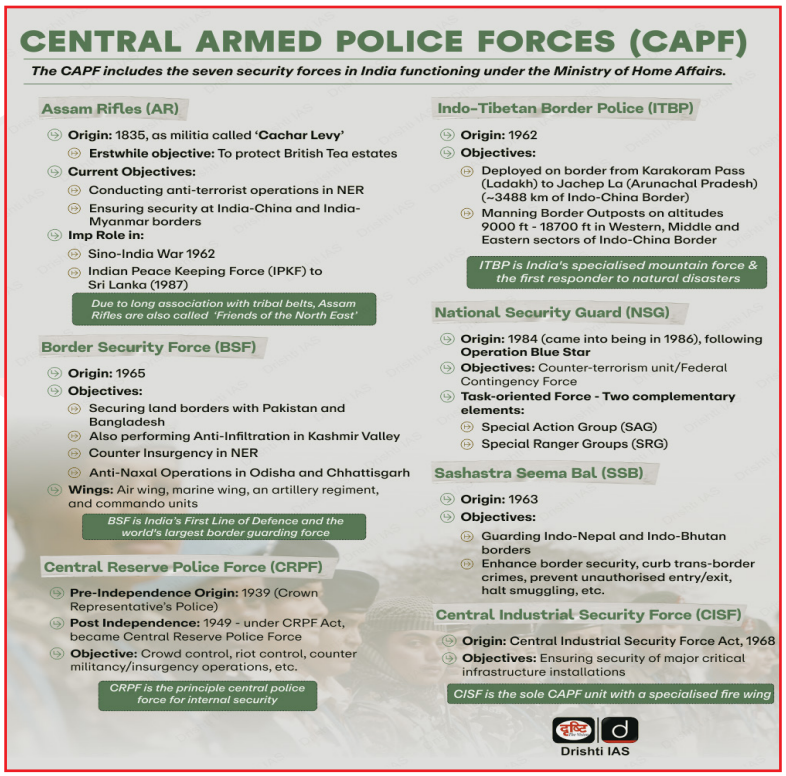
Why in News?

Recently, the Union Home Minister attended the **61st Raising Day function** of **Sashastra Seema Bal (SSB)** at **Siliguri** in West Bengal.

- He lauded the role of SSB in protecting the **Siliguri Corridor**, gateway to Northeast and Sikkim and surrounded by **three International borders.**

What is Sashastra Seema Bal (SSB)?

- **About:** SSB is a part of the **Central Armed Police Forces (CAPF)** and guards India's border with **Nepal (1,751 km) and Bhutan (699 km).**
  - It is **one** of the seven **paramilitary forces** in India (**Others 6: Assam Rifles, Border Security Force, Central Industrial Security Force, Central Reserve Police Force, Indo Tibetan Border Police and National Security Guard**.
- **Formation:** It was established as the **Special Service Bureau** in **May 1963,** in the aftermath of the **Chinese aggression in 1962.**
  - It comes under the aegis of the **Ministry of Home Affairs.**
- **Recognition:** SSB is the **first central paramilitary force** that included **women** in its ranks.
  - In March 2004, SSB was awarded the **President's Colours** for its key role in national security.
    - The President's Colours is the **highest honour** that can be bestowed upon any military unit.



What is Siliguri Corridor?

- **About:** The Siliguri Corridor is a **narrow stretch of land**, approximately **60 km long** and **17–22 km wide**. It is referred to as the **'Chicken Neck'** due to its **narrow shape**.
- **Location:** Located between **Nepal, Bhutan, and Bangladesh**, it is the **only land link** between India and its northeastern states.
  - It is located in **West Bengal**.

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Note:

- **Importance:** It plays a vital role in **military logistics,** offering key routes for road and railway networks that facilitate the movement of armed forces.
  - Non-access to Siliguri Corridor, would **isolate India's northeastern region**, severing supply lines and reinforcements.



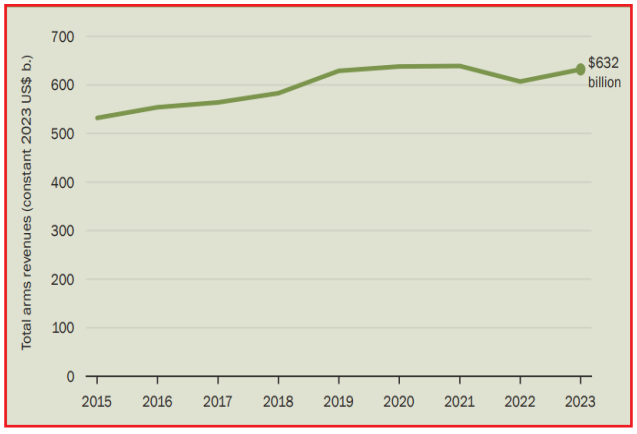
SIPRI Report on Global Arms Producers

Why in News?

Recently, the **Stockholm International Peace Research Institute (SIPRI)** released its annual report on the **world's 100 largest arms producers** with **three Indian firms** among the top global arms manufacturers.

What are the Key Findings of the SIPRI Report?

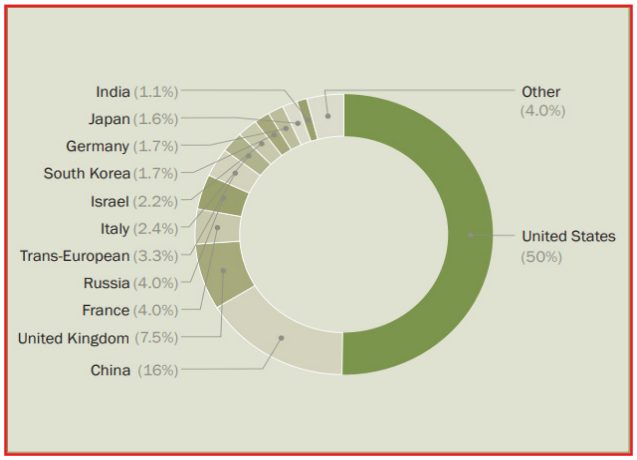
- **Global Arms Revenue:** Global arms revenues reached **USD 632 billion in 2023, a 4.2% rise** driven by wars, regional tensions, and rearmament.



- **Performance of Indian Companies:** Three Indian companies namely **Hindustan Aeronautics Limited (Rank 43)**, **Bharat Electronics Limited (Rank 67)**, and **Mazagon Dock Shipbuilders Ltd (Rank 94)** ranked among the Top 100 global arms producers.
  - The combined revenues of these companies rose by **5.8%**, from USD **6.37 billion in 2022** to **USD 6.74 billion (Rs 56,769 crore) in 2023**.



- **Major Global Producers:**
  - **US:** The **41 US companies in the Top 100** earned USD 317 billion in 2023, **half of global arms revenues**, with the **top five** producers being **US-based.**
  - **China:** The **nine Chinese companies** in the Top 100 recorded a total revenue of USD **103 billion** in 2023.
  - **Russia:** The arms revenues of the **two Russian companies** for which data was available went up by **40%** to an estimated **USD 25.5 billion** due to a significant increase in orders and production.



- **Regional Highlights:** Growth in arms revenue was seen in **all regions** of the world, with particularly

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Note:

sharp rises among companies based in **Russia and the Middle East (West Asia).**

- **Reasons for Arms Revenue Growth:** Increased demand was driven by **wars in Gaza and Ukraine**, growing tensions in **East Asia,** and expanded **rearmament programs** globally.
  - Smaller arms producers were **more efficient** in responding to increased demand from conflict zones.
- **Outlook for 2024:** Arms revenues rose in 2023 and are expected to grow in 2024. Companies are **recruiting more**, showing optimism about future sales.

Note: Arms revenues refer to **revenues generated** from the sales of military goods and services to military customers **domestically and abroad.**

Stockholm International Peace Research Institute (SIPRI)

- **SIPRI** is an **independent** international institute dedicated to research into **conflict, armaments, arms control and disarmament.**
- Established in **1966**, SIPRI provides **data, analysis and recommendations**, based on **open sources,** to policymakers, researchers, media and the interested public.

What are Key Items in India's Defence Exports?

- **BrahMos Missiles:** India delivered the first batch of BrahMos supersonic cruise missiles to the **Philippines,** following a **USD 375-million deal** for three shore-based, anti-ship missile batteries.
  - ASEAN countries and some **Gulf nations** are showing increasing interest in acquiring **BrahMos missiles**.
- **Dornier-228 Aircraft:** India exports the Dornier-228 aircraft, a versatile and reliable aircraft for defense and civilian applications to various countries.
- **Subsidiary Aircraft Parts:** India exports **subsidiary aircraft parts** like **fuselage** and **wings** to defense giants such as **Boeing** and **Lockheed Martin** as part of the global supply chain and offset commitments.
- **Software and Electronic Equipment:** India exports **software** and **electronic equipment** for defense applications to **France**.
- **155mm Artillery Guns:** India has been exporting **155mm artillery guns** to countries like **Armenia**, highlighting its capabilities in producing advanced artillery systems.
- **Akash Missile System:** The Akash air defence missile system, including its variant **Akash-1S**, has been a major export, with **Armenia** being the first international customer.
- **Pinaka:** Pinaka **multi-launch rocket systems** have been exported, with **Armenia** being a significant buyer.

India's Achievements

- **Arms Production:** India's annual defence production hit a record high of almost **Rs 1.27 trillion in FY24**, up **16.7%** over the previous year's figure of **about Rs 1.09 trillion**.
  - It shows India's defence ecosystem has **covered over 40%** of the ambitious annual defence production target of **Rs 3 trillion by FY29**.
- **Expansion of Arms Production:** Apart from the **16 DPSUs**, India's defence-industrial base has also expanded to over **430 licenced companies and 16,000 micro, small and medium enterprises**.
  - The private sector accounts for **21% of this expansion** in arms production capacity.
- **Export Destinations:** Currently, India exports to **over 100 nations**, with the **top three** destinations for defence exports in 2023-24 being the **USA, France, and Armenia**.

What are India's Initiatives to Boost Defence Indigenisation and Exports?

- **Liberalized FDI Policy:** FDI **limit** in the defence sector was raised in 2020 to **74%** through the **automatic route** for companies seeking new **defence industrial licenses** and up to **100%** through the **government route** for those likely to result in access to modern technology.
- **Priority for Domestic Procurement:** Emphasis is placed on procuring capital items from domestic sources under the Defence Acquisition Procedure (DAP)-2020.
- **Positive Indigenization Lists:** Five Positive Indigenization Lists with **509 items** and five lists of **5,012 items** from

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Note:

Defence Public Sector Undertakings (DPSUs) were issued, with **import bans** after specified timelines.

- Additionally, launch of the **Self-Reliant Initiatives through Joint Action (SRIJAN) portal** to facilitate indigenization by Indian industry, including MSMEs.

- **iDEX Scheme:** The Innovations for Defence Excellence (iDEX) scheme was launched to involve startups and Micro, Small, and Medium Enterprises (MSMEs) in defence innovation.
- **Public Procurement Preference:** Implementation of the Public Procurement (Preference to Make in India) Order 2017 to support domestic manufacturers.
- **Defence Industrial Corridors:** Establishment of **two** Defence Industrial Corridors, one each in **Uttar Pradesh and Tamil Nadu**, to promote defence manufacturing.
  - Defence Research & Development (R&D) has been opened up for **industry and startups** to foster innovation and collaboration.

Eliminating Maoist Insurgency

Why in News?

Recently, the **Union Home Minister** paid tributes to the martyrs who have laid down their lives fighting Maoist Insurgency **(Naxalism)** at **Amar Shaheed Smarak, Jagdalpur, Chhattisgarh.**

- He also said that by **March 2026,** India will be **completely free from maoist insurgency** (Naxalism) using the **three-pronged strategy.**
  - The **three-pronged carrot-and-stick strategy** involves **Security measures, development, and empowerment** to deal with Maoist Insurgency.

What is the Three-Pronged Strategy to Eliminate Maoist Insurgency?

- **Security Measures (Force):**
  - **Deployment of Security Forces**: Strengthening the presence of **Central and State police forces** in Left Wing Extremism (LWE)-affected areas.
  - **Joint Operations**: Coordinated actions between **state police** and central armed forces like the CRPF (Central Reserve Police Force) **and** COBRA (Commando Battalion for Resolute Action).
  - **Capacity Building**: Upgrading weapons, communication systems, and infrastructure for forces. E.g., **use of Mini UAV** for CAPF battalions, **solar lights, mobile towers** etc.
  - **Operation SAMADHAN**: A focused approach addressing intelligence gathering, operational strategy, and development.
- **Development Initiatives:**
  - **Focused Development Schemes**: Implementation of flagship programs such as:
    - PMGSY (Pradhan Mantri Gram Sadak Yojana)**:** For rural road connectivity.
    - Aspirational Districts Programme**:** The government has approved the construction of 15,000 houses in Naxal-affected regions.
      - Efforts are underway to achieve **100% saturation** of government welfare schemes in every village
    - **Skill Development in 47 LWE Affected Districts Scheme:** Specifically tailored for LWE-affected areas.
    - **Civic Action Program (CAP):** Providing financial grants for CAPFs to undertake various welfare activities in the LWE affected areas
  - **Special Infrastructure Scheme**: Creation of basic infrastructure like **roads, bridges, and schools** in remote areas.
  - **Better Governance**: Enhancing administrative efficiency in these regions through recruitment of local personnel.
- **Empowerment (Winning Hearts and Minds Approach):**
  - **Public Engagement**: Fostering **trust and communication** between the government and tribal communities, reducing alienation.
  - **Rehabilitation Policies**: Surrender and rehabilitation schemes for Maoist cadres, offering incentives like **education, vocational training, and financial aid**.
  - **Addressing Grievances**: Ensuring **fair land acquisition** policies, implementation of Forest Rights Act, 2006, and protection of tribal rights to reduce the socio-economic gap.

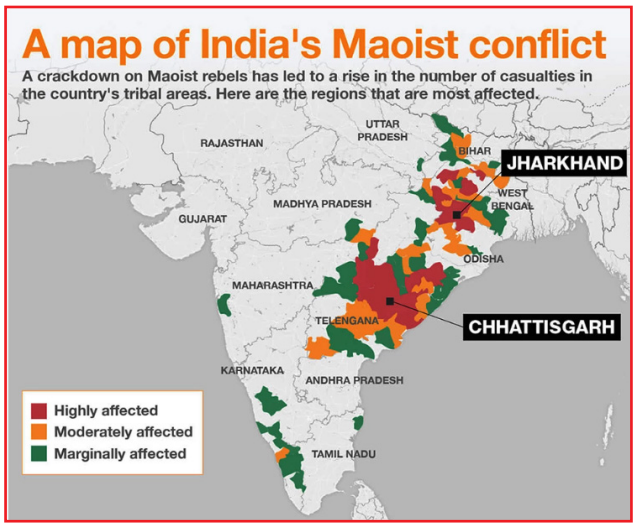
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Note:

Note: SAMADHAN stands for S – Smart Leadership, A – Aggressive Strategy, M – Motivation and Training, A – Actionable Intelligence, D -Dashboard Based KPIs (Key Performance Indicators), and KRAs (Key Result Areas), H- Harnessing Technology, A – Action plan for each theatre and N- No access to Financing.

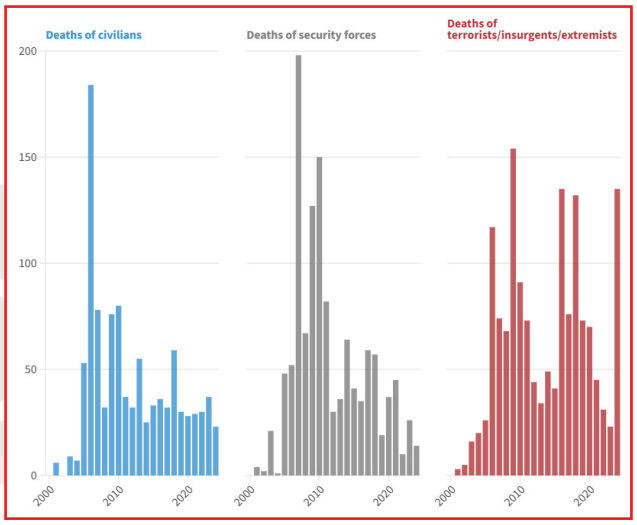
What is Maoism?

- **About:** Maoism is a form of communism developed by **Mao Tse Tung**. It is a doctrine to capture State power through a combination of **armed insurgency, mass mobilization and strategic alliances.**
  - Mao called this process, the **'Protracted People's War',** where the emphasis is on **'military line'** to capture power.
- **Maoist Ideology:** The central theme of Maoist ideology is the use of **violence and armed insurrection** as a means to capture State power.
  - **'Bearing of arms is non-negotiable'** as per the Maoist insurgency doctrine.
- **Indian Maoists:** The largest and the most violent Maoist formation in India is the **Communist Party of India (Maoist) formed in 2004**.
  - The **CPI (Maoist) and its front organizations** were banned under the **Unlawful Activities (Prevention) Act, 1967**.
    - Front Organizations are the **off-shoots** of the parent Maoist party, which professes a separate existence **to escape legal liability.**



What are the Recent Achievements in Eliminating Maoist Insurgency?

- **'Maoist-Free' Villages:** In 2023, **287** Naxalites were **neutralized,** approximately **1,000** were **arrested,** and **837 surrendered** in Chhattisgarh.
  - **Villages in Dantewada** have been progressively declared **'Maoist-free'**, with over **15 villages achieving this status by 2021**.
  - Never before has such a vast area been freed from Naxal influence in a year, with record numbers of Naxalites neutralized, arrested, or surrendered.



- **Low Security Forces' Casualties:** In 2024, **14 security personnel deaths** were reported, a dramatic decline compared to **198 deaths in 2007** (the highest recorded).
- **Winning Hearts and Minds:** The Maoists' setbacks are due to **waning support** from tribal communities, who, after years of harm, now **show fatigue and alienation.**
- **Enhanced Security Measures:** Deployment of **12 helicopters**, up from just 2 earlier, for troop support and operational efficiency has **drastically reduced** the number of **casualties** among government troops.
- **Infrastructure and Logistics:** Between 2014 and 2024, **544 fortified police stations** were built, compared to only **66 between 2004 and 2014.**
  - Filling of **45 police stations** to eliminate security vacuums.
- **Special Central Assistance:** A total of **Rs 14,367 crore** has been approved so far, out of which **Rs 12,000 crore**

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Note:

has been spent on improving basic infrastructure in affected regions.

What are the Challenges in Eliminating Maoist Insurgency?

- **Exploitation and Oppression:** Maoists' core base **tribals and dalits** faced historic **marginalization**, with Adivasis further alienated by the **feudal system, caste hierarchy**, and laws like the **Forest Conservation Act, 1980**.
- **Lack of Development:** Interior areas lack **basic infrastructure,** with development stalled by governance and implementation failures despite significant allocations.
- **Centralized Maoist Command:** The CPI (Maoists) have **centralized command,** while the government's **fragmented response** allows areas like **Abhujmadh** to serve as logistical bases.
- **Access to Rich Resources: 80% of coal reserves** and nearly **19%** of other rich **mineral resources** are located in naxal affected tribal areas which has given them an **additional weapon and impetus** to extract maximum benefits.
- **Trust Deficit:** Local alienation is worsened by **ineffective governance,** non-implementation of constitutional provisions (e.g., **Fifth and Ninth Schedules**), and displacement without proper rehabilitation.

■■■

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Note:

Disaster Management

Highlights

- *Stampede Mitigation*
- *20 Years of Indian Ocean Tsunami 2004*

Stampede Mitigation

Why in News?

Recently, a **surprise appearance** by a Telugu actor led to a **stampede in Hyderabad**, that again revived the concerns related to **crowd management and stampede** in India.

What is a Stampede?

