



Monthly

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"You are as strong as your Foundation"

FOUNDATION COURSE GENERAL STUDIES

PRELIMS CUM MAINS 2025, 2026 & 2027

Approach is to build fundamental concepts and analytical ability in students to enable them to answer questions of Preliminary as well as Mains Exam

- ▶ Includes comprehensive coverage of all the topics for all the four papers of GS Mains, GS Prelims & Essay
- ▶ Access to LIVE as well as Recorded Classes on your personal student platform Includes All India GS Mains, GS Prelims, CSAT & Essay Test Series
- ▶ Our Comprehensive Current Affairs classes of PT 365 and Mains 365 of year 2025, 2026 & 2027

ONLINE Students

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Lakshya

PRELIMS & MAINS INTEGRATED MENTORING PROGRAM 2025

Lakshya Prelims & Mains Integrated Mentoring Program 2025

(A 15 Months Strategic Revision, Practice, and Mentoring Program for UPSC Prelims and Mains Examination 2025)

VisionIAS introduces the Lakshya Prelims & Mains Integrated Mentoring Programme 2025, offering unified guidance for UPSC aspirants across both stages, ensuring comprehensive support and strategic preparation for success

Highlights of the Program

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- Highly experienced and qualified team of senior mentors
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Date	Duration	Medium	Mode
12 SEPTEMBER	15 Months	English & Hindi	Offline & Online

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Building Mental Resilience for UPSC CSE with VisionIAS Student Wellness Cell

The UPSC Civil Services Examination is one of the most prestigious exams in the country, bringing immense professional and personal satisfaction. However, the journey often involves overcoming loneliness, intense competition pressure, anxiety, and other psychological challenges. These issues can impact both your preparation and overall well-being.

At **VisionIAS**, we recognize the multifaceted nature of this journey. To support our students comprehensively, we have established a dedicated Student Wellness Cell. Since April 2024, our highly professional psychologists and experienced professionals have provided confidential and mindful support as per student needs.

From Stress Management to Academic Excellence



Enhancing Academic Performance:

Effective stress management contributes to better academic outcomes.



Professional Mental Health Support:

Seeking professional help is crucial for success in UPSC preparation.



Well-Supported Mind for Excellence:

Mental well-being is essential for achieving success in UPSC exams.



Comprehensive Wellness Cell:

Addressing various issues impacting mental health and academic performance.



Safe and Non-Judgmental Environment:

A space for students to discuss issues and receive personalized support.



Confidential and Structured Support:

Multiple, structured sessions based on the severity of the issues.

Common Issues and Our Approach

Our counseling services have addressed a variety of issues, including:



Anxiety and Hopelessness: Using Cognitive Behavioural Therapy (CBT) to promote positive thinking.



Lack of Motivation and Focus: Introducing time management strategies and SMART goal-setting.



Emotional Struggles: Providing a safe space for expression and techniques such as journaling and progressive muscle relaxation.



Social Isolation and Loneliness: Encouraging healthy social interactions and setting personal boundaries.



Family and Personal Issues: Offering advice on coping with family dynamics, personal loss, and significant life stressors.




To support the larger student community, **VisionIAS** is now extending our counseling and wellness support to all students preparing for UPSC CSE, regardless of their coaching institute affiliation. Schedule a session by visiting our office at Apsara Arcade near Karol Bagh Metro Station or emailing student.wellness@visionias.in.

Remember, seeking help is a sign of strength, not weakness.

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NOTE:

Dear Students,

Memorisation and recollection of information in Current Affairs is as important as understanding the articles. In order to enhance the learning outcomes from the Monthly Current Affairs Magazine, we are introducing following additions:



A thematic based colors has been used in the document in the boxes, tables etc to enable easy identification and recollection of various concepts and topics.



Questions are an important tool to assess and retain information. To enable this we are adding a Smart Quiz at the end of each section in the document for practicing the questions.



A wide variety of infographics have been added to ensure smoother learning experience and enhanced retention of the information. This will also help in effective presentation of information in the answer writing as well.



Places and persons in news are being presented in an objective manner through Maps, Tables & Pictures. This will help in easier recollection of factual information.



फाउंडेशन कोर्स सामान्य अध्ययन प्रारंभिक एवं मुख्य परीक्षा 2025

इनोवेटिव क्लासरूम प्रोग्राम

- प्रारंभिक परीक्षा, मुख्य परीक्षा और निबंध के लिए महत्वपूर्ण सभी टॉपिक का विस्तृत कवरेज
- मौलिक अवधारणाओं की समझ के विकास एवं विश्लेषणात्मक क्षमता निर्माण पर विशेष ध्यान
- एनीमेशन, पॉवर प्वाइंट, वीडियो जैसी तकनीकी सुविधाओं का प्रयोग
- अंतर - विषयक समझ विकसित करने का प्रयास
- योजनाबद्ध तैयारी हेतु करंट ओरिएंटेड अप्रोच
- नियमित क्लास टेस्ट एवं व्यक्तिगत मूल्यांकन
- सीसेट कक्षाएं
- PT 365 कक्षाएं
- MAINS 365 कक्षाएं
- PT टेस्ट सीरीज
- मुख्य परीक्षा टेस्ट सीरीज
- निबंध टेस्ट सीरीज
- सीसेट टेस्ट सीरीज
- निबंध लेखन - शैली की कक्षाएं
- करेंट अफेयर्स मैगजीन

नोट: ऑनलाइन छात्र हमारे पाठ्यक्रम की लाइव वीडियो कक्षाएं अपने घर पर ऑनलाइन प्लेटफॉर्म पर देख सकते हैं। छात्र लाइव चैट विकल्प के माध्यम से कक्षा के दौरान अपने संदेह और विषय संबंधी प्रश्न पूछ सकते हैं। वे अपने संदेह और प्रश्न नोट भी कर सकते हैं और दिल्ली केंद्र में हमारे कक्षा सलाहकार को बता सकते हैं और हम फोन/मेल के माध्यम से प्रश्नों का उत्तर देंगे।

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JAIPUR: 5 सितंबर

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1. POLITY AND GOVERNANCE

1.1. SUB-CLASSIFICATION OF SCHEDULED CASTES

Why in the News?

Recently, a **7-Judge Constitutional Bench** of the Supreme Court, in **State of Punjab & Others v Davinder Singh & Others case**, held that **sub-classification of Scheduled Castes (SCs) is permissible** to grant separate quotas for more backwards within the SC categories.

More on the News

- 7-judge Constitution Bench was essentially considering **two aspects**:
 - whether **sub-classification within reserved castes** be allowed, and
 - **correctness of the decision in E. V. Chinniah v. State of Andhra Pradesh (2005)**, which held that SCs notified under Article 341 formed one homogenous group and could not be sub-categorized further.
- Previously, in **2014**, the Supreme Court in Davinder Singh v. State of Punjab **referred the appeal to reconsider the judgment in E.V. Chinniah Case (2004) to a 5-judge Constitution Bench**.
 - In **2020**, a **5-Judge Constitution Bench** of the Supreme Court **ruled that the E.V. Chinniah judgement**, which prohibited sub-categorization of SCs, **requires reconsideration**.

Relevant Constitutional