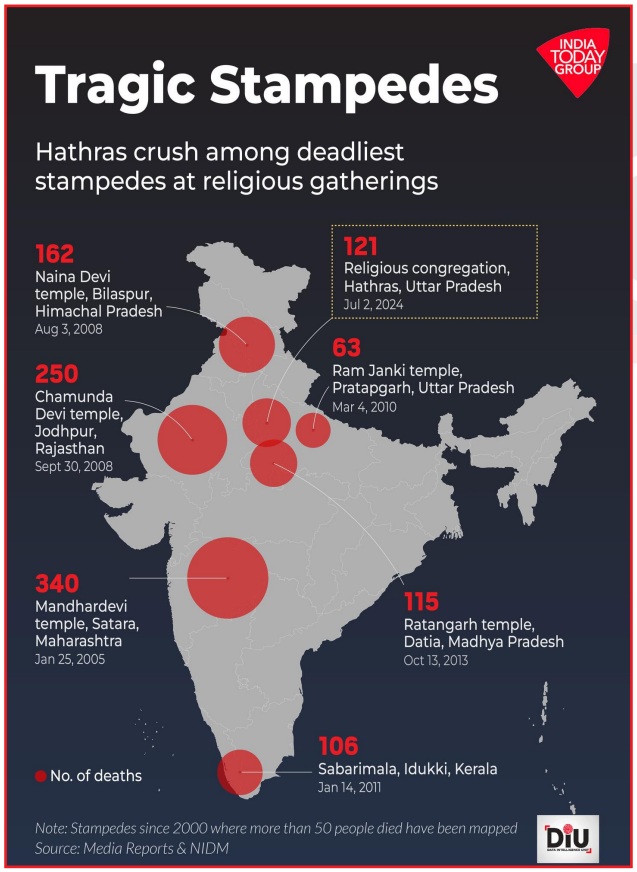
- **About:** A stampede is a **sudden, uncontrolled rush** of a large crowd of people or animals, typically triggered by **panic, fear, or excitement.**
  - It occurs in crowded areas where **high density of people** restricts movement, causing **chaos and potential casualties.**
- **Causes:** Stampedes are caused by **human, infrastructure, and organizational factors**.
  - **Human Factors:**
    - **Panic or Fear**: Sudden fear (e.g., of a **fire, explosion, or perceived threat**) can trigger **mass hysteria** (uncontrollable fear or anxiety).
    - **Excitement or Euphoria**: Overwhelming enthusiasm, such as during **concerts or celebrations**, may lead to loss of control.
    - **Impatience or Aggression**: Frustration due to **long waits, delays, or limited access points** can cause people to push and shove.
  - **Poor Infrastructure:**
    - **Overcrowding:** Insufficient space increases the risk of crushing and trampling.
    - **Insufficient Facilities:** Narrow paths, **blocked exits, or lack of barriers** create bottlenecks.
    - **Adverse Conditions: Slippery floors, poor lighting**, or uneven ground increase the chance of falling.
  - **Organizational Factors:**
    - **Inadequate Crowd Management:** Lack of trained personnel to control or direct crowds.
    - **Insufficient Planning:** Poor venue design, **limited entry/exit points**, or inadequate emergency planning.
    - **Failure in Communication:** Absence of clear instructions leads to confusion and panic.
- **Cause of Death:** During a stampede, **crushing pressure on the chest** restricts the ability of the **diaphragm (base of lungs)** to contract and expand properly. The body **cannot take in enough air or expel carbon dioxide.**
  - This leads to **hypoxia** (lack of oxygen) and **hypercapnia** (excess carbon dioxide), both of which are life-threatening conditions.
- **Impact:**
  - **Physical Impacts:** Stampedes can result in **high fatality rates**. It often results in **bruises, fractures, and broken bones** due to people being pushed, trampled, or crushed.
  - **Psychological Impacts:** Stampede survivors or witnesses may experience psychological trauma, **Post-Traumatic Stress Disorder (PTSD)**, anxiety, panic attacks, and long-term emotional scars.
  - **Legal Impacts:** A major stampede can prompt calls for **stricter regulations** and improved crowd management for enhanced safety standards for public events and gatherings.
  - **Impact on Infrastructure:** It can **damage physical infrastructure**, including barriers and buildings, leading to significant repair and upgrade costs.

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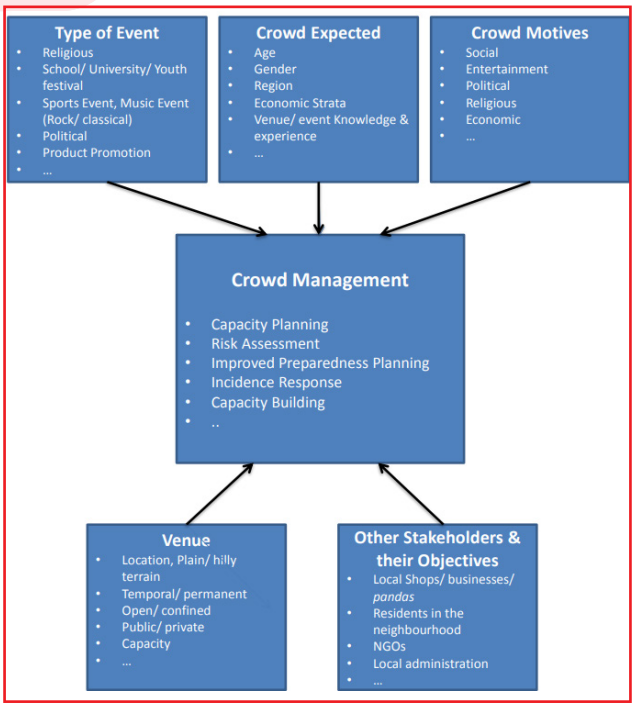
Deadly Stampedes in India

- **Hathras (2024):** At least **121 people**, mostly women and children, were killed in a stampede during a religious event in **Hathras, Uttar Pradesh.**
- **Mumbai Pedestrian Bridge (2017): 22 died** in a stampede during rush hour.
- **Allahabad Train Station (2013):** 36 killed due to a platform change during **Kumbh Mela.**
- **Naina Devi Temple (2008):** Around 145 Hindu pilgrims were killed in a stampede at the **Naina Devi temple** in Himachal Pradesh, triggered by rumors of a **landslide.**
- **Mandhardevi Temple (2005):** More than **265 Hindu devotees** lost their lives and hundreds were injured at the **Mandhardevi temple in Maharashtra.**



What are NDMA Guidelines to Control Stampedes?

- **Infrastructure Development**: Ensuring venues and access routes can **handle large crowds**, especially in disaster-prone areas like **hilly terrain and narrow pathways**.
  - Encouraging separate routes for **normal, express, and emergency flows** helps manage the movement of vulnerable groups like **children, the elderly, and the disabled.**
- **Panic Management**: In case of incidents like **rumors or sudden events** (e.g., a loud noise), the NDMA advises **quick intervention** by trained personnel to prevent stampedes.
- **Crowd Control:** The NDMA advocates a **community-based approach** to crowd control, focusing on **clear communication** and understanding rather than relying solely on force.
- **Demand Management**: This involves analyzing historical **crowd data, arrival patterns, and peak periods**. Advanced ticketing or registration can help manage crowd inflow.
- **Fire Safety:** NDMA highlights precautions such as **safe electrical wiring, monitoring LPG cylinder usage,** and caution with fireworks to prevent fires.



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Note:

National Disaster Management Authority (NDMA)

- **About:** NDMA headed by the **Prime Minister of India**, is the country's highest **statutory body** for managing disasters.
- **Establishment and Purpose:** It was **established under the** Disaster Management Act, 2005 to build institutional mechanisms at both the **State** and **District levels** for effective disaster management.
- **Responsibilities:** NDMA is tasked with **formulating policies**, **plans**, and **guidelines** for disaster management, emphasizing **prevention**, **mitigation**, **preparedness**, and **response**.
- **Vision and Goals:** The authority aims to create a **safer** and **disaster-resilient India** through a **proactive** approach and **sustainable development** strategies.

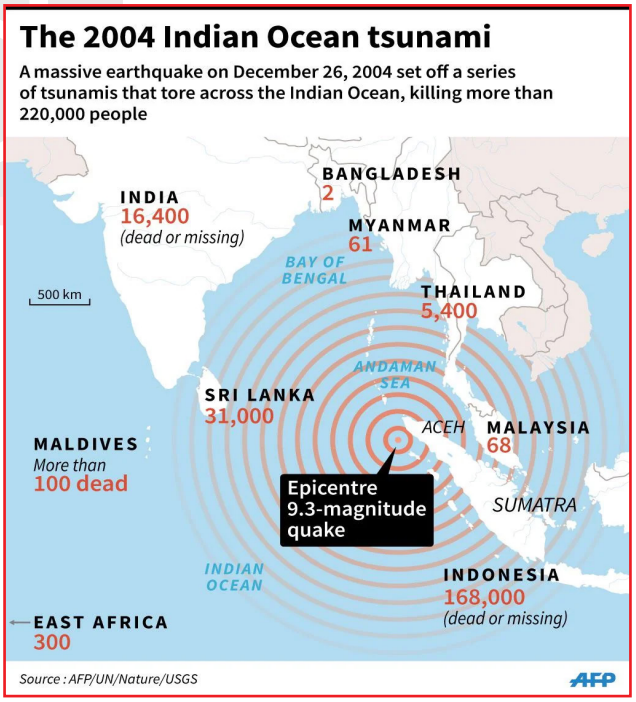
20 Years of Indian Ocean Tsunami 2004

Why in News?

26th December 2024, marked the **20th anniversary** of the **2004 Indian Ocean earthquake and tsunami.**

What was the 2004 Indian Ocean Earthquake and Tsunami?

- **Origin and Cause:** The earthquake had a **magnitude of 9.1**, making it the **third-largest** earthquake [Others two: Chile, 1960 (magnitude 9.5) and Alaska, 1964 (magnitude 9.2)] recorded globally since 1900.
  - The earthquake originated in the **Sunda Trench**, where the **Indo-Australian plate** subducts beneath the **Burma microplate** (part of the **Eurasian plate**).
- **Geographic Impact**: It affected an astounding **1,300 km** from **Sumatra** in the south to the **Coco Islands** in the north.
  - The earthquake's tremors were felt across **Indonesia, Bangladesh, India, Malaysia, Maldives, Myanmar, Singapore, Sri Lanka, and Thailand**.
  - In **Car Nicobar**, the **Indian air force base** was **completely destroyed,** underscoring the scale of destruction.
- **Death and Displacement:** The tsunami resulted in an estimated over **227,000 deaths**, making it the **deadliest tsunami** in recorded history.
  - Over **1.7 million people** were displaced due to the destruction of homes and infrastructure.
- **Lessons for India:** India **didn't anticipate** such a large event along **India's eastern coast,** as the only previous tsunamis occurred in **1881** (from a large earthquake near Car Nicobar island) and **1883** (from the Krakatoa explosion), both producing **only small surges.**
- **Reduction in Mortality:** The **1999 Odisha super cyclone** killed over **10,000 people** while **Cyclone Yaas (2021)** resulted in fewer than **six casualties** that shows India has made significant progress in disaster risk reduction (DRR).
  - However, **infrastructure damage** caused due to cyclones is still a cause of concern. E.g., **Cyclone Dana (2024)** caused widespread damage in Odisha that is estimated at **Rs 616 crore.**



Tsunami

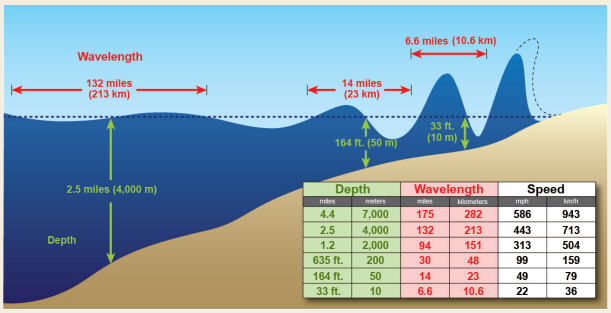
- Tsunamis are **giant waves** caused by **earthquakes** or **volcanic eruptions** under the sea.
  - It is also caused by **landslides, nuclear explosion, seamount collapse**, and meteorite impact.

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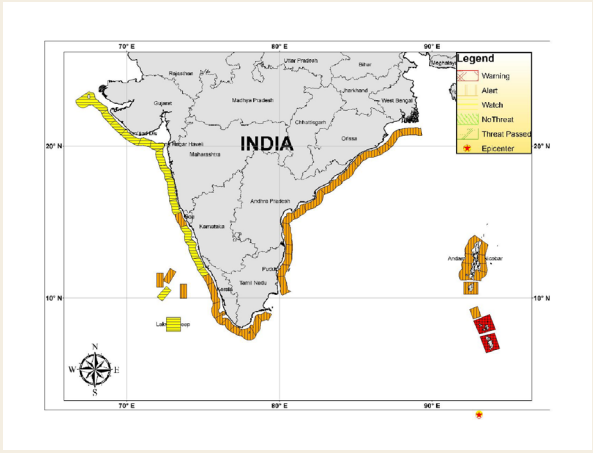
Note:

- Out in the **depths** of the ocean, tsunami waves do not dramatically increase in height.
  - But as the **tsunami approaches land**, they build up to **higher and higher heights** as the **depth** of the ocean **decreases.**
- The **speed** of tsunami waves depends on **ocean depth rather than the distance** from the source of the wave.
- Tsunami waves may travel **as fast as jet planes over deep waters**, only **slowing down** when reaching **shallow waters.**



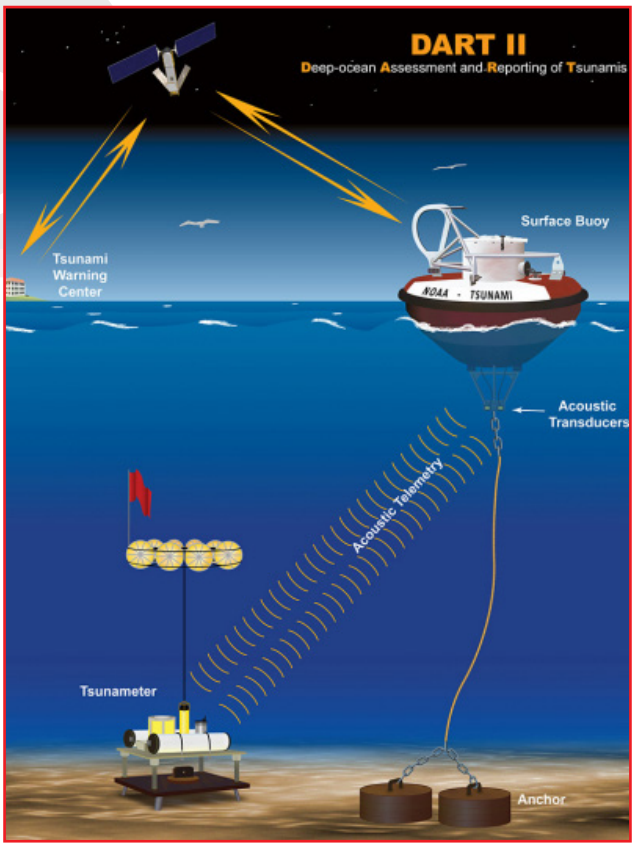
Depth		Wavelength		Speed	
miles	meters	miles	kilometers	mph	km/h
4.4	7,000	175	282	586	943
2.5	4,000	132	213	443	713
1.2	2,000	94	151	313	504
635 ft.	200	30	48	99	159
164 ft.	50	14	23	49	79
33 ft.	10	6.6	10.6	22	36

- **Tsunami Prone Areas:** India is **vulnerable** to various natural and human-made disasters due to its unique geo-climatic and socio-economic conditions.
  - Of the **7,516 km long coastline**, close to **5,700 km is prone to cyclones and tsunamis.**



What Initiatives were Taken after the 2004 Indian Ocean Tsunami to Minimise Damages?

- **Early Warning Systems**: The **Indian Tsunami Early Warning Centre (ITEWC)** was established in **2007** by the **Union Ministry of Earth Sciences**.
  - **ITEWC** operates from the **Indian National Centre for Ocean Information Services (INCOIS)** in **Hyderabad**, using **seismological stations**, **bottom pressure recorders**, and **tidal stations** across the **Indian Ocean basin** to detect and issue early warnings for potential tsunamis.
    - The **ITEWC** functions as an **approved Tsunami Service Provider** of the **Indian Ocean Tsunami Warning & Mitigation System (IOTWMS)** that is an integral part of the **Global Tsunami Warning and Mitigation System.**
  - Global, there are around **150 stations** worldwide monitoring seismic activity, and **Deep-ocean Assessment and Reporting of Tsunamis (DART)** buoys track changes in pressure on the seafloor to detect tsunami generation.



- **Real-time Monitoring: Real-time ocean monitoring systems** were developed to detect tsunami-producing earthquakes and issue alerts in as little as **10 minutes**.

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Note:

- India became the **5th country globally** to have an advanced tsunami warning system, joining **the US, Japan, Chile, and Australia**.
- Globally, **sea-level monitoring stations** have increased from just **one in 2004** to **14,000** today, to detect rising sea levels and potential tsunamis.

- **Technological Advancements:** The early warning systems now use better algorithms and faster supercomputers enabling **rapid modeling**, allowing for faster and more accurate predictions of tsunami behavior.
- **Tsunami Geology Research**: The work of tsunami geology, pioneered by **Brian Atwater** of the US Geological Survey started to search for evidence of tsunamis in history.
  - Investigations of **mangrove swamps** and coastal areas led to the discovery of **past tsunami events (1,000 years ago)** in the Andaman and Nicobar Islands and **Mahabalipuram (a port of the Pallava dynasty)**.
- **Research on Slow Slips:** Researchers started studying **seismic slips** at plate boundaries to understand the processes that occur before and after **major earthquakes.**
  - Investigations indicated a **perceptible downward ground movement** in South Andaman between **2003 and 2004**, before the megathrust earthquake of 2004.
- **Nuclear Plant Vulnerability Studies**: Following the 2004 tsunami, researchers assessed the vulnerability of **nuclear power plants**, such as **Kalpakkam**, to tsunami risks.
  - The **Kalpakkam nuclear plant** shut down automatically due to rising water levels and the reactor **restarted after six days**.
- **Inundation Studies**: **Tsunami modelling** using **mathematical tools** helped identify **inundation limits** and assess risks to coastal infrastructure.
- **Focus on High-Risk Areas**: Experts began to study other high-risk areas like the **Makran Coast** (Iran and Pakistan) and the **Myanmar coast**.
  - The Makran Coast could direct a tsunami towards **India's west coast,** impacting Mumbai and nuclear reactors.
- **Global Cooperation:** The tsunami warning system has become more **globally coordinated**, with countries working together to **monitor earthquakes and tsunamis.**
  - E.g., After the 2004 Indian Ocean tsunami, **UNESCO Intergovernmental Oceanographic Commission (IOC)** was tasked with establishing global tsunami warning services across ocean basins.

What are NDMA Guidelines Tsunami Mitigation?

- **Risk Mapping:** Conducting **comprehensive tsunami risk assessments** for vulnerable coastal areas, identifying the regions at the greatest risk from tsunamis.
- **Early Warning System:** Establishing and maintaining an effective **tsunami early warning system** that includes **seismic sensors, tide gauges, and ocean buoys** to monitor potential tsunami threats.
  - Disseminate tsunami warnings through channels like **SMS, radio, television, and public announcement systems**.
- **Coastal Zoning:** Relevant authorities to implement the **Coastal Regulation Zone (CRZ) Notification** for controlled and sustainable development in coastal areas.
  - Promoting **safe development** in low-risk areas, with a focus on **natural buffers** like **mangroves** and **sand dunes**.
- **Tsunami-Resilient Infrastructure:** Building tsunami-safe infrastructure, including **elevated buildings,** reinforced structures, and emergency shelters above expected tsunami wave heights.
  - Constructing **seawalls, breakwaters, and embankments** in high-risk areas to reduce the impact of tsunami waves.
- **Community Preparedness:** Conducting regular public awareness campaigns on **tsunami risks, warning signs**, and emergency actions.

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Note:

- Creating tsunami evacuation plans for coastal areas with **clear signage, maps, and regular drills.**

➢ **Institutional Framework:** Coordinating national, state, and local agencies, including **NDMA** and **SDMAs**, for effective tsunami mitigation and response.

➢ **Response and Recovery:** Developing tsunami response and recovery plans with search and rescue, **medical aid, shelters, and food and water** distribution.

- Establishing strategies for reconstructing affected areas, including financial and logistical support for **rebuilding homes, infrastructure, and livelihoods**.

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Note:

Miscellaneous

Highlights

- *Dr. Manmohan Singh*
- *Contributions of Sir Isaac Newton*
- *Birth Anniversary of Chaudhary Charan Singh and National Farmers' Day 2024*
- *Tabla Maestro Zakir Hussain*

Dr. Manmohan Singh

Why in News?

Prime Minister Narendra Modi paid tribute to **Dr. Manmohan Singh,** the **former Prime Minister** and key architect of the **1991 economic reforms**, following his passing on **26th December 2024.**



Who Was Dr. Manmohan Singh?

- **Early Life:** Dr. Manmohan Singh born on **26th September 1932** in Gah, Punjab (now in Pakistan), his life was shaped by the aftermath of **Partition of India and Pakistan in 1947**, which led his family to **migrate to India**.
  - He pursued higher education in economics, earning a Bachelor's and Master's degree from Panjab University and later studying at **Cambridge** and Oxford, where he received a D Phil in Economics.
  - His doctoral thesis focused on **India's export performance between 1951–1960,** laying the foundation for his future contributions to the Indian economy.
  - Singh held teaching positions at Panjab University and the Delhi School of Economics, shaping future policymakers.
- **Literary Contributions:** *India's Export Trends and Prospects for Self-Sustained Growth.*
- **Economic Administration:** Held critical government positions, including **Chief Economic Advisor, Secretary of Economic Affairs, Governor of the Reserve Bank of India, and Chairman of the University Grants Commission.**
  - As RBI Governor (1982–1985), Singh pushed for **financial stability and policy discipline.**
- **1991 Economic Reforms:** As Finance Minister during the **1991 balance of payments crisis** (**foreign exchange reserves** were just adequate to finance 15 days of imports)**, then Prime Minister P.V. Narasimha Rao,** along with **Finance Minister Dr. Manmohan Singh,** initiated the **LPG reforms (Liberalization, Privatization, and Globalization)** (also known as **Rao-Manmohan Model).**
  - Dr. Manmohan Singh implemented key reforms, including the **devaluation of the rupee to boost exports** and dismantling the **License Raj to reduce industrial bottlenecks.**
  - He also **liberalized foreign investment policies** to attract global capital, which helped **stabilise and grow India's economy.**
- **Contributions as Prime Minister (2004–2014):** India's **14th Prime Minister,** Dr. Manmohan Singh, served as **India's third-longest-serving Prime Minister**, after

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Note:

Jawaharlal Nehru and Indira Gandhi (excluding PM Narendra Modi, who is currently serving his third term). He was known for balancing coalition politics with effective governance.

- India experienced sustained economic growth, with the **economy growing at 8-9% annually** during his first term.
  - India emerged as the **world's second-fastest growing major economy in 2007** and Dr. Singh steered India through the 2008 global financial crisis.
- Key legislations such as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)of 2005 Right to Information Act (RTI) of 2005, and the National Rural Health Mission (NRHM) of 2005 were passed during his first tenure.
- The Right of Children to Free and Compulsory Education Act of 2009, Right to Education Act (RTE) of 2009, National Food Security Act (NFSA) 2013 and Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act of 2013 were important legislations of his second term, focused on equity and justice.

➢ **Foreign Policy and Global Relations:** Singh played a key role in India–United States Civil Nuclear Agreement (2008), which facilitated **civilian nuclear cooperation with the US and other countries.**

- Dr. Singh represented India at various international forums, leading delegations to the Commonwealth Heads of Government Meeting in Cyprus **(1993)** and the **World Conference on Human Rights in Vienna (1993).**

➢ **Awards:** Padma Vibhushan (1987), the **Jawaharlal Nehru Birth Centenary Award** (1995), and multiple **Finance Minister of the Year awards** from Asia Money (1993, 1994) and Euro Money (1993).

- He also won the **Adam Smith Prize** (1956) and the **Wright's Prize** (1955) from the University of Cambridge.



What Lessons Can Be Drawn from Dr. Manmohan Singh's Leadership?

➢ **Academic Rigor Meets Policy Pragmatism:** Singh's grounding in economics ensured that his decisions were **informed by empirical evidence and theoretical rigor**, making his policies both effective and sustainable.

- His belief in **dialogue and education** translated into a consultative leadership style, where he was **approachable and open to ideas** from diverse quarters.

➢ **Balancing Pragmatism with Principles:** He emphasized **gradual, socially acceptable reforms,** such as the carefully phased **1991 economic liberalization, to minimize disruptions.**

➢ **Commitment to Equity:** Singh championed inclusive growth through **rights-based initiatives** like the **National Rural Employment Guarantee Act** and the **Right to Education,** even while supporting **market-oriented reforms.**

➢ **Integrity and Ethical Leadership:** Known for his strong moral compass, Singh maintained **integrity**

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Note:

in a system prone to corruption, earning respect across political lines.

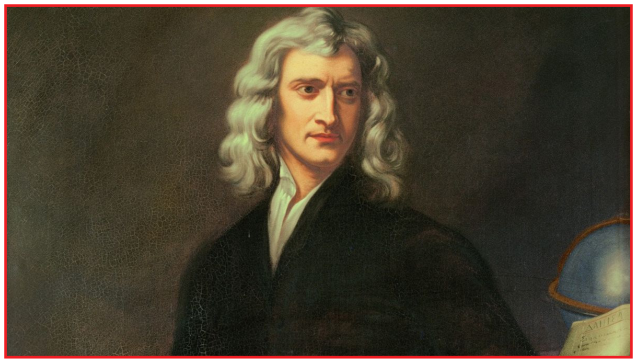
- His readiness to resign over ethical issues, like the **Harshad Mehta Stock market scam (1992),** underscored his commitment to principles.

- **Strengthening Institutions:** Singh believed in empowering institutions like the **RBI** and the **Planning Commission**, ensuring that their policies were both independent and aligned with national goals.
  - His tenure saw systemic changes like introducing **service taxes, abolishing ad hoc treasury bills,** and modernizing **India's tax structure,** which outlived his time in office.
- **Leadership in Adversity:** Despite facing political challenges, Singh maintained a calm, focused approach. His dignified handling of political setbacks, including the United Progressive Alliance defeat in 2014, solidified his legacy as a respected leader.

Contributions of Sir Isaac Newton

Why in News?

Sir Isaac Newton, born on **25th December 1642**, is one of history's most influential scientists. On his **382nd birth anniversary**, it is important to reflect on the groundbreaking contributions made to science, which continue to shape the understanding of the world today.



Who was Isaac Newton?

- **Early Life:** Isaac Newton was born in Woolsthorpe, England. He attended Trinity College, Cambridge, where he developed interests in mathematics, optics, physics, and astronomy.
  - Upon graduating, he became a professor at Cambridge and later held the prestigious second **Lucasian Chair of Mathematics**.
    - The Lucasian Chair of Mathematics, established in 1664 by **King Charles II** at Cambridge University, is one of the **most prestigious academic positions in the world.**
  - In 1705, Queen Anne (Queen of Great Britain) knighted Isaac Newton, giving him the title **"Sir."**
- **Contributions of Newton:**
  - **Laws of Motion:**
    - **First Law (Inertia):** Objects remain at rest or in uniform motion unless acted upon by an external force.
      - This principle is foundational in modern physics, explaining everything from **car crashes to satellite motion in space.**
    - **Second Law (Force and Acceleration):** Newton established that the force on an object is equal to its mass multiplied by its acceleration **(F=ma).**
      - This principle is applied in engineering, aerospace, and vehicle design to help **structures and machines withstand forces**.
    - **Third Law (Action and Reaction):** For every action, there is an equal and opposite reaction.
      - This law underpins **rocket propulsion** and everyday activities like walking.
  - **Gravity (g) and Gravitation (G):**
    - **Gravity:** Sir Isaac Newton discovered the existence of **gravity** in the late 1660s.
      - Gravity is a force by which a planet or other body draws objects toward its center.
    - **Universal Law of Gravitation:** Newton identified that the **gravitational force between two objects** is directly proportional to the **product of their masses** and **inversely proportional to the square of the distance between them,** meaning **gravity weakens as objects move further apart.**

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Note:

- His work revolutionized the understanding of planetary motion and the forces that govern the universe.
- This law explains planetary motion and is vital for satellite orbits, and **space exploration.**

- **Optics:** His research on the **nature of light** led to the discovery that **white light is a combination of different colors,** which he demonstrated using a prism (three-dimensional solid object).
- **Reflecting Telescope:** To solve the problem of **chromatic aberration** (color distortion) in telescopes that used lenses, **Isaac Newton created the reflecting telescope** in 1668.
  - By **substituting the primary lens with a mirror,** he was able to eliminate **chromatic aberration** and enhance **image clarity.**
- **Mathematics:** As a mathematician, Newton is credited with developing ***calculus,*** alongside **Gottfried Wilhelm Leibniz,** a tool that greatly impacted science and engineering.

- **Notable Works:** ***Philosophiae Naturalis Principia Mathematica,*** also known as ***Principia,*** published by Isaac Newton in 1687, laid the foundations of **classical mechanics** (study of the motion of objects and the forces).
  - Newton spent decades on **alchemy (related to the study of transforming base metals into gold),** while unsuccessful, his alchemical work influenced his discoveries in optics and the understanding of matter, **blending chemistry with physics.**
- **Legacy:** The **Isaac Newton Medal and Prize** is an annual award given by the **Institute of Physics (IOP),** a society for physics in the UK and Ireland, to recognize **outstanding contributions to physics.**

Birth Anniversary of Chaudhary Charan Singh and National Farmers' Day 2024

Why in News?

Recently, **National Farmers' Day (Kisan Diwas)** was celebrated on **23rd December** 2024 to **honor farmers** and commemorate the **birth anniversary** of **Sri Chaudhary Charan Singh**.

- Known as the **'Kisan Leader,'** his birth anniversary is celebrated as **'Kisan Diwas'** since **2001** for his contributions to **Indian agriculture and rural development**.

What are the Key Facts Related to Chaudhary Charan Singh?

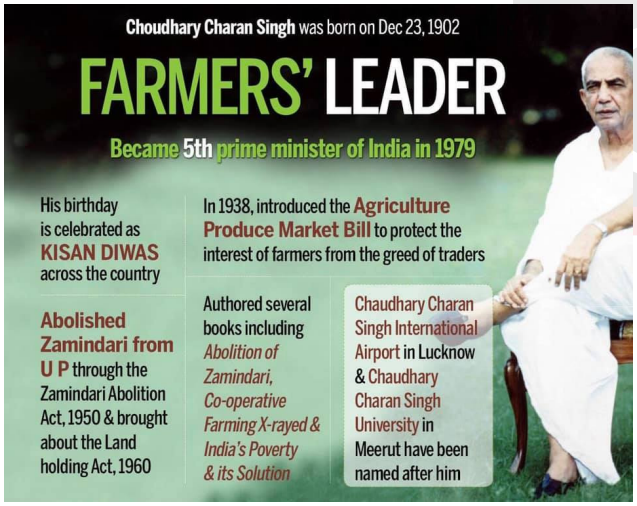
- **About:**
  - Born in 1902 at Noorpur, Meerut, Uttar Pradesh, he was an **Indian politician** and a **freedom fighter** who served as the 5th **Prime Minister of India** (1979-80).
  - He also served as **Deputy Prime Minister** (January-July 1979) and **Chief Minister** of Uttar Pradesh twice.
  - He represented **Chhaprauli** in the U.P. Legislative Assembly (1937, 1946, 1952, 1962, 1967) and later as MP for **Baghpat**.
- **Key Contributions:**
  - He drafted the **Debt Redemption Bill, 1939**, relieving peasants from moneylenders and was instrumental in the **Land Holding Act, 1960**, lowering land ceiling limits.
  - He advocated for **Minimum Support Price (MSP),** introduced the **Consolidation of Holdings Act (1953)** and **UP Zamindari and Land Reforms Act (1952)** to benefit the landless.
  - He proposed the **Agricultural Produce Marketing Bill (1938)**, creating an agri-market infrastructure.
  - He elevated the **Rural Development Department** to a **Ministry** and played a crucial role in establishing **NABARD**.
    - He promoted **decentralisation, grassroots governance**, and **local economic autonomy**.
- **Social Contribution:**
  - He followed **Mahatma Gandhi** in a non-violent struggle for independence from the British Government and was imprisoned several times.
  - He advocated for **social justice** by **opposing caste divisions**, promoting **inter-caste marriages**, and **supporting quotas for agriculturists' dependents**, aligning with **BR Ambedkar's** vision of integrated social and economic reforms.

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Note:

- He authored influential books like ***'Abolition of Zamindari', 'Co-operative Farming X-rayed', 'India's Poverty and its Solution', 'Peasant Proprietorship or Land to the Workers'*** and ***'Prevention of Division of Holdings Below a Certain Minimum'.***

- **Relevance:**
  - Today's Initiatives like **Doubling Farmers' Income, MSME promotion, Panchayati Raj** and **ethical administration** are inspired by his visionary thoughts.
- Recently, in 2024 the government has honored him with the prestigious **Bharat Ratna,** along with 4 other awardees- **Karpoori Thakur, Mankombu Sambasivan (MS) Swaminathan, Pamulaparthi Venkata (P. V.) Narasimha Rao, Lal Krishna Advani.**
  - The government renamed the **Lucknow Airport** in 2008 as **Chaudhary Charan Singh International Airport** in his honour.
- He passed away on **29th May 1987**. His memorial in New Delhi is called **Kisan Ghat.**



What are the Related Initiatives for Farmers?

- PM-KISAN
- National Mission for Sustainable Agriculture
- Pradhan Mantri Krishi Sinchayee Yojana
- Rashtriya Krishi Vikas Yojana (RKVY).
- Nutrient Based Subsidy (NBS) Programme
- Rashtriya Gokul Mission
- Pradhan Mantri Fasal Bima Yojana
- Paramparagat Krishi Vikas Yojana
- Kisan Credit Card

Tabla Maestro Zakir Hussain

Why in News?

Recently, **Zakir Hussain**, the legendary **tabla maestro**, passed away due to complications from **Idiopathic Pulmonary Fibrosis (IPF)**.

What are Key Points about Zakir Hussain?

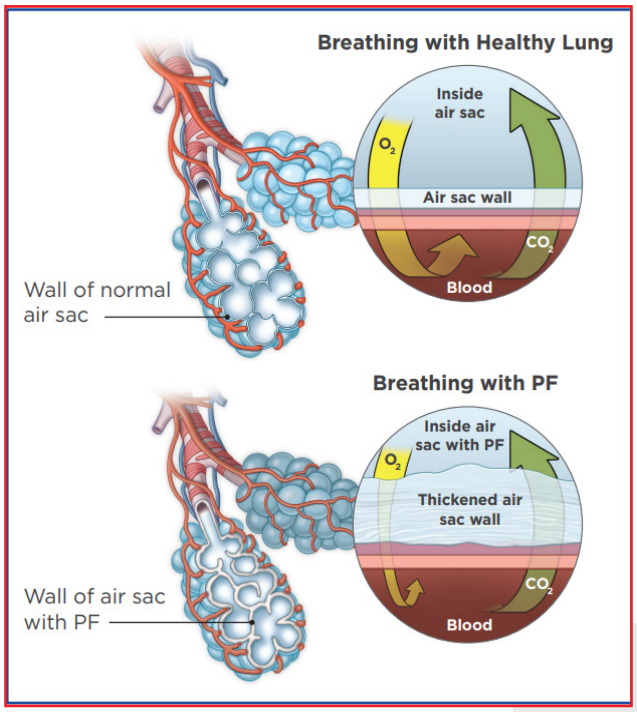
- **Early Life:** Zakir Hussain, born on **9th March 1951**, was the son of the legendary tabla maestro **Ustad Alla Rakha**.
  - He began his tabla training at the **age of seven.**
- **Contributions**: His collaboration with Western musicians, especially the **1973 project** with **English guitarist John McLaughlin, Violinist L. Shankar, and percussionist T.H. 'Vikku' Vinayakram**, brought Indian classical music to the global stage.
- **Awards:** He won **four Grammy Awards**, including three at the **66th Grammy Awards in 2024**. He also received **Padma Shri (1988), Padma Bhushan (2002), and Padma Vibhushan (2023).**

What is Idiopathic Pulmonary Fibrosis (IPF)?

- **About:** IPF is a **chronic lung disease** which causes the **air sacs** in the lungs to become **scarred and fibrous**, disrupting their ability to exchange oxygen efficiently.
  - The **tissues around alveoli** in the lungs become **thick and stiff.**
    - Alveoli are **small air sacs** at the end of **bronchioles** that **exchange oxygen and carbon dioxide** with the bloodstream.
- **Cause:** The exact cause of IPF is **unknown**, hence the term "idiopathic" which means **unexplained.**
- **Risk Factors**: IPF is more **common in males** and in **current or former smokers**. It most commonly affects **adults over the age of 50**.
  - Other risk factors include **genetic factors**, exposures such as cigarette smoking, and viral infections.

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Note:



Tabla

- **About:** The **Tabla** is a pair of **vertical drums** used in **Hindustani classical music**, consisting of two vertical drums: the **Tabla** (right) and the **Bayan** or **Dagga** (left).
  - Tabla is a **percussion instrument** called **awanad/ avanaddha vadya**.
  - **Amir Khusrau** is believed to have **invented Tabla**.
- **Making of Tabla**: The **Tabla** has a **wooden body** covered with **animal skin**.
  - The center of the Tabla's skin is covered with **syahi paste**, which helps in tuning the drum.
  - The **Bayan** has a **clay or metal body** and is also covered with **animal skin with syahi paste.**
- **Musical Role**: The Tabla is primarily used as an **accompaniment** to **vocal** and **instrumental Hindustani music** as well as various **dance forms** in northern India.
- **Prominent Musicians**: Famous tabla players include **Ustad Alla Rakha Khan**, his son **Zakir Hussain**, **Shafat Ahmed**, and **Samta Prasad**.

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Note:

Rapid Fire Current Affairs

Highlights

- *Siang Upper Multipurpose Project*
- *Excluding Settlements From Periyar Tiger Reserve*
- *Smart Classrooms Under the Smart Cities Mission*
- *Needle-Free Shock Syringe*
- *PM Cares Funding Dropped in 2022-23*
- *RBI Sets Up Committee for Ethical AI in Finance*
- *Conjugal Visits in Prisons*
- *Kashmir's Papier Mache Revives the Dodo*
- *Increased Regulatory Action on Nidhi Companies*
- *SLINEX 2024*
- *Pradhan Mantri Rashtriya Bal Puraskar 2024*
- *58 Lakh SVAMITVA Property Cards Distribution*
- *Tau Protein*
- *Canary Islands*
- *50,000-Year-Old Baby Mammoth Remains Uncovered*
- *Denali Fault*
- *Centre Amends Conduct of Election Rules, 1961*
- *125th Birth Anniversary of Sardar Udham Singh*
- *Speed of Light*
- *Human Interaction Threat to Lion-Tailed Macaques*
- *Jallikattu*
- *National Consumer Day 2024*
- *Collegium Assesses High Court Candidates*
- *US Territorial Acquisitions and Interest in Greenland*
- *Extradition Request for Sheikh Hasina*
- *Marburg Virus Disease*
- *Meat- Eating Squirrels*
- *Undersea Cable Network*
- *US Eradicated Northern Giant Hornet*
- *Green Deposits*
- *72nd plenary of the North Eastern Council*
- *Flowers Pollination by Large Carnivore*
- *Elephant Parade in Thrissur Pooram*
- *VIRAASAT*
- *INS Nirdeshak*
- *Centralized Public Grievance Redress and Monitoring System*
- *Pangolin*
- *RBI Enhances Collateral-Free Loan for Farmers*
- *SEBI Introduced Specialised Investment Funds (SIFs)*
- *NIA can Probe Linked Non-Scheduled Offences: SC*
- *Global Decline in Diarrhoeal Disease Deaths*
- *Marine Heat Wave Killed 4 Million Murre Seabirds*
- *Wroughton's Free-Tailed Bat*
- *Kisan Kavach*
- *Kailash Manasarovar Yatra*
- *Pollution in Hindon River*
- *29th Delhi CII Summit*
- *Opening of Moldova's Embassy in India*
- *Composite License for Insurer*
- *Jalvahak Scheme*
- *Sri Potti Sriramulu*
- *Tribute to Sardar Vallabhbhai Patel*
- *Cyclone Chido in Mayotte*
- *Anniversary of Mirza Ghalib*
- *National Energy Conservation Day 2024*
- *Malibu Wildfire*
- *Indian Light Tank (ILT) Zorawar*
- *Gukesh Won 2024 FIDE World Chess Championship*
- *Manganese Contamination Causing Cancer*
- *Disease X*

Siang Upper Multipurpose Project

Recently, **India** raised concerns over China's approval of the world's largest hydroelectric dam on the **Brahmaputra**, spurring the planning of India's **Siang Upper Multipurpose Project**.

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Note:

- **About:**
  - It is located in the **Upper Siang District**, **Arunachal Pradesh**, near the **Siang River** (a major tributary of the **Brahmaputra River**).
  - The **Siang River**, originating near **Mount Kailash** in Tibet as the **Yarlung Tsangpo**, flows eastward for over 1,000 km.
    - It forms a horseshoe bend around **Namcha Barwa** peak before entering Arunachal Pradesh.
- In Assam, it merges with the **Dibang and Lohit** rivers to become the Brahmaputra.
- **Strategic Importance for India**:
  - Designed to counter the impact of China's **hydroelectric projects** on the **Yarlung Tsangpo (Brahmaputra)**, which could affect **India's water security**.
  - Reduces the risk of **downstream flooding**, especially due to **upstream water releases by China**.
  - The project will have an **installed capacity** of **11,000 MW**, making it a significant source of **hydroelectric power**.
  - Ensures **year-round river flow**, especially during lean seasons, improving water availability and supporting agriculture.
  - However, many residents of the **Adi tribe in Upper Siang and Siang districts** fear losing their farmlands and homes due to the proposed project.

Read More: China Builds New Dam in Tibet.

Excluding Settlements From Periyar Tiger Reserve

Recently, a team has been constituted by the **National Board for Wildlife (NBWL)** to inspect **Thattekad Bird Sanctuary** and the **Angel Valley and Pamba Valley settlements of Periyar Tiger Reserve**.

- **Angel Valley and Pamba Valley Settlements (Periyar Tiger Reserve)**:
  - Located in Kerala, near the **Mookkenpetty** causeway and **Kanamala bridge**, these settlements arose under the **'Grow More Food' initiative** of 1947-48 (after **World War II**) for ex-servicemen and their descendants.
  - The **Periyar Tiger Reserve** is renowned for its **biodiversity**, including **Bengal Tigers**, **Indian Elephants**, and diverse flora and was recognized in **2022** as **India's best-managed tiger reserve**.
  - Residents face hardships due to **wildlife incursions** and forest regulations, prompting protests and demands for de-notification of **5.02 sq km** of inhabited areas.
- **Thattekad Bird Sanctuary**:
  - Situated near **Kothamangalam** on the **Periyar River** and is home to **280+ bird species**.
  - Established in 1983, it is named after **Dr. Salim Ali** (India's renowned ornithologist and bird conservationist), who deemed it the **richest bird habitat in peninsular India**.
  - Proposed changes include **excluding 897.25 ha** of inhabited land and **adding 1,016.94 ha** of forest from the **Munnar Division**.

Read More: Conserving Protected Areas in India

Smart Classrooms Under the Smart Cities Mission

A study by the Indian Institute of Management, Bangalore, revealed that the **Smart Cities Mission (SCM)** has improved education quality through **smart classrooms**.

- **Smart Cities Mission:** It was launched in 2015 by the **Ministry of Housing and Urban Affairs** and aims to enhance infrastructure, quality of life, and sustainability in cities.
  - The **'SAAR' (Smart Cities and Academia towards Action and Research)** platform, launched in 2022, connects academia and government to document and **research urban initiatives under the SCM.**
- **SCM and Education:** The IIM Bangalore study shows that **smart classrooms** under the SCM **have increased enrolment by 22% across 19 cities** from 2015-16 to 2023-24.
  - 71 cities have implemented around 9,500 smart classrooms in around 2,400 government schools.

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Note:

- **Karnataka leads with 80 smart classroom projects,** followed by Rajasthan (53), Tamil Nadu (23), and Delhi (12). West Bengal has only two projects.

❍ Teacher training has improved comfort with smart classrooms, especially in senior secondary schools.

SMART CITIES MISSION

About

- **Launched:** 2015
- **Nature:** Centrally Sponsored
- **Nodal Ministry:** Ministry of Housing & Urban Affairs
- **Implemented through:** Special Purpose Vehicles (SPVs) at city level
- **Mission Deadline:** Extended to June 2023
- **Coverage:** Developing 100 selected cities as Smart Cities

Six Fundamental Principles

- Citizen at the core
- More from Less
- Cooperative and competitive federalism
- Integration, innovation & sustainability
- Technology as means, not the goal
- Convergence

SMART SOLUTIONS

E-Governance and Citizen Services
- Public Information, Grievance Redressal
- Electronic Service Delivery
- Citizen Engagement
- Citizens-City's Eyes and Ears
- Video Crime Monitoring

Energy Management
- Smart Meters & Management
- Renewable Sources of Energy
- Energy Efficient & Green Buildings



Waste Management
- Waste to Energy & fuel
- Waste to Compost
- Waste Water Treatment
- Recycling and Reduction of Waste

Urban Mobility
- Smart Parking
- Intelligent Traffic Management
- Integrated Multi-Modal Transport

Water Management
- Smart Meters & Management
- Leakage Identification, Preventive Maintenance
- Water Quality Monitoring

Others
- Tele-Medicine & Tele Education
- Incubation/Trade Facilitation Centers
- Skill Development Centers

60% projects have been completed so far

Challenges

- **Managing Finance:** Difficulty in mobilising funds, transferring them to SPVs, and using them efficiently
- **Urban Problems:** Like air pollution, road congestion & decline in public transport
- **Policy Issues:** Like hindrances in getting environment clearances
- **Data privacy and security**
- **Lack of Center-State Co-ordination**

Way Ahead

- **Decentralisation:** Planning at Municipal & state level for better implementation
- **Policy Issues:** Like red-tapism, environmental clearances need to be taken care of
- **PPP Model:** For better administrative & technological capabilities
- **Integrated Approach:** For holistic development of transportation, energy, housing
- **Promote Citizen Engagement**

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Read more: Smart Cities Mission

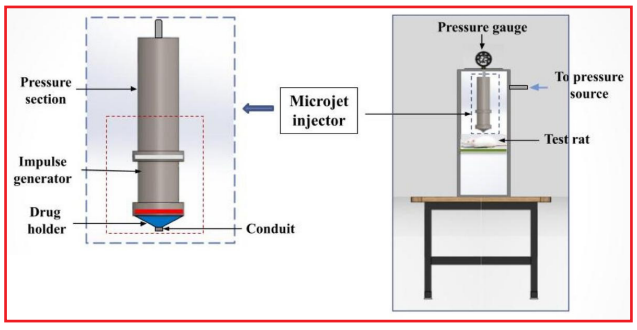
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Note:

Needle-Free Shock Syringe

Researchers at **Indian Institute of Technology (IIT) Bombay** have developed a **shockwave-based, needle-free syringe** that ensures painless drug delivery, reducing skin damage and the risk of infection.

- The shock syringe uses **high-energy shockwaves** to deliver drugs through the skin **without the need for needles,** offering a painless alternative to traditional injections.
  - A shockwave is a **pressure wave** that moves faster than sound through a medium like air, water, or solids. It forms when an object or force causes a rapid pressure change, traveling through the surrounding environment.
  - The device consists of three sections: **driver, driven, and drug holder,** which create a **shockwave-driven microjet for drug delivery.**
- The shock syringe is designed with a **micro shock tube** that uses pressurized **nitrogen gas** to create a **microjet of liquid drug,** which travels faster than sound to penetrate the skin.
  - The shock syringe demonstrated effective delivery of drugs in rats, with deeper tissue penetration and minimal skin damage compared to regular needles.
- The shock syringe could speed up **immunization drives like** Mission Indradhanush (MI) and reduce bloodborne disease risks from needle-stick injuries.
  - It is cost-effective, designed for over 1000 uses with only nozzle replacements needed.



Read more: Incovacc, Intranasal Covid-19 Vaccine

PM Cares Funding Dropped in 2022-23

A study of the **Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund (PM-CARES Fund)**'s audited statements reveals that voluntary contributions dropped to **Rs 912 crore in 2022-23,** the lowest since its establishment in **March 2020**.

- Contributions peaked at **Rs 7,184 crore in 2020-21**, then fell to **Rs 1,938 crore in 2021-22** as the Covid-19 threat diminished.

CONTRIBUTIONS TO THE FUND

(In Rs crore)

Year	Voluntary	Foreign
2019-20	3,076.85	0.39
2020-21	7,183.77	494.93
2021-22	1,896.76	40.12
2022-23	909.64	2.57
Total	**13,067.02**	**538.01**

Source: pmcares.gov.in

PM CARES Fund

- **About:**
  - It is a **Public Charitable Trust** registered on **27th March 2020** under the **Registration Act, 1908**.
- **Objectives:**
  - It aims to **provide relief or assistance** including **public health crises such as** Covid-19, natural disasters**, or man-made calamities**, and facilitate the development of healthcare, pharmaceutical infrastructure, and other essential facilities.
  - It offers **financial assistance, grants, or other necessary support** to affected populations.
- **Members and Governance:**
  - **Chairperson:** Prime Minister (ex-officio).

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Note:

- **Trustees:** Defence, Home, and Finance Ministers.
- **Additional Trustees:** Appointed by the Chairperson; serve on a non-profit basis.

➢ **Tax Exemptions:**

- Contributions are eligible for **100% tax exemption** under **Section 80G** of the **Income Tax Act, 1961** and are considered eligible **Corporate Social Responsibility (CSR)** expenditures under the **Companies Act, 2013.**
- It is also exempt under the **Foreign Contribution Regulation Act (FCRA)** to receive foreign donations, similar to the **Prime Minister's National Relief Fund (PMNRF)**.

➢ **Criticisms:**

- **Transparency**: Not audited by **Comptroller and Auditor General (CAG)** and exempt from **Right to Information (RTI) Act)**.
- **Purpose Duplication**: Overlaps with **PMNRF**.
- **Underutilization**: Funds remain unspent despite needs (eg: Rs 202 crore ventilator refund).
- **Foreign Donations**: Raises concerns about external influence on domestic policymaking.

Read More: PM - CARES Fund

RBI Sets Up Committee for Ethical AI in Finance

Recently, **RBI has established an eight-member committee** to develop a **Framework for Responsible and Ethical AI (FREE-AI)** adoption in the **financial sector**.

➢ The committee is chaired by **Professor Pushpak Bhattacharyya** from IIT Bombay and consists of **specialists from academia, government, and industry**.

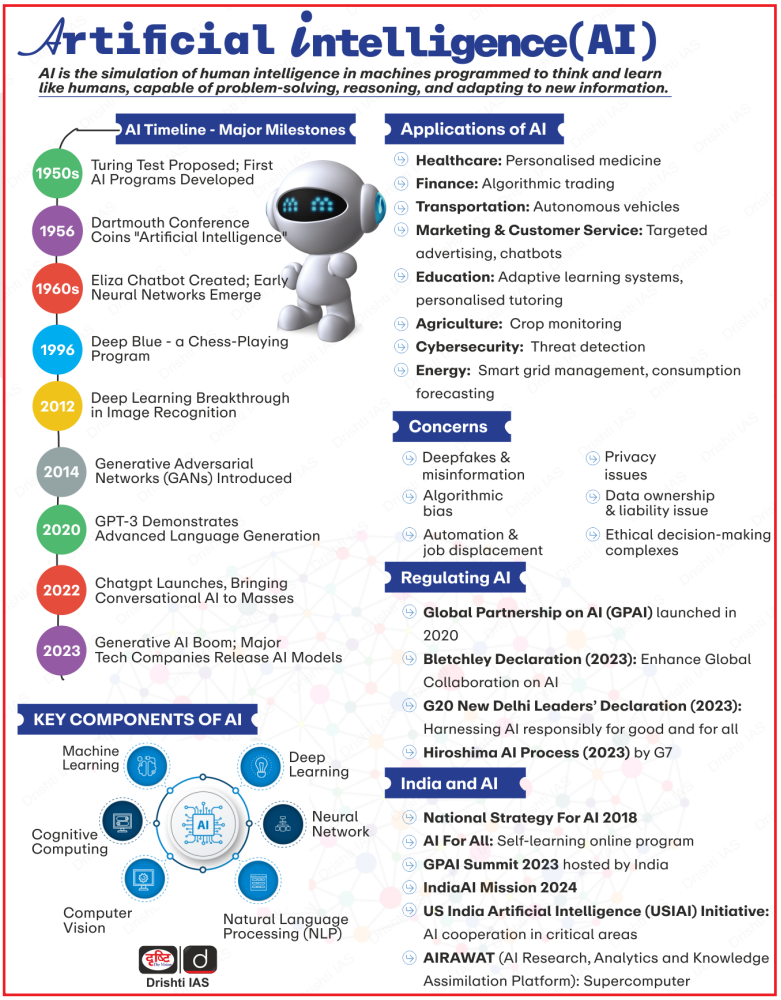
➢ **Objectives** of the committee include:

- Assessing the current **global and Indian adoption** of AI in financial services.
- **Reviewing regulatory and supervisory approaches** to AI in the financial sector worldwide.
- Identifying potential **risks of AI** in finance, recommending evaluation, mitigation, and monitoring frameworks.

➢ The committee will recommend a **governance framework** for the ethical adoption of AI in financial institutions such as **banks, Non-Banking Finance Companies (NBFCs), and FinTechs**.

➢ The initiative aligns with the **RBI's focus** on incorporating AI responsibly within India's financial ecosystem.

➢ The **FinTech Department** at the **Central Office** of the **Reserve Bank of India** will offer secretarial assistance to the Committee.



Read More: RBI's Five Strategic Priorities for India's Financial Future

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Note:

Conjugal Visits in Prisons

The Delhi Government is reconsidering a proposal to **allow conjugal visits for prisoners.**

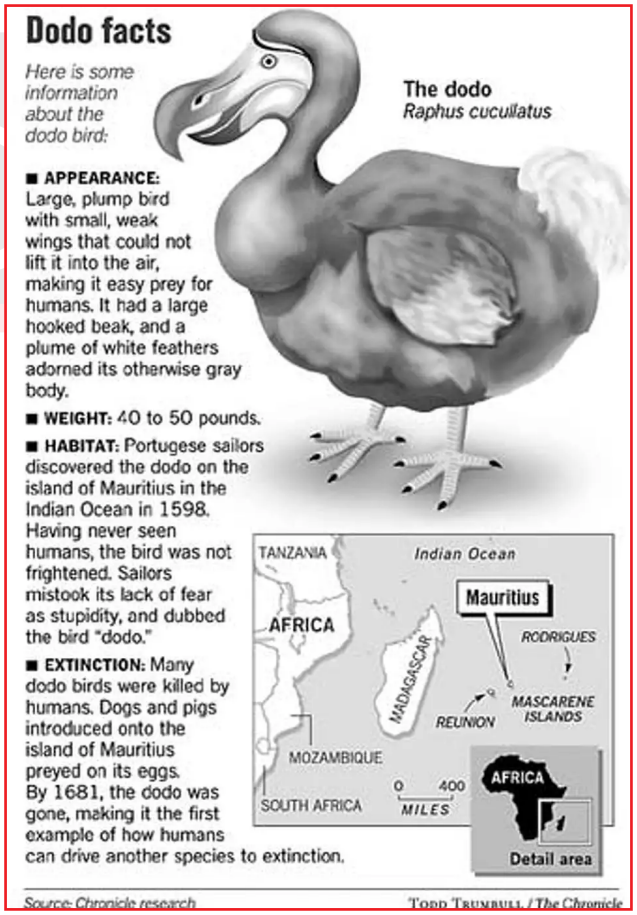
- **Conjugal Visits:**
  - It is a **private family visit** where **inmates spend time,** including intimate moments, with their legal spouses within the **prison**.
  - It promotes **inmate rehabilitation** and **long-term recovery,** enhancing **psychological well-being** and **sustaining marital ties of prisoners.**
- **Judicial Landmarks:**
  - Punjab & Haryana **High Court** in 2014 has upheld the **right to procreation (reproduction)** for prisoners.
  - Madras High Court in 2018 allowed **parole** for conjugal relations.
  - In July 2023, Justice S.M. Subramaniam of the Madras High Court urged the Tamil Nadu government to **consider allowing conjugal relations for prisoners** within prison precincts.
- **Other Countries:** Conjugal visits are **allowed in some US states** but not federal prisons.
  - In Europe, countries like **Spain, France, Sweden, and Denmark permit such visits,** with **Spain offering monthly and Sweden up to 9 hour sessions.**

Read More: Open Prisons in India

Kashmir's Papier Mache Revives the Dodo

Papier mache artisans in **Srinagar** are **crafting and exporting** large quantities of **dodo** figurines, primarily to **Mauritius** (where the dodo was native and is a national symbol) and **Europe** around Christmas 2024.

- **Dodo:**
  - The dodo ***(Raphus cucullatus***) is an **extinct (**since 1681**) flightless bird** that was **endemic to the island of Mauritius**, which is **east of Madagascar** in the Indian Ocean.
  - It belonged to the ***Columbidae family*** (doves and pigeons).
  - It became extinct due to **human activity** and the **introduction of invasive species** like pigs, rats, and cats, which preyed on its eggs and chicks.
- **Papier Mache Art:**
  - Papier mache, a **600-year-old handicraft in Kashmir**, involves the **use of paper pulp** to create colorful, intricately decorated objects.
  - This craft has its **origins to the 15th century** under **King Zain-ul-Abidin,** who invited **Central Asian artisans.**
  - Traditionally influenced by **Persian motifs,** the craft recently incorporated dodos, introduced around two decades ago, possibly by Mauritian tourists.
- **Other Crafts of Kashmir:**
  - Seven Kashmiri crafts, including **carpets, pashmina, sozni, kani shawls, walnut wood carving, khatamband,** and **papier mache**, have got **Geographical Indication (GI) tags.**



Read More: Cultural Exchange and Growth of Kashmir's Craft Industry, Human-induced Extinction of Dodo

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Note:

Increased Regulatory Action on Nidhi Companies

In 2024, the **Ministry of Corporate Affairs (MCA)** and **Registrars of Companies (RoCs)** significantly **intensified action** against **Nidhi companies** and **firms defaulting on beneficial ownership disclosures**.

- This was done to ensure financial transparency, curbs illicit activities in the non-banking sector, and strengthens corporate governance.
- RoCs issued 131 orders against Nidhis, a **72% rise from 2023,** with penalties ranging from Rs 10,000 to Rs 30 lakh.
- **Beneficial Ownership** refers to the individuals who **ultimately own or control a company**, even if the shares are held in another person's name.
  - Under the **Companies Act, 2013,** companies must disclose the identity of individuals who have **significant control or own 25% or more of the shares**.
- **Nidhi Companies** are **non-banking financial entities (NBFC)** that operate under **Section 406** of the **Companies Act, 2013.**
  - These companies are formed to **encourage savings and provide loans** exclusively to their **members.**
  - Nidhis are **not required to obtain an RBI license** but must adhere to strict disclosure and operational norms.
  - They are registered as **public limited companies** and include **"Nidhi Limited"** in their name.
  - They must maintain a minimum of **200 members** within a year and **Rs 20 lakh in net owned funds.**

Read More: Nidhi Companies

SLINEX 2024

Recently, the SLINEX 24 (Sri Lanka - India Exercise 2024) **was conducted at Visakhapatnam, India.** It is a **bilateral naval exercise** between India and Sri Lanka.

- The Sea Phase of the exercise included joint exercises by Special Forces of both the navies, **gun firings, communication drills, seamanship,** navigation evolutions, and helicopter operations, with the Indian side participating through **INS Sumitra**.
  - India and Sri Lanka have been conducting **SLINEX exercise since 2005.**
- India and Sri Lanka have a long history of cultural and economic ties **dating back over 2500 years.**
  - **India is Sri Lanka's largest trade partner in SAARC**, with bilateral trade reaching USD 5.5 billion in FY 2023-24. India exports essential goods while Sri Lanka benefits from the **India-Sri Lanka Free Trade Agreement.**
  - **Other India-SL Bilateral Exercise: Exercise Mitra Shakti** (Army).

Read More: Major Military Exercises of India

Pradhan Mantri Rashtriya Bal Puraskar 2024

Recently, the **President of India** conferred the awards on **17 children** (7 boys and 10 girls) during a ceremony held at **Rashtrapati Bhavan** on the occasion of **Veer Bal Diwas**.

- **Pradhan Mantri Rashtriya Bal Puraskar (PMRBP)**:
  - It is India's **highest civilian award for children**, celebrating their **exceptional achievements and abilities** in seven categories: **bravery, art and culture, environment, innovation, science and technology, social service, and sports**.
  - The awardees, aged **5-18 years**, are recognized for their inspiring contributions to the nation, receiving a medal, certificate, and citation.
  - The **Ministry of Women and Child Development organizes the awards** annually to recognize acts of extraordinary merit performed within the last two years of nomination.

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Note:

- The awards aim to encourage **young talent** and foster a tradition of **opportunity and recognition** for children's achievements.
  - **Hembati Nag**, a judo player from a Naxal-affected area, was awarded a silver medal at the **Khelo India National Games**, while 3-year-old **Anish Sarkar** was recognized as the youngest **FIDE-ranked** chess player.
- These achievements reflect **courage, innovation, and dedication** and serve as a foundation for **nation-building efforts by 2047**, the centenary of India's independence.

Read More: Pradhan Mantri Rashtriya Bal Puraskar

58 Lakh SVAMITVA Property Cards Distribution

Recently, **58 lakh SVAMITVA Property Cards** were distributed across **50,000 villages**, marking a significant milestone in **rural empowerment**.

- **SVAMITVA Scheme:**
  - **Launched on 24th April 2020**, the **Scheme** aimed at creating a **Record of Rights** for rural property owners, focusing on **Abadi areas** (inhabited regions) using cutting-edge **drone** and **GIS technology**.
  - It follows a **Whole-of-Government approach**, involving multiple departments and stakeholders to enhance **financial inclusion**.
  - By validating property ownership, SVAMITVA ensures **better access to credit**, promotes **socio-economic stability**.
- **Key Achievements:**
  - **Drone Mapping Coverage**: Completed in **3.17 lakh villages**, mapping rural areas for property documentation.
  - **Property Card Distribution**: Over **2.19 crore property cards** distributed across **1.49 lakh villages**, granting legal property rights.
  - **Improved Governance**: Digitally validated records have enhanced **Gram Panchayat Development Plans (GPDPs)**, improving infrastructure planning.
  - **Women Empowerment**: Legal property ownership boosts women's **financial security** and decision-making power.
  - **Dispute Resolution**: Accurate mapping has reduced **property disputes** by clarifying land ownership and boundaries.

Read More: SVAMITVA Scheme

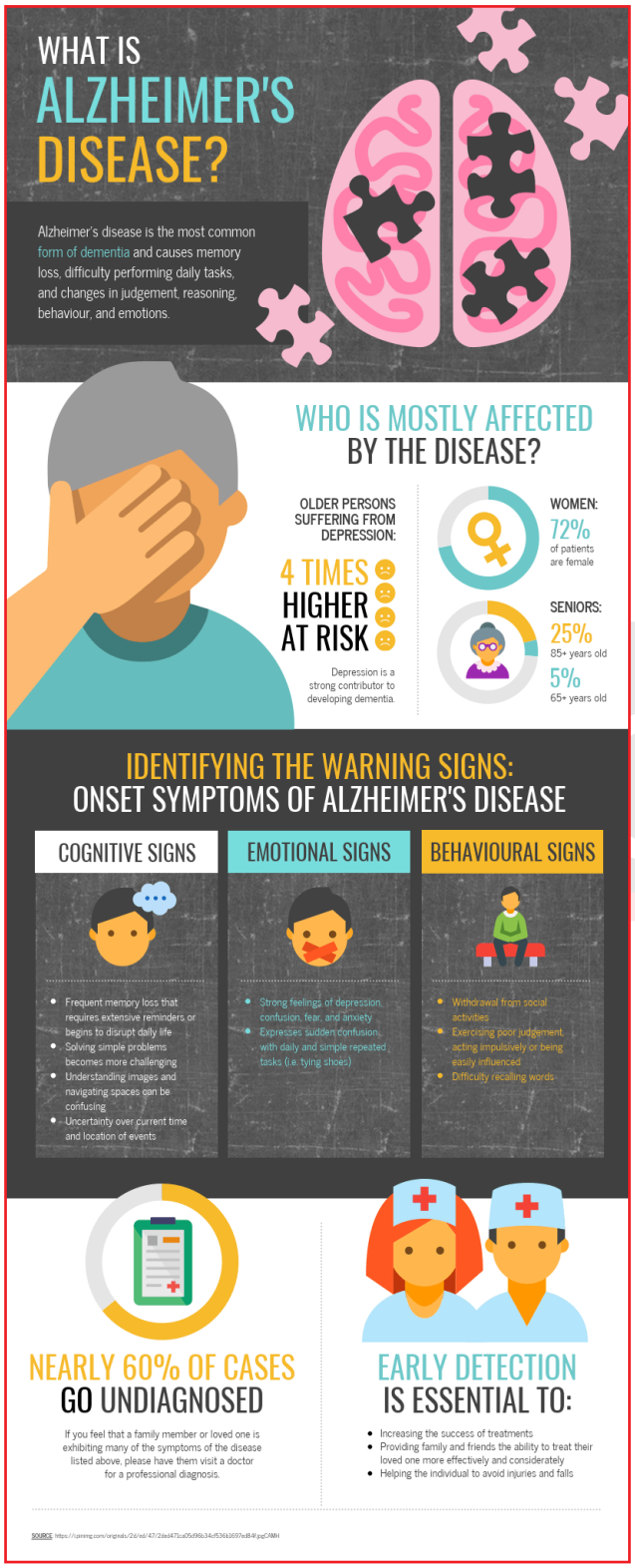
Tau Protein

A new study suggests **blocking the stress response pathway** in the brain could reverse **Alzheimer's symptoms** by preventing **tau protein** accumulation.

- Alzheimer's disease is a **progressive neurodegenerative disorder** causing **memory loss, cognitive decline, and behavioral changes.** It is the most common cause of dementia, responsible for 60-80% of cases.
- **Tau proteins** stabilize neurons, but in **Alzheimer's, they accumulate** and form **neurofibrillary tangles** that disrupt **neuron communication,** a characteristic of Alzheimer's disease, contributing to cognitive decline.
  - Blocking **toxic lipid synthesis** in the brain could **prevent tau buildup,** offering potential symptom reversal.
    - These toxic lipids are produced by **microglia** – brain immune cells that can either protect or worsen neurodegeneration. They damage neurons, accelerating neurodegeneration.
    - A stress response pathway activates microglia, leading to this toxic lipid production.
- While current treatments **delay cognitive decline,** they cannot halt disease progression. **Targeting the microglial stress response pathway** may offer more effective therapies.

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Note:



Read more: Alzheimer's Disease

Canary Islands

The Atlantic migration route, particularly from **Africa to Spain's Canary Islands,** which has become a gateway to Europe, has emerged as one of the deadliest migration paths in the world. In 2024, over **10,000 migrants lost their lives** attempting this journey.

- The route is fraught with dangers, including **strong ocean currents,** overcrowded and poorly equipped boats, and adverse weather conditions. These factors contribute to the high fatality rate.
- The Canary Islands, an **autonomous Spanish archipelago** in the **Atlantic Ocean,** are located about 62 miles west of Morocco (Africa), and are one of the **European Union's outermost regions.**
  - The main Canary Islands are Lanzarote, Fuerteventura, Gran Canaria, Tenerife, La Gomera, **La Palma,** and El Hierro.
  - The Islands have a subtropical climate with warm temperatures and mild seasonal variation.
- The **Canary Current** is a **cold ocean current** flowing southwest along Africa's northwest coast, named after the Canary Islands. Its presence contributes to the rainless conditions in the **Sahara Desert's** coastal region.



Read more: La Palma Island: Spain

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Note:

50,000-Year-Old Baby Mammoth Remains Uncovered

Recently, scientists have uncovered the carcass of a **50,000-year-old giant female baby mammoth named Yana**, found in **Russia** due to melting **permafrost.**

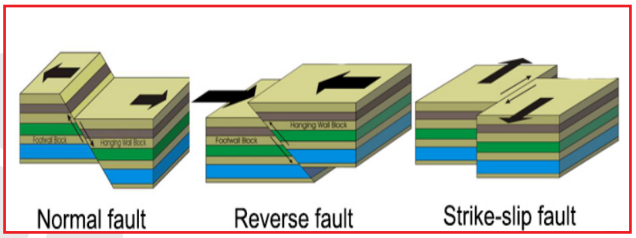
- **Mammoth** is a member of **an extinct group of elephants** found as fossils in **Pleistocene and Holocene deposits** (**Two epochs** that make up the **Quaternary Period**),on several continents.
  - By **4,000 years ago** they became extinct.
- **About Yana**: It was found in the **Batagaika crater in Siberia**, known as the **"gateway to the underworld"** due to its **increasing depth** from melting ice caused by global warming.
  - She **died at the age of one**, making it an exceptional find among **only seven mammoth carcasses** recovered worldwide.
  - The crater has also revealed remains of other ancient animals like **bison, horses, and dogs.**
- **Permafrost:** Soil or underwater sediment that remains **frozen below 0°C for more than two years,** with depths ranging from **a meter to as deep as 1,500 meters**.
  - **Permafrost** is common in **Arctic regions and mountain summits** and can contain frozen remains dating back **over 700,000 years**.

Read More: Woolly Mammoths

Denali Fault

A new research has revealed the origins of the **Denali Fault**, the **tectonic boundary** that gave rise to **Denali mountain in Alaska,** North America's highest mountain**.**

- The **Denali fault** was formed from the **collision** of an **oceanic plate** called the **Wrangellia Composite Terrane with the North American plate** between **72 million and 56 million years ago.**
  - The study also found evidence of **inverted metamorphism**, where **high-pressure rocks are positioned above low-pressure ones** due to tectonic activity.
- **About Fault: Fault or crack** gives rise to **Block mountains**. E.g., **Satpura and Vindhya mountains.**
  - **Block mountains** are formed when **large areas of land are broken and displaced vertically.** They are also known as **fault-block mountains.**
- **Types of Fault:**
  - **Strike-Slip Faults:** These faults occur when tectonic plates **slide horizontally** with **minimal vertical movement.** E.g., **Denali Fault**.
  - **Normal Faults:** These faults occur when **one rock block slides downward**, separating from the adjacent block. E.g., **East African Rift Valley.**
  - **Reverse Faults (Thrust Faults):** These faults occur when the **upper block moves up and over the lower block.**



Read More: Earthquake

Centre Amends Conduct of Election Rules, 1961

Recently, the **Ministry of Law and Justice** has amended **Rule 93 of the Conduct of Election Rules, 1961,** restricting public access to certain election-related documents.

- **Recent Amendment:**
  - This amendment follows a recommendation by the **Election Commission of India (ECI)** and impacts **Rule 93(2)(a),** which **earlier permitted public inspection of all election papers.**
  - The revised rule **now limits access to specific documents** listed within the framework.
- **Background of The Amendment:**
  - It was initiated by a **directive from the Punjab and Haryana High Court** to **ECI** to share all election-related documents, including **CCTV footage** from Haryana Assembly elections.

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Note:

- The **ECI highlighted concerns over voter privacy and potential misuse** of sensitive information.

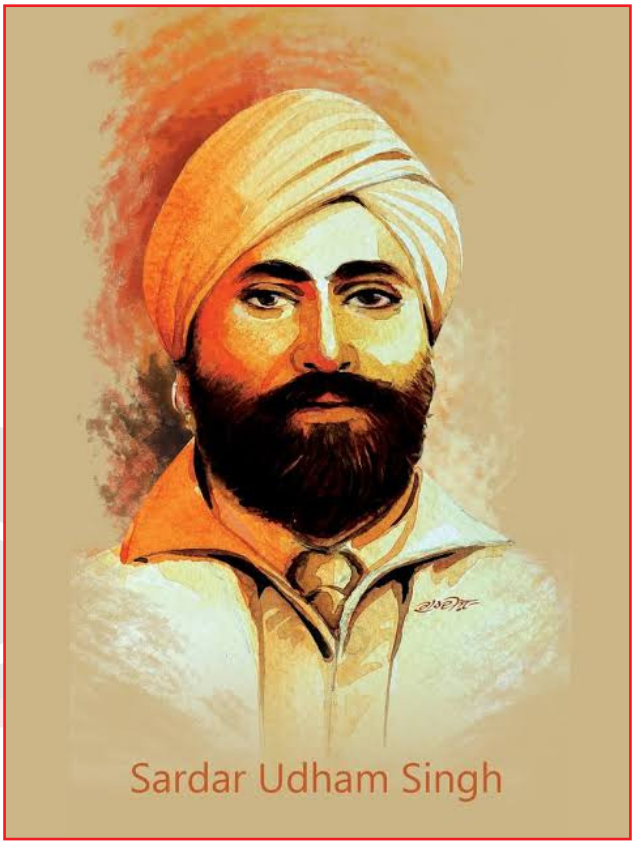
- **RTI Activists and opposition parties** argue the amendment **compromises transparency and accountability** in the electoral process.
- **Conduct of Election Rules, 1961:**
  - It provides a detailed framework for conducting elections in India, as per the **Representation of the People Act, 1951**.
  - These rules cover **candidate nominations, polling procedures, etc, ensure voter secrecy and electoral integrity, and define the duties of election officers**.

Read More: Rule 49MA of the Conduct of Election Rules - Drishti IAS

125th Birth Anniversary of Sardar Udham Singh

Recently, **Sardar Udham Singh's** birth anniversary was celebrated on 26th December, honoring his legacy as a symbol of India's relentless pursuit of justice for the **Jallianwala Bagh massacre**.

- **Birth and Early Life**: Udham Singh, born on **26th December 1899**, in Sunam, Sangrur district of Punjab, lost his parents early and grew up in the Central Khalsa Orphanage in Amritsar.
- **Jallianwala Bagh Massacre Witness**: Singh survived the **Jallianwala Bagh massacre** of 13th April 1919, where **British Brigadier General Reginald Dyer's** troops killed over 400 unarmed civilians under the regime of **Michael O'Dwyer**, Punjab's Lieutenant Governor.
- **Revolutionary Activities**: Deeply affected by the massacre, Singh joined the **Ghadar Party** in **1924** to mobilize Indians overseas against British rule.
  - He was imprisoned in **1927** for five years for possession of firearms.
- **Revenge and Execution**: On **13th March 1940**, Singh assassinated **Michael O'Dwyer** during a meeting at Caxton Hall in London, avenging the massacre.
  - He was hanged on 31st July 1940, at Pentonville Prison, London.
- **Legacy**: Revered as ***Shaheed-i-Azam***, Singh's remains were repatriated in 1974, and memorials, museums, and colleges honor his sacrifice in Punjab and beyond.
  - His actions symbolize unwavering resistance against colonial oppression.



Read More: Sardar Udham Singh

Speed of Light

The **speed of light**, a **fundamental constant in physics**, has been determined with increasing precision over centuries.

- The speed of light is the rate at which light waves **propagate through different materials.** In particular, the **speed of light in a vacuum** is defined as exactly **299,792,458 meters per second**.
  - Light's speed can vary when it propagates through different materials, depending on the **material's refractive index** (measure of bending of a light ray when passing from one medium to another).

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Note:

- Early estimates of the speed of light were based on **how long it took light to travel a known distance,** with measurements improving as instruments advanced.
- **Ole Roemer (1676)** was the **first to estimate the speed of light,** observing Jupiter's moons and their varying eclipse timings based on Earth's distance from Jupiter.
  - His estimate was 225,300 km/s, which was far from the modern value due to limited knowledge of Jupiter's distance.
- Modern measurements of the speed of light are conducted using l**aser beams and atomic clocks**, resulting in the current precise value.

Read more: Time Dilation in Early Universe

Human Interaction Threat to Lion-Tailed Macaques

The endangered **lion-tailed macaque (LTM)** faces threats from **increasing human interactions,** driven by **habitat encroachment and food provisioning**.

- Human-provided food causes **malnutrition, disease, dependency**, and increases risks of **road accidents** and human aggression.
  - LTM is highly **adaptable to human-altered environments** and frequently interacts with humans.



- **About Lion-tailed Macaque:**
  - They are **old world monkeys** endemic to the **Western Ghats** of India.
    - Their key habitats include the **Anamalai Hills,** Nelliyampathy, Nilambur Ghats, **Sholayar,** Gavi, **Sabarimala**, Vallimalai Hills and Agumbe of the Western Ghats.
  - The lion-tailed macaque's **black fur** and **light mane** around its head and chin give it the nickname **"beard ape."**
  - **Dominant males** of the group emit loud, **human-like 'whoops'** to alert outsiders entering their territory.
  - **Conservation Status:**
    - **IUCN Red List:** Endangered
    - **CITES:** Appendix I
    - **Wildlife (Protection) Act, 1972:** Schedule I



Read More: Lion-Tailed Macaques

Jallikattu

The Tamil Nadu government has issued a **Standard Operating Procedure (SOP) for safe Jallikattu events in 2025**, guided by the **Animal Welfare Board of India.**

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Note:

- Events must adhere to **Section 3(2) of the Tamil Nadu Prevention of Cruelty to Animals (Conduct of Jallikattu) Rules, 2017,** allowing **Jallikattu only at notified locations with permissions**, ensuring bull safety and cruelty prevention.
- Tracing back over 2,000 years, Jallikattu, a traditional sport of Tamil Nadu was originally held to select a **suitable bridegroom.**
  - The sport is linked to the **Ayars,** an ethnic group in India, and its name derives from **"Jalli" (coins) and "Kattu" (tied).**
  - It is celebrated on **Mattu Pongal Day** (3rd day of Pongal), where a bull is released, and participants **tame a bull to win coins tied to its horn.**
  - The sport uses the **Pulikulam or Kangayam breed of bulls,** which are highly valued for breeding and market sales.
- A seal representing Jallikattu was found at the **Indus Valley site**, preserved in the National Museum, New Delhi. A 1500-year-old cave painting near Madurai also depicts the sport.
- Different Jallikattu versions, like **Vadi manjuviraṭṭu, Vēli viraṭṭu, and Vaṭam manjuviraṭṭu,** have varying rules on the duration of holding the bull or the distance to cover.

Read more: Jallikattu

National Consumer Day 2024

Recently, the **National Consumer Day** 2024 was celebrated on **24th December** with the theme **"Virtual Hearings & Digital Access to Consumer Justice."**

- It is observed annually to commemorate the enactment of the **Consumer Protection Act, 1986.**
  - The **Consumer Protection Act, 2019** replaced the Consumer Protection Act 1986.
- **Key Initiatives Launched:**
  - **Jago Grahak Jago App and Jagriti App**: To empower consumers to identify unfair trade practices, including **'dark patterns'.**
    - Dark patterns are **deceptive strategies** used by websites and apps to **manipulate users** into unintended actions. E.g., **Hidden costs, Disguised ads etc.**
  - **National Legal Metrology e-Mapp**: To simplify access to information on **consumer rights** and legal metrology services.
  - **AI-enabled NCH 2.0**: The revamped **National Consumer Helpline (NCH) portal** offers **multilingual support** and **AI chatbots** for efficient grievance resolution.
  - **Organic Food Testing Laboratory**: Inaugurated at the **National Test House in Guwahati,** this facility ensures **organic food** safety and authenticity.
- The World Consumer Rights Day is observed on **15th March**.

Read More: Safeguarding the Rights of Consumers

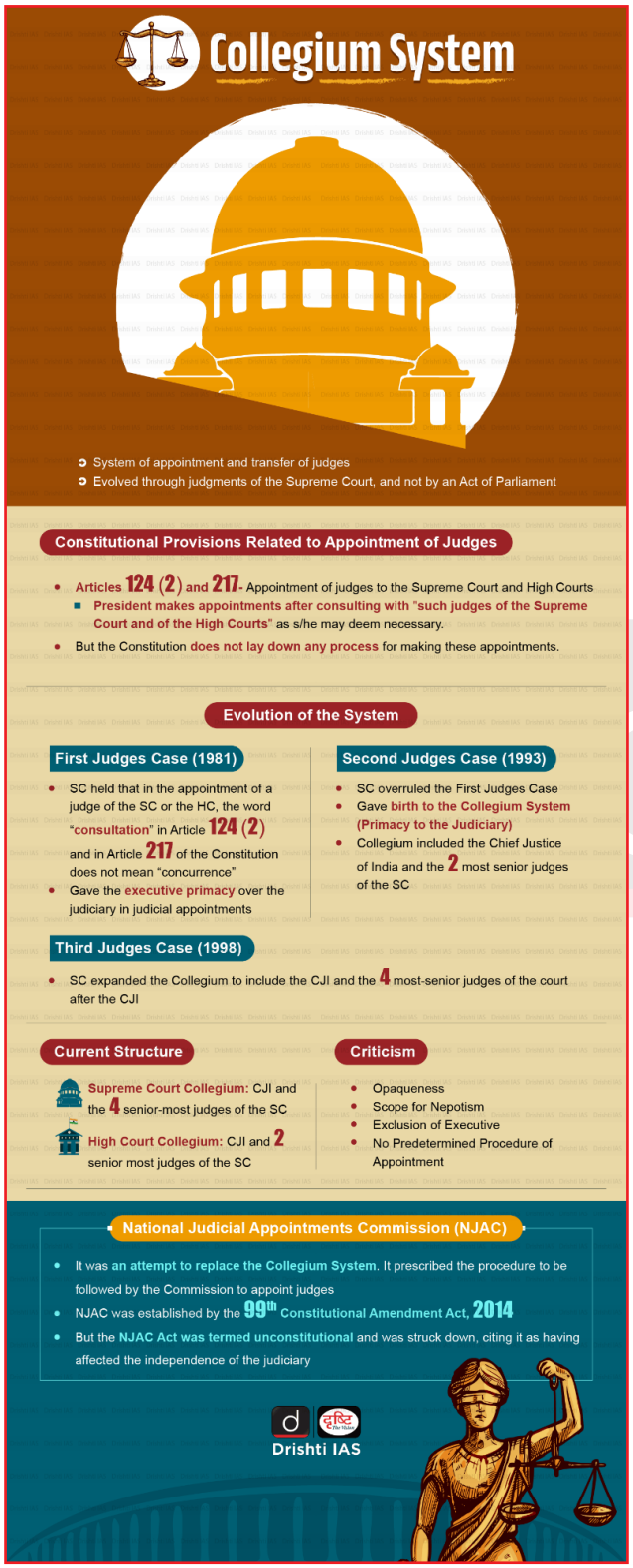
Collegium Assesses High Court Candidates

Recently, the **Supreme Court collegium** conducted interactions with candidates being considered for **high court judgeship**, going "over and above" the standard screening process.

- **The standard screening process** includes **assessing judicial work, IB inputs, the chief minister's views** via the **governor**, and the **Department of Justice's observations**.
- The move came after **controversial remarks on religion** by a judge of **Allahabad high court** at an event that sparked widespread **criticism**.
  - It was alleged that his comments **breached** the **Restatement of Values of Judicial Life adopted by the Supreme Court in 1997.**
    - It is a **code of judicial ethics** that serves as a guide for an **independent and fair judiciary,** and **impartial administration** of justice.
  - It also violated the **Bangalore Principles of Judicial Conduct, 2002** that set **ethical standards for judges**, and regulates judicial behaviour.
    - It recognizes **six core values** i.e., independence, **impartiality, integrity, propriety,** equality, and competence and diligence.
- **Article 217** of the Constitution states that the **Judge of a High Court** shall be appointed by the **President** in consultation with the **Chief Justice of India (CJI)**, and the **Governor** of the State.

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Note:



Read More: Restatement of Values of Judicial Life

US Territorial Acquisitions and Interest in Greenland

Recently, US President-elect Donald Trump has expressed interest in buying **Greenland**, highlighting ongoing US ambitions in strategically important regions like the **Arctic.**

- This move reflects the US's long history of territorial acquisitions, crucial to its growth as a global power.
- **Territorial Acquisitions by the US:**
  - **Louisiana Purchase (1803):** The US acquired 828,000 square miles of land from France for USD 15 million, doubling its size and securing control of the **Mississippi River.**
  - **The Gadsden Purchase (1853):** A 30,000 square-mile region in Arizona and New Mexico was bought to facilitate a **southern transcontinental railroad.**
  - **The Alaska Purchase (1867):** The US purchased nearly 600,000 square miles from Russia for USD 7.2 million.
    - Initially seen as a **strategic acquisition** with low immediate value, it gained importance after the **Klondike Gold Rush,1896** (**gold was discovered in the Klondike**) and became vital to US influence in the Asia-Pacific region.



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Note:

- **Key Facts About Greenland:** It is the **world's largest island,** is located in the **North Atlantic Ocean** and is a territory of **Denmark**.
  - Greenland features major mountain ranges like the **Watkins Range and Stauning Alps,** and rivers such as Borglum, and Majorqaq.
  - Greenland has been a **mining nation since the late 1700s**, extracting **coal and later mining gold, silver, copper, lead,** zinc, graphite, and marble.

Read more: World's Northernmost Island

Extradition Request for Sheikh Hasina

Recently, India had received a **note verbale (unsigned diplomatic correspondence)** from Bangladesh to **extradite** former Prime Minister **Sheikh Hasina.**

- Sheikh Hasina is accused of **mass killings** during **student protests** for which Bangladesh's interim government wants her to **face trial.**
- Hasina could be brought back under the **India-Bangladesh extradition treaty of 2013, amended in 2016**.
- **Exceptions to the treaty:**
  - **Article 6:** Extradition may be **refused** if the offence of which it is requested is an **offence** of a **political character.**
  - **Article 8:** A person may **not be extradited** if the accusation against him or her is **not "made in good faith in the interests of justice".**
- **2016 Amendments:** Objective was to **simplify and hasten** the extradition process
  - **Article 10 (3):** It **removed** the need for **evidence** from the country requesting extradition.
  - **Competent Court:** Only an **arrest warrant** from a **competent court** is enough for extradition. Hasina faces multiple arrest warrants in Bangladesh.
- The treaty enabled India to extradite **ULFA leader Anup Chetia in 2015**.



Read More: Extradition

Marburg Virus Disease

Rwanda has successfully contained and declared its first-ever **Marburg Virus Disease (MVD) outbreak officially over** after a 42-day period without new cases.

- MVD is a severe and often **fatal hemorrhagic fever** caused by the **Marburg virus,** with high case fatality rates and no approved treatments currently available.
- **Transmission:** It is transmitted from **fruit bats *(Rousettus aegyptiacus)* to humans,** and spreads through direct contact with bodily fluids of infected individuals.
- **Symptoms**: MVD starts with high fever, severe headache, and malaise.
  - As it progresses, it can cause severe bleeding, shock, and multi-organ failure, with death occurring **8-9 days** post-symptom onset.
- **Diagnosis**: Diagnosis is confirmed through tests like **RT-PCR (Reverse Transcription Polymerase Chain Reaction)**, and virus isolation, which require maximum biohazard containment.
- **Treatment**: No approved vaccine or antiviral treatments; **supportive care**, such as rehydration and symptom management, improves survival.
- **Control**: Key control measures include **community engagement**, **safe burials**, **contact tracing**, and infection control in healthcare settings.

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Note:

- **Key Facts About Rwanda:** It is a landlocked country in **East-Central Africa,** known as the **"Land of a Thousand Hills."** It shares borders with **Burundi, Tanzania, Uganda, and the Democratic Republic of the Congo.**
  - Kigali is the capital. The **Nile and Congo rivers** flow through Rwanda.



Read more: Marburg Virus

Meat- Eating Squirrels

A study led by the **University of Wisconsin-Eau Claire (US)** has discovered that **California ground squirrels** *(Otospermophilus beecheyi)*, previously considered **herbivores**, exhibit **opportunistic omnivorous behavior**.

- Researchers observed the squirrels **hunting, killing, and eating voles (rodents)**, with 42% of 74 interactions involving active hunting.
- The squirrels' **carnivorous behavior peaked in early July,** coinciding with a surge in vole numbers, indicating their **hunting was triggered by an abundance of prey**.
- It revealed that **squirrels' diets are more flexible** than previously believed, helping them **adapt to changes in food availability** and survive in rapidly changing environments.
- **California Ground Squirrels:**
  - It is also known as the **Beechey ground squirrel** and commonly found in western US.
  - They have **mottled fur, with gray, light and dark brown, and white** present in their pelage.
  - They are commonly **preyed upon by rattlesnakes, eagles, raccoons, foxes, badgers, and weasels** and can **live up to 6 years** in the wild.
  - IUCN Red List**:** Least Concern
  - CITES**:** No special status
- The **Indian palm squirrel** *(Funambulus palmarum)* is commonly found in India and Sri Lanka.

Read More: Malayan Giant Squirrel

Undersea Cable Network

India is set to launch **two new cable systems** in the coming months namely **India Asia Xpress (IAX) and India Europe Xpress (IEX).**

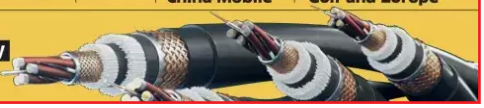
- **IAX** connects Chennai and Mumbai with **Singapore, Thailand and Malaysia** in Asia while IEX connects them with **France, Greece, Saudi Arabia, Egypt and Djibouti.**
- **Undersea Cable (Submarine Cables):**
  - They are **high-capacity optic fibre cables** laid on the **ocean floor** that play a crucial role in providing **global connectivity for high-speed data exchange.**
  - Fiber optic cables that use **fast-traveling pulses of light** to transfer digital information. It relies on **total internal reflection** for their operation.
  - Lasers on one end fire at **extremely rapid rates** down thin glass fibers to receptors at the other end of the cable.
    - These glass fibers are wrapped in **layers of plastic** (and sometimes steel wire) for protection.
  - They provide **unlimited bandwidth** and **very low latency** compared to satellite communication which face **risks** from **space weather, radiation, and debris**.
- As of 2023, India had **17 international subsea cables** landing in **14 distinct stations across five cities**, with a cumulative lit capacity of **138.55 terabits per second (tbps)** and activated capacity of **111.11 tbps**.

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Note:

Project	Capacity (tbps)	Length (km)	Investors include	Connecting
2Africa Pearls	180	45,000	Airtel, Meta, Saudi Telecom	Africa, Europe, Middle East, Asia
India-Asia-Express	200	16,000	Jio, China Mobile	Mumbai, Singapore, Malaysia, Thailand, and Sri Lanka
India-Europe-Express	200	9,775	Jio, China Mobile	Mumbai to Persian Gulf and Europe

Total existing installed capacity 138.55 tbps

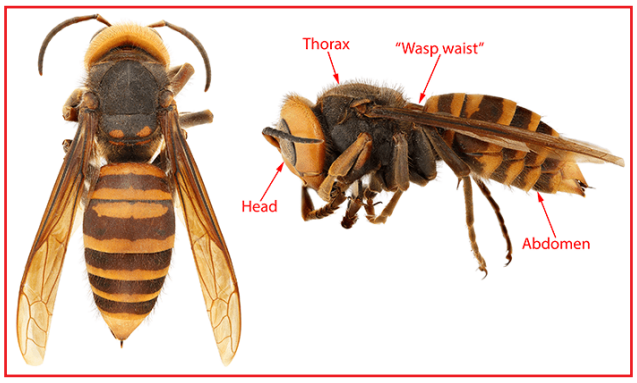


Read More: Fibre Optic Cables

US Eradicated Northern Giant Hornet

The **Northern giant hornet**, nicknamed the **murder hornet**, has been **successfully eradicated** in the **US**.

- **Northern Giant Hornet:**
  - The Northern giant hornet (*Vespa Mandarinia*) is the **largest hornet (wasp)** in the world, measuring **up to 2 inches long.**
    - A wasp is a type of **insect** belonging to the order **Hymenoptera**, which also includes **bees and ants.**
  - It has a **large, solid yellow or orange head** with black eyes.



  - It is **native to Asia** and was first spotted in **Washington state** near the Canadian border in **2019.**
  - It poses a significant **threat to insects and native pollinators** which can kill an entire **beehive (bees habitat) of honeybees** in just 90 minutes.
    - It can even **kill people** as it delivers **seven times more venom** than a honey bee and can **sting multiple times**.
  - They usually **build their nests in forested areas**, often in an **underground cavity.**

Read More: Whiteflies: Threat to Agriculture

Green Deposits

Green deposits in India face sluggish adoption due to pricing issues, low public engagement, and limited interest from private banks.

- **Green Deposits:** These are **interest-bearing deposits** earmarked for funding **green projects,** such as **solar energy, clean transportation,** and sustainable water management.
  - In June 2023, the **Reserve Bank of India's (RBI)** introduced a **framework for green deposits to promote sustainable investments.**
    - However, banks like SBI have seen limited uptake, as the interest rates are not competitive with regular deposits.
- **Challenges in Green Deposits: Low interest rates for green deposits** compared to regular deposits discourage potential customers.
  - Banks struggle with defining which activities **qualify as "green" and the overall lack of a clear framework for green investments.**
  - The **CRR (Cash Reserve Ratio)** requirement for green deposits is higher, which could be a barrier to attracting more customers.
- **India's Commitment to Green Deposits:** **India aims for carbon neutrality by 2070,** with **green finance** pivotal in this transition.

Read more: RBI's Green Deposits Framework

72nd plenary of the North Eastern Council

At the **72nd plenary of the North Eastern Council (NEC) in Agartala, Tripura**. The Union Home Minister stressed the need for police forces in the **Northeastern (NE) States** to shift focus from **insurgency control** to ensuring **citizens' constitutional rights,** reflecting a new phase of governance in the region.

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Note:

- **NEC:** The NEC, established in **1971** (by an Act of Parliament), is the **nodal agency** for the economic and social development of the NE Region, comprising Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura.
  - It aims to address developmental challenges and unlock the region's potential.
- **Achievements of the NEC:** Constructed over 11,500 kilometers of roads, improving connectivity across the NE Region.
  - Boosted power generation capacity through projects led by the **North Eastern Electric Power Corporation (NEEPCO).**
  - Set up foundational institutions like the **Regional Institute of Medical Sciences (RIMS)** and various educational and technical hubs.
  - Transitioned from an **advisory body to a Regional Planning Agency,** playing a critical role in strategic decision-making.

Read more: **Reviving Eastern India for a Developed Nation**

Flowers Pollination by Large Carnivore

The **Ethiopian wolf, a rare and endangered** species, acts as an **unexpected pollinator**, challenging traditional views on **plant-pollinator relationships**.

- The Ethiopian wolf **feeds** on the **nectar** of Ethiopian **red hot poker flowers**, potentially aiding in pollination by **transferring pollen on its muzzle.**
  - The Ethiopian red hot poker is a **red and yellow colored flower** that produces a **sweet nectar** attracting a host of pollinators.
- **Ethiopian Wolf:**
  - It is a specialised **rodent hunter** in the **Afroalpine ecosystem**.
    - **Afroalpine ecosystems** are unique **high-altitude regions of Africa**, particularly in the **Ethiopian Highlands** (3200 meters above sea level, cold and harsh climate).
  - It is about the size of a **large dog**, with a **reddish coat**, **white markings** on its throat and chest, and a **black bushy tail.**
  - With fewer than **500 alive** today, it is Africa's most **endangered carnivore**.
  - It lives **only in Ethiopia**, in high-altitude **"sky islands"** above the tropical forests.
    - Sky Islands are **isolated mountains** surrounded by radically different lowland environments.
- **Other Carnivore Pollinators: Bats** are nectar-eating pollinator mammals.
  - Small carnivore species such as **civets or mongooses** do pollination.
  - Omnivorous bears, such as **sun bears**, may eat nectar too.

Read More: **Field Pansy's Evolution**

Elephant Parade in Thrissur Pooram

Recently, the **Supreme Court** stayed a series of restrictions imposed by the **Kerala high court** on the use of elephants in **Thrissur Pooram.**

- Earlier the Kerala High Court mandated a **3-meter gap** between elephants, **8 meters** from the public or percussion displays, and a **100-meter buffer** from areas using fireworks.
- **Thrissur Pooram:**
  - It is an **annual Hindu temple festival** held in Thrissur, Kerala which is a symbolic meeting of deities of **10 temples.**
  - Celebrated in **Medam (April-May)** in Kerala, it is known as the **Mother of all Poorams (temple festival).**
  - It was started by **Raja Rama Varma**, famously known as **Sakthan Thampuran**, the **Maharaja of Cochin (1790–1805)**, with the participation of 10 different temples.
  - **Vibrantly decked elephants** are a major highlight of Thrissur Pooram.

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Note:



- The festival starts with the **flag hoisting** ceremony, known as **Kodiyettam**. The final day is marked by a spectacular **fireworks display.**

Read More: Thrissur Pooram

VIRAASAT

The **Ministry of Textiles** is organizing the **third edition** of the **VIRAASAT Sari Festival 2024** from **15th–28th December** in New Delhi.

- This mega event **promotes India's handloom heritage** by showcasing diverse handwoven saris and providing direct market access to weavers and artisans.
- **About India's Handloom Sector:**
  - The handloom sector employs around **3.5 million people**, making it the **second-largest employment sector after agriculture,** particularly women.
  - It is known for its **unique regional weaves** like **Paithani, Kancheepuram, Banarasi, Patola**, and others, each with distinct designs and motifs that attract global attention.
- **Government Initiatives for Handloom Sector:**
  - National Handloom Development Programme (NHDP)
  - Raw Material Supply Scheme (RMSS)
  - Weavers' MUDRA Loan/Concessional Credit Scheme
  - Handloom Producer Companies
  - Design Resource Centers (DRCs)
  - One District One Product

Read More: Reforms in Handloom Sector.

INS Nirdeshak

The Indian Navy has commissioned INS Nirdeshak, a state-of-the-art survey vessel, at Visakhapatnam Naval Dockyard.

- **About:** INS Nirdeshak, the second ship of the **Survey Vessels (Large) (SVL) Project,** has been commissioned to enhance hydrographic surveys, navigation, and maritime safety using advanced systems like Multi-Beam Echo Sounders, and Autonomous Underwater Vehicles (AUVs).
  - The SVL Project aims to modernize the Indian Navy's hydrographic survey fleet by replacing the aging Sandhayak class ships. The project comprises four ships; **they are Sandhayak, Nirdeshak, Ikshak, and Sanshodhak.**
- **Indigenous Manufacturing:** Built with over **80% indigenous content,** the project supports the government's Make in India and Atma Nirbhar Bharat initiatives.
- **Maritime Diplomacy and Security:** The ship will act as a **credible tool for maritime diplomacy**, assisting friendly nations in oceanic surveys, which supports India's SAGAR (Security and Growth for All in the Region) initiative.
  - It enhances India's leadership in the Indian Ocean Region by improving maritime security.



Read more: Sandhayak

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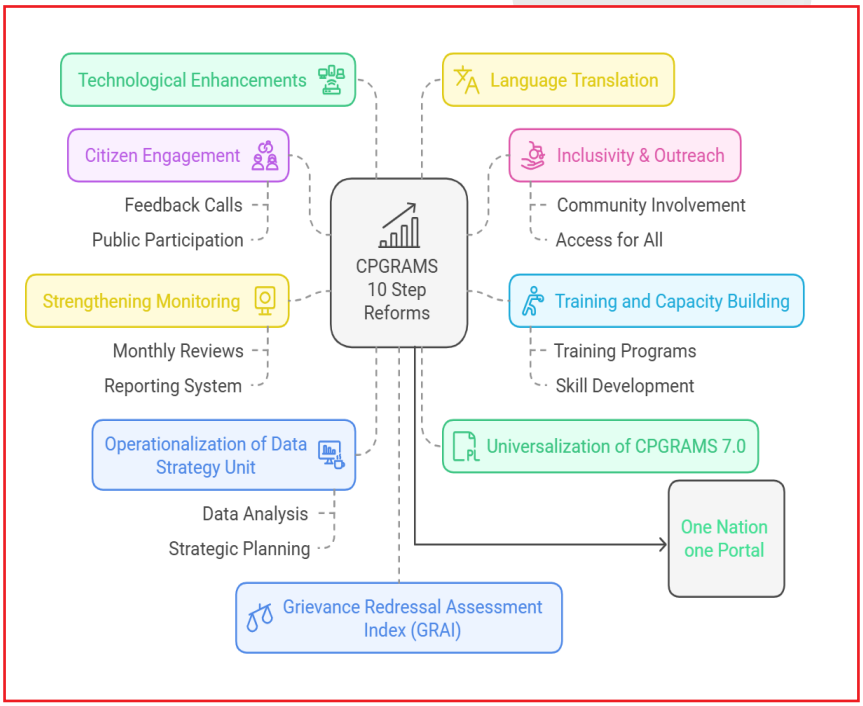
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Note:

Centralized Public Grievance Redress and Monitoring System

Recently, the Ministry of Personnel, Public Grievances & Pensions highlighted the progress made under the **Centralized Public Grievance Redress and Monitoring System (CPGRAMS)** to enhance the efficiency of **grievance redressal mechanisms.**

- CPGRAMS is a 24/7 online platform developed by **National Informatics Centre,** for citizens to **lodge grievances related to service delivery**. It connects all Ministries/Departments of the Government of India and states, with role-based access.
  - Citizens can track grievance status using a registration ID and file an appeal if dissatisfied with the resolution.
  - As of 31st October 2024, around **1.12 crore grievances have been redressed on CPGRAMS** from 2020 to 2024. In 2024, an all-time high of 23.24 lakh grievances were addressed.
  - The government has implemented **10-step reforms** to make grievance redressal more efficient, including **mapping over one lakh grievance officers and reducing pendency to 54,339 grievances.**



Read more: **Speedy Grievances Redressal under CPGRAMS**

Pangolin

Nigerian authorities seized approximately 2.18 tonnes of **pangolin scales**, a significant milestone in the ongoing efforts to combat **pangolin trafficking.**

- Pangolins are the most trafficked **mammals,** with high demand for their **meat and scales** in Asia and Africa, primarily for use in traditional medicine to treat ailments like rheumatism, arthritis, and skin conditions.
- **Pangolins Species:** There are eight species of pangolins, found across two continents:
  - **Africa: Black-bellied pangolin**, **White-bellied pangolin**, **Giant Ground pangolin** and **Temminck's Ground pangolin.**
  - **Asia: Indian pangolin *(Manis crassicaudata)***, **Chinese pangolin** *(Manis pentadactyla)*, **Philippine pangolin**, and the **Sunda pangolin**.
- **Characteristics:** Pangolins are **solitary, nocturnal animals** with a distinctive armor of scales. Also known as **scaly anteaters,** they primarily feed on ants and termites.
- **Conservation Status:** The conservation status of these species ranges from **Vulnerable to Critically Endangered.**
  - Trade of pangolins is banned under the **Convention on International Trade in Endangered Species** and they are listed in **Appendix I** of the **IUCN Red List,** indicating they are threatened with extinction.

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Note:

- In India, the **Indian** (endangered on IUCN Red List) **and Chinese pangolins are listed under Schedule I of the Wildlife (Protection) Act, 1972,** prohibiting exploitation.



Read more: Pangolin

RBI Enhances Collateral-Free Loan for Farmers

The **Reserve Bank of India (RBI)** has increased the **collateral-free loan** limit for farmers **from Rs 1.6 lakh to Rs 2 lakh** to support **small and marginal farmers** amidst rising input costs.

Key Highlights:

- **Beneficiaries:** Over **86%** of farmers, primarily small and marginal landholders, are expected to benefit.
- **Extended Coverage:** Includes loans for **allied agricultural activities,** enabling income diversification.
  - Banks have been directed to ensure prompt implementation and raise awareness about the provision.
- **Complementary Schemes:** The measure will ease access to **Kisan Credit Card (KCC)** loans and align with the **Modified Interest Subvention Scheme**, offering loans up to **Rs 3 lakh** at an effective **interest rate of 4%.**
  - This initiative enhances **financial inclusion** in agriculture, enabling farmers to **manage input costs effectively, invest in operations, and improve livelihoods.**

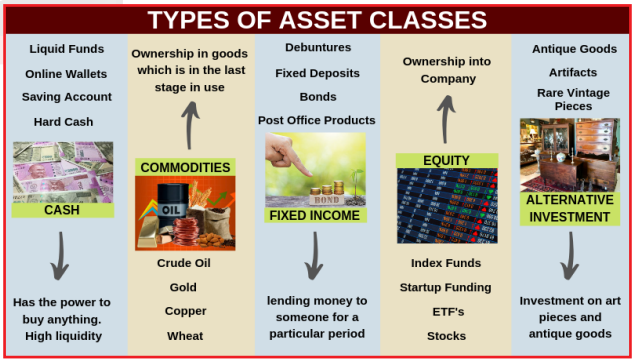
Read More: Kisan Credit Card

SEBI Introduced Specialised Investment Funds (SIFs)

SEBI has introduced a **new asset class** called **Specialised Investment Fund (SIF)**. It is designed for informed investors willing to take on riskier investments.

Specialised Investment Fund (SIF):

- **SIF** bridges the gap between **mutual funds (MFs)** and **portfolio management services (PMS).**
- It requires a **minimum investment of Rs 10 lakh,** with lower thresholds for accredited investors. SIFs will offer open-ended, close-ended, and interval investment strategies.
- **Asset Class:**
  - It is a **group of investments** that share **similar characteristics** and are governed by the **same regulations**.
  - **Example: Equities (stocks),** fixed income (**bonds**), cash and cash equivalents, **real estate**, commodities, and currencies.



- **MFs:** These are investment vehicles that pool money from multiple investors to purchase securities such as **bonds, stocks,** or a combination of both.
- **PMS:** It provides **personalized investment management**, where a **dedicated portfolio manager** tailors strategies to an investor's specific needs, risk tolerance, and financial goals.
  - Unlike MFs, **PMS offers customized portfolios,** with professional management based on in-depth research.

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Note:

- It typically **targets high-net-worth individuals** and involves **higher fees.**

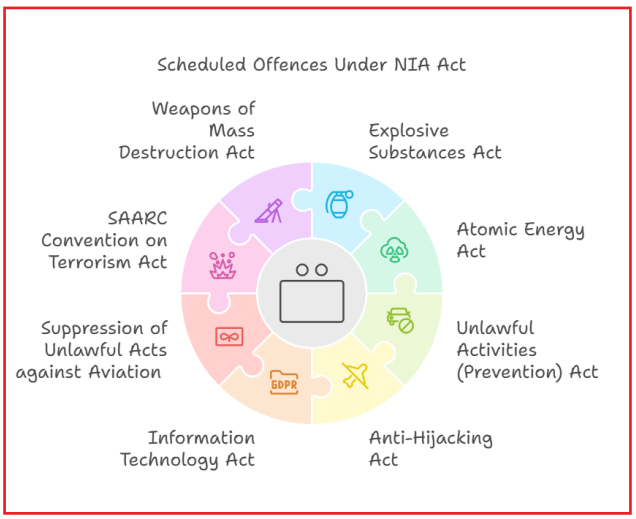
- SEBI also introduced **Mutual Fund Lite regulations (**a simplified regulatory system**)** to facilitate the **passively managed funds** schemes such as **exchange traded funds (ETFs)** and **index funds** by encouraging more players to enter the mutual fund market by reducing compliance burdens and **easing entry barriers**.

Read More: Amendment to Mutual Fund Rules

NIA can Probe Linked Non-Scheduled Offences: SC

Recently, the **Supreme Court (SC)** has held that the **National Investigation Agency (NIA)** has the power to probe **non-scheduled offences** if they are **linked to scheduled offences** under the NIA Act.

- The SC clarified that the **NIA can probe offences under the NDPS Act, 1985** (not scheduled under the NIA Act) **if they are connected to offences under the UAPA**, which is scheduled under the Act.
- Scheduled Offences Under NIA Act, 2008:



- The **NDPS Act, 1985** regulates narcotics-related activities, penalizing offences like drug trafficking with imprisonment (10–20 years), fines (minimum Rs 1 lakh), and death for severe repeat offences.
  - It also mandates property forfeiture linked to drug crimes and established the **Narcotics Control Bureau** in 1986 for enforcement.
- **NIA** is India's **central counter-terrorism law enforcement agency,** established under the **NIA Act, 2008**.
  - It investigates offences affecting India's sovereignty, security, and integrity, including **cross-border crimes** like arms smuggling, drug trafficking, and fake currency circulation.
  - It operates under the **Ministry of Home Affairs.**

Read More: National Investigation Agency

Global Decline in Diarrhoeal Disease Deaths

A recent study published in ***The Lancet Infectious Diseases*** highlights a decline in global deaths caused by **diarrheal** diseases.

- There has been a **nearly 60% drop in global deaths due to diarrhoeal diseases**, with **1.2 million deaths reported in 2021**, down from 2.9 million in 1990.
- **Children under five** and the **elderly (**above 70 years**) remain highly vulnerable**, especially in **sub-Saharan Africa and South Asia**, where mortality rates are highest.
  - Notably, while mortality among children under five has **decreased by 79%**, this age group still experiences the **highest mortality rate**.
  - **Disability-adjusted life years (DALY)** , representing years of life lost and lived with disability, dropped from **186 million in 1990 to 59 million in 2021**, with **31 million in children under five**.
- In **high-income countries**, there are **less than one death per 100,000 population** in children under five, while **sub-Saharan Africa** reports at least **150 deaths per 100,000** population in the same demographic.
- **Diarrhoea:** Diarrhoea is defined as the **passage of three or more loose or liquid stools per day** (or more frequent passage than is normal for the individual).
  - The most severe threat posed by diarrhoea is dehydration.

Read More: Stop Diarrhoea Drive, Asian Conference on Diarrhoeal Disease and Nutrition

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Note:

Marine Heat Wave Killed 4 Million Murre Seabirds

A marine heatwave (MHW) nicknamed **"the Blob"** killed **4 Million of Alaska's Common Murre Seabirds** between 2014 and 2016.

- This was the **largest documented die-off** of a single species of **wild bird or mammal.**
- **Common Murres:** They are **black-and-white seabirds** (often described as **"flying penguins"**) that somewhat resemble **penguins** in appearance, and are among the **most plentiful seabirds** in Alaska.
  - They are the **deepest diving bird** in the northern hemisphere diving up to **600 feet deep.**
  - **IUCN Status:** Least Concern.



- **MHW:** 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.**
  - MHWs can last for **weeks, months or even years**.
  - MHWs destroy kelp forests as Kleps **(underwater ecosystems in shallow water)** usually grow in **cooler waters.**
- **Alaska:**
  - Alaska is the largest state in the US by area.
  - It is bordered by the **Arctic Ocean to the north, Canada to the east, the Pacific Ocean to the south**, and **Russia across the Bering Strait to the west.**
  - Originally a part of Russia, Alaska was purchased by the US in 1867.
  - It is rich in oil, natural gas, and minerals.



Read More: Marine Heatwaves in Arctic Ocean

Wroughton's Free-Tailed Bat

Recently, a **rare bat species** called **Wroughton's free-tailed bat** (*Otomops wroughtoni*) has been spotted in Delhi's Yamuna Biodiversity Park.

Wroughton's Free-Tailed Bat:

- It is a highly rare species of **molossus bat family.**
- **Conservation Status:**
  - **IUCN: Listed as "Data Deficient".**
  - **Wildlife (Protection) Act, 1972:** Protected under **Schedule I.**
- **Geographical Distribution:** It is primarily found in the **Western Ghats** with a single known breeding colony.
  - Small colonies also recorded in **Jaintia Hills, Meghalaya,** and a single individual sighted in **Cambodia.**
- **Physical Characteristics:** It has large size with prominent, **large ears extending beyond the muzzle**, bicoloured **velvet fur** and is known for its **powerful flying capabilities.**

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Note:

- **Ecological Role:** It plays a critical role in **insect population regulation** and is known to **assist in pollination.**
- **Habitat:** It roosts in **caves or dark, damp, and slightly warm places**, usually in moderate-sized colonies.
- **Significance:**
  - Delhi is home to about **14 bat species,** including 4 considered **locally extinct**: the **Indian false vampire, black-bearded tomb bat, Egyptian free-tailed bat,** and **Indian pipistrelle.**
  - **Aravalli Biodiversity Park** (Gurugram) is the only known roosting site (rest place) for the **Blyth's horseshoe bat** in Delhi NCR.



Read More: Indian Flying Fox Bat: Pteropus giganteus

Kisan Kavach

Recently, the **Ministry of Science & Technology** unveiled **Kisan Kavach**, India's first **anti-pesticide bodysuit,** that **prevents** chemicals from **leaching into the skin.**

- **Kisan Kavach:** Kisan Kavach is designed to protect farmers from the harmful effects of **pesticide exposure**, including **respiratory disorders, vision loss, and even death**.
  - It is made of **'oxime fabric'** that can **chemically breakdown** any of the common pesticides that get **sprayed onto cloth or body** during spraying operations.
  - The manufacturing process involves **nucleophilic-mediated hydrolysis** on cotton fabric to **deactivate pesticides**.
  - It is developed by **BRIC-inStem, Bangalore**, in collaboration with **Sepio Health Pvt. Ltd.**
- **Pesticide Use:** According to the **Food and Agricultural Organisation (FAO)**, India used **over 61,000 tonnes** of pesticide in 2020.
  - India produces about **four times** more pesticide than it **uses**.
- **Pesticide Poisoning:** Globally, **385 million cases of acute pesticide poisoning** occur annually, causing **11,000 deaths**, with highest impact in **South Asia**.

Read More: Pesticide Poisoning

Kailash Manasarovar Yatra

India and China held **23rd Meeting of the Special Representatives (SRs)**, reaffirming the disengagement agreement at the **Line of Actual Control (LAC).**

- The talks discussed resuming the **Kailash Manasarovar Yatra (KMY),** a sacred pilgrimage to **Mount Kailash and Mansarovar Lake in Tibet,** which has been suspended since 2020 due to the **Covid-19** and the non-renewal of arrangements by China.
- India organizes the KMY annually between **June and September** through the **Lipulekh Pass (since 1981) in Uttarakhand** and the **Nathu La Pass (since 2015) in Sikkim**.
- The KMY is revered by Hindus, Jains, Buddhists, and Bon followers. Hindus believe Lord Shiva resides at the peak, while Jains regard it as **Mount Ashtapada,** where **Rishabhadeva** achieved liberation**.**
  - The Mansarovar Lake, near Mount Kailash is revered for its spiritual power.
  - The pilgrimage is managed by **Kumaon Mandal Vikas Nigam**, in collaboration with **India's Ministry of External Affairs** and the **Government of China.**
- Mount Kailash (elevation 6,638 meters), is a **diamond-shaped peak** made of **black rock** and the source of major rivers in Asia, including the **Brahmaputra, Sutlej, Indus**, and **Karnali.**

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Note:

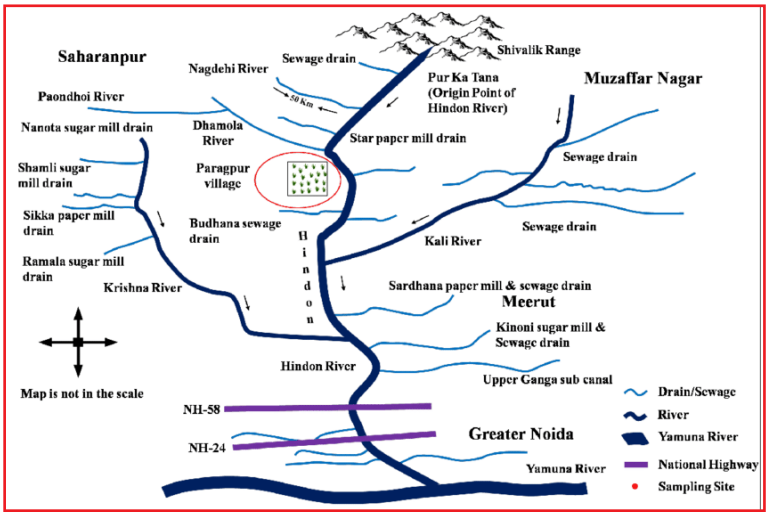


Read more: New Road to Kailash Mansarovar

Pollution in Hindon River

The **Hindon River**, a rain-fed Yamuna tributary, has turned into a drain of untreated waste, symbolising environmental degradation and endangering communities along its industrial belt in Western Uttar Pradesh.

- The Hindon River originates from the lower Shivalik ranges in the Saharanpur District of Uttar Pradesh and flows through the industrial belt of Western Uttar Pradesh, covering 400 km before joining the Yamuna in Noida.
- The river's major tributaries include: **Kali (West) River and Krishni River.**
- Historically, the Hindon River **supported** agriculture and fisheries in Western Uttar Pradesh. However industrialization and urbanization have destroyed its ecological balance.
- In 2015, the Central Pollution Control Board (CPCB) declared the Hindon River a "dead river," citing extreme pollution levels and its unfitness for bathing in several sections.
  - A dead river is a water body that has **lost its ability to support aquatic life** and ecosystem functions due to extreme pollution or environmental degradation.



Read More: Yamuna River

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Note:

29th Delhi CII Summit

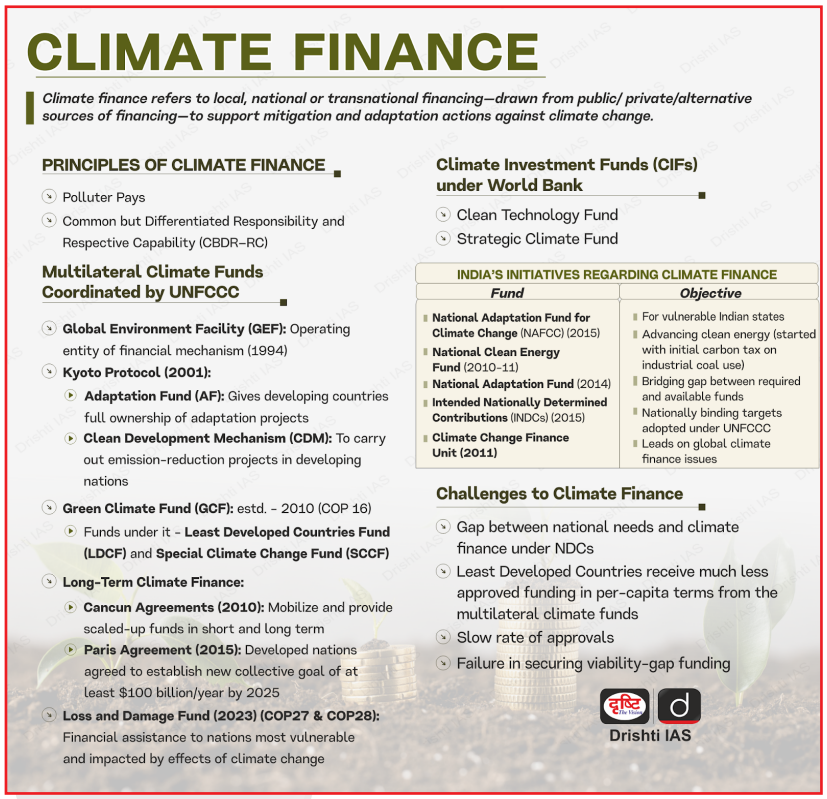
Recently, India's Union Commerce Minister emphasised on the need for **equitable responsibilities** in sustainable development during the **29th CII Partnership Summit** held in Delhi.

Key Highlights of Summit

- **Environmental Equity**: India advocated for **"common but differentiated responsibilities" (CBDR)** and **"polluter pays" principle**, holding developed nations accountable for historical environmental damage.
- **Opposition to Unilateral Measures**: It criticized the **EU's Carbon Border Adjustment Mechanism (CBAM)** and **EU Deforestation Regulation (EUDR)** for harming developing nations' exports.
- **Climate Finance**: India expressed dissatisfaction with the USD 300 billion **climate-finance package at CoP29 at Baku**, emphasizing the need for focus on adaptation and finance for the Global South.
- **Partnerships & Technology**: India emphasized strengthening ties with nations like **Israel, Italy, and Qatar,** advocating **technology exchange in climate resilience** and wastewater management while promoting trade, sustainability, and regional security.

CII Partnership Summit 2024:

- **Organizer**: Confederation of Indian Industry (CII) in collaboration with **DPIIT**, Ministry of Commerce and Industry.
- **Theme (2024)**: *"Partnerships for Progress"*.
- **Participation**: Delegates from **61 countries**, focusing on **sustainability**, **trade**, **green technologies**, and **regional security**.



Read More: Climate Finance

Opening of Moldova's Embassy in India

Recently, the **Republic of Moldova**, an east European country, inaugurated its embassy in **New Delhi.**

- India and Moldova established **diplomatic relations in 1992** following Moldova's independence after the **Soviet Union's collapse** in 1991.
- **Moldova:**
  - Moldova (Previous name: **Bessarabia**) is a **landlocked country** bordering **Ukraine and Romania.**
  - It is in the **northeastern** corner of the **Balkan Peninsula.**
    - The **Balkan Peninsula** is located in **southeastern Europe** and the name is derived from the **Balkan mountain range.**
  - Most of Moldova lies between the great meandering **Prut and Dniester rivers**.
    - It lies to the east of the great arc of the **Carpathian Mountains.**

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Note:

- **Transnistria** is a **tiny breakaway region** of Moldova to the **east of river Dniester.**
  - Transnistria is controlled by **pro-Russian separatists** and permanently hosts **Russian troops** as well as a large arms depot.



Read more: Transnistria in the Russia-Ukraine War

Composite License for Insurer

Recently, the central government proposed introducing composite licenses through an amendment to the **Insurance Act, 1938,** aiming to increase insurance penetration in India and achieve 'Insurance for All by 2047.

- **Composite License:** A composite license allows insurers to offer life and non-life insurance under a **single registration**, consolidating operations into one entity.
  - Currently, insurers need to obtain **separate licenses** for each line of business.
- **Benefits**:
  - A composite license **reduces costs** and **compliance** by allowing insurers to manage multiple lines under one entity, **boosting innovation** and **efficiency**.
  - **Life insurers** can provide **indemnity-based health insurance**, improving underwriting and reducing costs with integrated IT systems.
  - **Agents** can sell both **life and non-life products**, better meeting customers' financial needs.
- **Regulatory Changes**:
  - **Public Sector Undertaking (PSU)** insurers need amendments to the Life Insurance Corporation (LIC) Act of 1956 and the General Insurance Business (Nationalisation) Act (GIBNA) of 1972 to be eligible for composite licenses.

Read more: GST on Health and Life Insurance in India

Jalvahak Scheme

Recently, the **Union Minister for Ports, Shipping & Waterways** launched the **'Jalvahak' scheme** to promote inland waterways and cargo movement.

- **Objective:** It aims to unlock the trade potential of inland waterways, **reduce logistics costs**, and **alleviate congestion in road and rail networks**.
  - It incentivises long-haul cargo movement on National Waterways (NW) 1 **(Ganga),** 2 (Brahmaputra), and **16 (Barak)**.
- **Incentives:**
  - Provides **reimbursements up to 35%** of operating expenses for cargo movement on **NW 1, 2 and 16** via the Indo-Bangladesh **Protocol Route.**
  - It encourages **hiring of vessels owned by private operators,** promoting competition and efficiency.
- **Economic and Environmental Impact:**
  - It aims to shift **800 million tonne-kilometres of cargo by 2027**.
  - The target is to increase cargo movement via waterways from 132.89 million tonnes (2023-24) to **200 million tonnes by 2030**, and **500 million tonnes by 2047**, supporting the Blue Economy and Atma Nirbhar Bharat initiatives.
- **Inland Waterways Authority of India (IWAI):**
  - It was established in **1986** to regulate and develop inland waterways.
  - India has **14,500 km** of navigable waterways, including rivers, canals, and backwaters.
  - Under the National Waterways Act, 2016, 111 waterways (5 existing and 106 new) have been declared as NWs.

Read More: India's Inland Water Transport

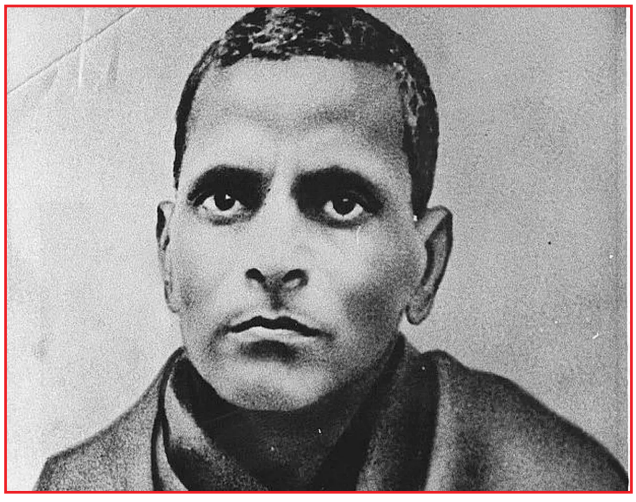
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Note:

Sri Potti Sriramulu

Recently, Andhra Pradesh Chief Minister announced the establishment of a Telugu University in honor of martyr **Sri Potti Sriramulu** to commemorate his sacrifices for the Telugu people.

- Sri Potti Sriramulu is honored for his crucial role in advocating for a **Telugu-speaking state from Madras.** His sacrifice on **15th December** led to the creation of linguistic states in India.
- His death after a **56-day fast** led to widespread violence, prompting the government to form a **State Reorganisation Commission (Dec 1953)**, creating **Andhra Pradesh in Oct 1953**.
- Sriramulu participated in the **Indian Independence Movement** and was jailed for his involvement in the **1930 Salt Satyagraha** and also participated in the **Quit India Movement**.
- He was a dedicated follower and ardent supporter of **Mahatma Gandhi.** He also joined the **Gandhi Ashram in Komaravolu**, established by **Yerneni Subrahmanyam**.
- He undertook a fast to **support Dalit entry rights** to the **Venu Gopala Swamy Temple** in **Moolapeta, Nellore**, which were eventually granted.



Read More: Statehood Demand

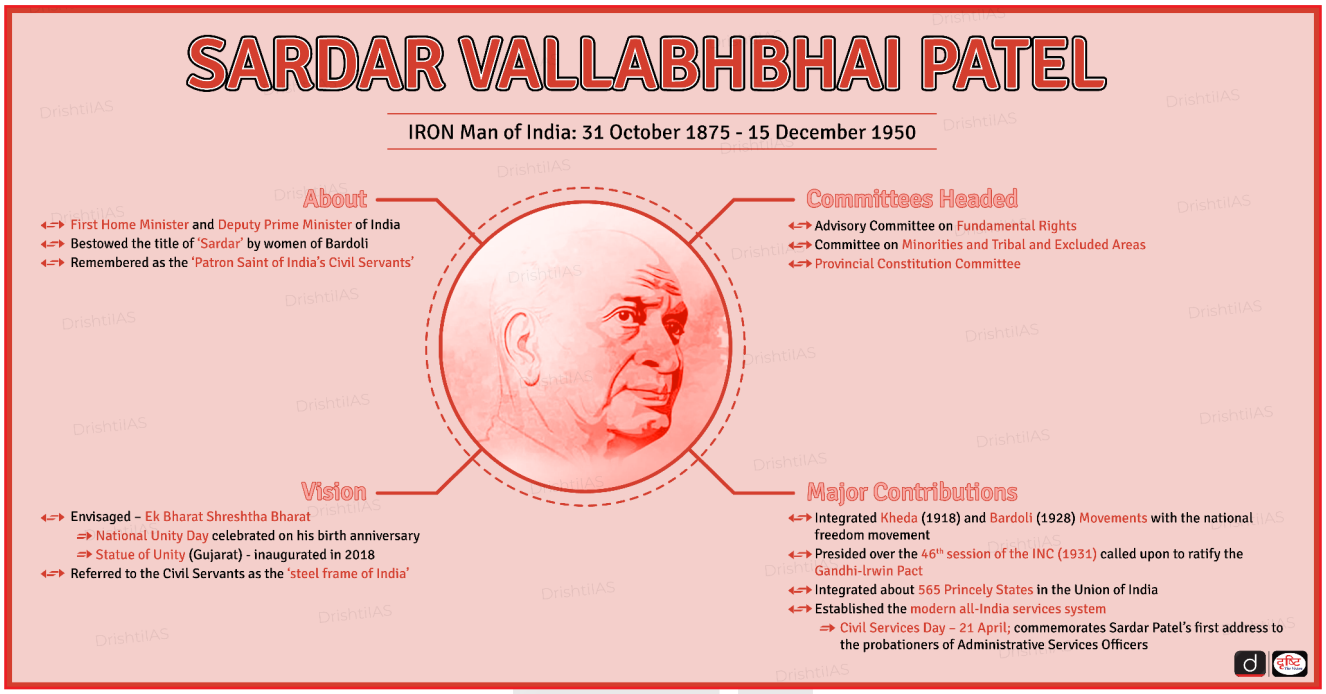
Tribute to Sardar Vallabhbhai Patel

Recently, the Indian Prime Minister honored **Sardar Vallabhbhai Patel** on the anniversary of his death, which occurred on **15th December 1950**.

- He is widely recognized as the **"Iron Man of India"** due to his unwavering determination and steadfast approach, and is celebrated as an **emblem of national unity and resilience**.
- **Political Achievements:**
  - He was instrumental in the **Kheda Satyagraha (1918)**, advocating for tax relief for farmers who suffered crop failures due to drought.
  - He spearheaded the opposition during the **Bardoli Satyagraha (1928)** against an unfair tax hike, which **earned him the title "Sardar"** in recognition of his leadership.
  - He adopted **Mahatma Gandhi's** vision, leading initiatives such as the **Salt Satyagraha in 1930** and enduring several imprisonments for his participation.
  - He presided over the **1931 Congress session** at **Karachi**, steering the discussions surrounding the **Gandhi-Irwin Pact**, resolution on **Fundamental Rights** and **National Economic Programme.**
  - He led the integration of approximately **562 princely states** into the Indian Union, ensuring stability and democracy for millions.
- **National Civil Services Day,** observed on **21st April**, commemorates Sardar Patel's **1947 speech** in which he referred to civil servants as **"the steel frame of India,"** emphasising their commitment to public service.
- He chaired the **Advisory Committee** on **Fundamental Rights**, **Minorities**, and **Tribal and Excluded Areas** in the Constituent Assembly.
- On **31st October 2018**, the **Statue of Unity**, standing at **182 meters** and recognized as the world's tallest statue, was unveiled in Kevadia, Gujarat, in **tribute to Sardar Vallabhbhai Patel**.

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Note:

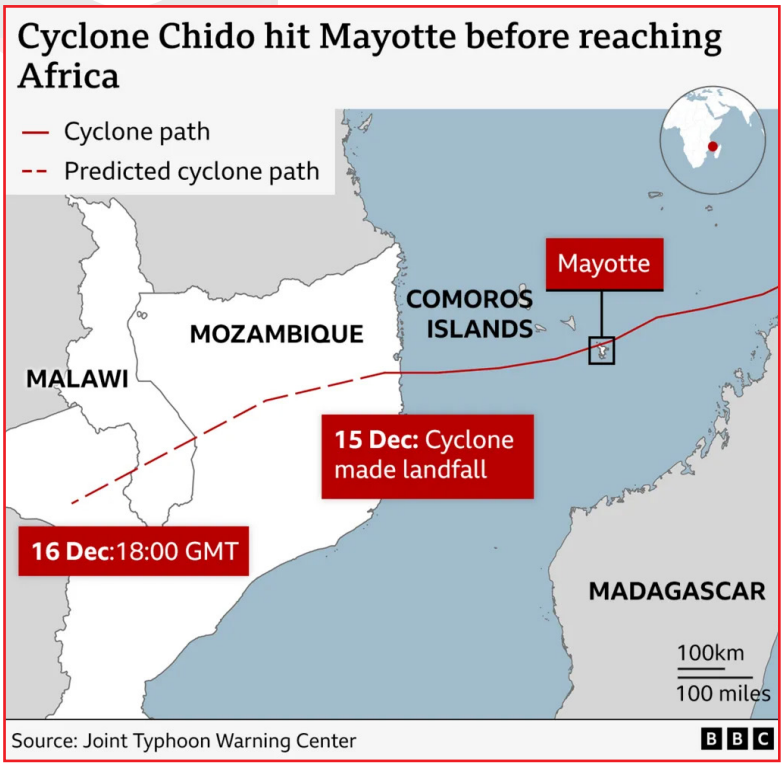


Read More: Birth Anniversary of Sardar Vallabhbhai Patel

Cyclone Chido in Mayotte

Recently, Cyclone **Chido** hit Mayotte, a French Indian Ocean territory, located in the **Mozambique Channel (Indian Ocean).**

- **About Mayotte:**
  - It consists of **two islands** of the Comoros archipelago, with the **main island** called **Mayotte** (or Grande Terre) and the smaller island **Pamandzi** (Petite Terre).
  - It is the **poorest territory** in both France and the European Union.
  - France colonised Mayotte in **1843** and **annexed** the whole archipelago, including Comoros, in **1904.**
    - In a **1974 referendum**, 95% backed separation but 63% of Mayotte voted to stay French.
    - **Grande Comore, Anjouan and Moheli** declared independence in 1975. Mayotte is still ruled from Paris.



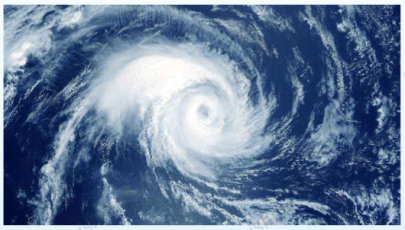
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Note:

CYCLONE

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Cyclones are rapid **inward** air circulation around a **low-pressure** area.

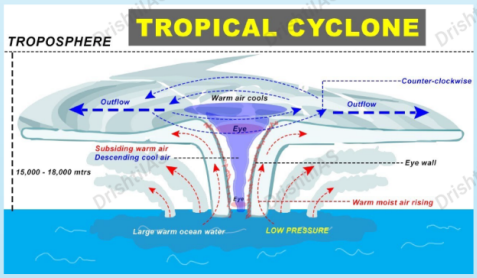


Cyclone v/s Anticyclone

Pressure System	Pressure Condition at the Center	Pattern of Wind Direction	
		Northern Hemisphere	Southern Hemisphere
Cyclone	Low	Anticlockwise	Clockwise
Anticyclone	High	Clockwise	Anticlockwise

Classification

- **Tropical Cyclones;** originate between the **Tropics of Capricorn and Cancer**
- **Extra Tropical/ Temperate Cyclones;** originate in the **Polar Regions**



Conditions for Formation

- Large sea surface with temperature >27° C.
- Presence of the **Coriolis force**
- Small **variations in the vertical wind speed**
- **A pre-existing weak low- pressure area**
- **Upper divergence** above the sea level system

Nomenclature

- Nodal Authority - **World Meteorological Organization (WMO)**
- Indian Ocean Region - **Bangladesh, India, Maldives, Myanmar, Oman, Pakistan, Sri Lanka** and **Thailand** contribute to naming cyclones that occur in this region.

Different Names for Tropical Cyclones

- **Typhoons** - Southeast Asia and China
- **Hurricanes** - North Atlantic and eastern Pacific
- **Tornados** - West Africa and southern USA
- **Willy-willies** - Northwest Australia
- **Tropical Cyclones** - Southwest Pacific and Indian Ocean

Cyclones in India

- **Bi-annual Cyclone Season** - March to May and October to December
- Recent Cyclones - **Tauktae, Vayu, Nisarga and Mekanu** (in Arabian Sea) and **Asani, Amphan, Fani, Nivar, Bulbul, Titli, Yaas and Sitrang (in Bay of Bengal)**

Read More: Cyclone, Chagos Archipelago and Diego Garcia Island

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Note:

Anniversary of Mirza Ghalib

Recently, a 3-day event titled **'Remembering Ghalib'** was organized by the **Sahitya Kala Parishad** in Delhi, to mark the birth anniversary of renowned poet **Mirza Ghalib.**

- Sahitya Kala Parishad is a cultural wing of the Government of Delhi, set up in **1968** for the **promotion and propagation** of **Art and Culture in Delhi.**

Mirza Ghalib:

- **Mirza Asadullah Baig Khan**, known as Ghalib, was born on **27th December 1797.**
- A legendary **Urdu and Persian poet,** he traced his ancestry to the **Aibak Turks**.
- He married at 13 and settled in Delhi.
- In 1850, **Mughal Emperor Bahadur Shah Zafar II** awarded him the titles ***Dabir-ul-Mulk*** and ***Najm-ud-Daula.***
- He was appointed **royal tutor** for poetry and historian.
- After Ghalib's death in 1869, he was buried near the tomb of **Nizamuddin Auliya,** a famous sufi saint of the **Chishti Order,** in **Hazrat Nizamuddin.**
- He made **Urdu letter writing** more conversational.



Read more: Medieval and Modern Indian Literature

National Energy Conservation Day 2024

Recently, on 14th December **(Energy Conservation 2024 Day)**, the **Vice President** of India honored winners of the National Painting Competition.

- The event highlighted the scope of energy conservation through the **Energy Conservation (Amendment) Act of 2022**.
- **NECA:** The **National Energy Conservation Awards (NECA) 2024** recognized achievements across various sectors, receiving 752 applications and presenting 71 awards.
  - NECA was first presented on **14th December 1991**, which was declared as **'National Energy Conservation Day'**.
  - The **Bureau of Energy Efficiency (BEE)**, guided by the **Ministry of Power**, awards industrial units, institutions, and establishments for reducing energy consumption on National Energy Conservation Day.
- **BEE:** BEE was set up on 1st March 2002 under the provisions of the **Energy Conservation Act, 2001**.
  - BEE promotes energy efficiency in India through initiatives like the **Standards and Labeling (S&L) Program**, **Perform, Achieve and Trade (PAT) scheme**, **Demand Side Management (DSM) programs**, and public awareness campaigns, as per the **Energy Conservation Act of 2001.**

Read more: Celebrating Energy Efficiency: National Energy Conservation Day 2023

Malibu Wildfire

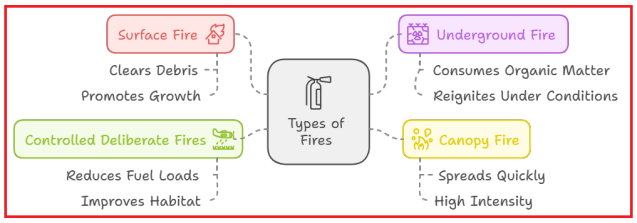
Recently, a significant **wildfire**, known as the **Franklin Fire**, erupted in **Malibu, California,** prompting the evacuation of residents.

- Experts attribute the Franklin Fire's destructiveness to the **"Santa Ana"** winds and **climate change**.
  - **Santa Ana** winds occur when **high pressure over the Great Basin (the area between the Rocky Mountains and Sierra Nevada)** and **low pressure over California's coast** drive strong winds from inland deserts over mountains to the **Pacific Ocean**.
  - The winds usually occur from **October to January**.
- **Wildfire:** A **wildfire** is an **uncontrolled, unplanned fire** in natural areas like forests or grasslands, spreading due to environmental factors like wind and terrain.

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Note:

➢ **Types of Wildfire:**



➢ **Indian Scenario:**

- According to the **ISFR 2021** by the **Forest Survey of India (FSI)**, **35.47%** of forest cover is classified as fire-prone.
  - The highest number of forest fires reported are in **Mizoram (3,738)**, **Manipur (1,702)**, **Assam (1,652)**, **Meghalaya (1,252)**, and **Maharashtra (1,215).**
- **Government Initiatives:**
  - National Action Plan for Forest Fires (NAPFF)
  - The Forest Fire Prevention and Management Scheme (FPM)

Read More: Forest Fires

Indian Light Tank (ILT) Zorawar

The **Indian Light Tank (ILT)**, also known as Zorawar, has successfully completed firing trials at an altitude of over 4,200m.

➢ It was jointly developed by the **Defence Research and Development Organisation (DRDO)** and Larsen & Toubro (L&T) with contributions from various **Micro, Small, and Medium Enterprises** for high-altitude warfare and rapid deployment.

➢ **Key Features:**

- **High-Altitude Performance:** It successfully fired **multiple rounds with precision** at varying ranges and demonstrated exceptional **mobility and reliability** in the challenging terrain of **Ladakh.**
- **Airlift Capability:** It was successfully airlifted by the **Indian Air Force,** enabling rapid deployment to remote and inaccessible areas.

➢ **Significance:** It strengthens India's **mountain warfare capabilities** with indigenous innovation, offering air transportability, high-angle firing, and limited artillery roles for enhanced mobility.



Read more: Defence Technology

Gukesh Won 2024 FIDE World Chess Championship

Recently, **D. Gukesh** became the **youngest ever chess world champion** at the age of 18, defeating **China's Ding Liren (2023 World Chess Champion)** in the **2024 FIDE World Chess Championship** held in **Singapore**.

➢ **D. Gukesh:**

- Gukesh, **the youngest-ever World Champion,** is also the **third youngest Grandmaster** in history and the **youngest player to achieve a 2750 FIDE rating**.
  - Remarkably, he is **four years younger than Russian Garry Kasparov** was when he claimed the **title from Anatoly Karpov in 1985.**
- Gukesh is the second Indian Grandmaster to win the **FIDE World Chess Championship**, following **Viswanathan Anand**, who held the title from 2000-2002 and 2007-2013 before **Magnus Carlsen** claimed it in 2013.

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Note:

- **FIDE World Chess Championship:**
  - **The FIDE** governs all international chess competitions and was recognized as a **Global Sporting Organization** by the **International Olympic Committee** in 1999.
    - Founded in 1924 in Paris and headquartered in **Lausanne**, FIDE is now one of the largest **National Chess Federations**, encompassing 201 countries as affiliate members.

Read More: The Rising Popularity of Chess in India

Manganese Contamination Causing Cancer

A recent study links **manganese (Mn) contamination** in **groundwater** to rising **cancer** cases in Bihar's **Gangetic plains.** Elevated Mn levels were observed in blood samples (average: 199 µg/L; highest: 6,022 µg/L in a liver cancer patient) and household hand pump water.

- The study examined 1,146 cancer patients from Bihar, with **carcinoma** being most common (84.8%).
  - Household water samples were tested for manganese contamination using **Atomic Absorption Spectrophotometer.**

Manganese:

- It is the **fifth-most abundant metal** on Earth**,** exists naturally in **oxides, carbonates, and silicates**.
- It is **vital in trace amounts** for maintaining body **homeostasis,** but toxic in excess.
- **WHO-recommended limit for manganese** in drinking water is **400 µg/L.**

Sources of Contamination:

- Major sources include **geogenic deposits** (from **sedimentary/igneous rocks)** and anthropogenic factors like **industrial pollution**. **Groundwater** is a primary medium of exposure.

Health Impact:

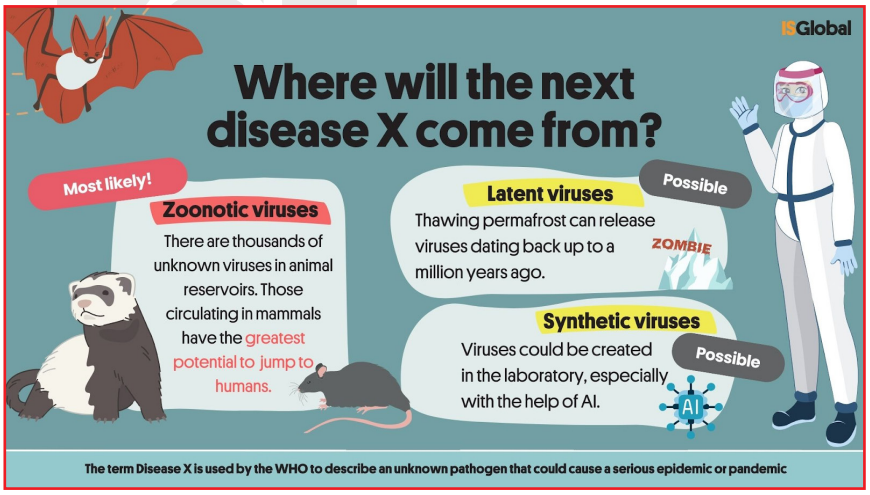
- Chronic exposure to high levels of manganese leads to **toxicity,** causing symptoms like **weakness, clumsiness, emotional instability**, impaired movement and cancer in advanced stages.

Regions Affected:

- **India:** Bihar's Gangetic plains, West Bengal (Murshidabad, 24 Parganas), Karnataka (Tumkur).
- **Global:** Reported in **Nigeria, Bangladesh, China, Japan, and Greece**.

Read More: Groundwater Contamination in India

Disease X



A December 2024 outbreak in the **Democratic Republic of Congo (DRC)**, causing over 400 deaths, raises concerns about **Disease X**.

About Disease X:

- **Definition**: A **hypothetical term by WHO** in **2018** for an **unknown pathogen** capable of **triggering a global pandemic**, highlighting the **need for preparedness** against emerging diseases.
- **Origins**: Emerged after the **2014–2016 West African Ebola epidemic.**
- **Sources:** Can originate from **viruses, bacteria, parasites, fungi, or prions**. Over 300 emerging diseases since 1940, 70% **zoonotic.**

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Note:

- **Risk Factors:** High biodiversity regions, weak healthcare (e.g., Congo Basin), global connectivity, zoonotic spillovers, deforestation, agriculture, antimicrobial resistance, bioterrorism, lab accidents, and **climate change** complicate predictions.

Mitigation:

- Strengthened surveillance, healthcare systems, and platforms like **CEPI** are vital for rapid detection and response.
- Global cooperation, equitable access to resources, and frameworks like **WHO's pathogen list, Pandemic Treaty,** and **Nagoya Protocol** are essential for preparedness.

DRC:

- The DRC is the **2nd largest country in Africa** and the **11th largest in the world**.



Read More: **Future Pandemic Preparedness And Emergency Response**

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Note: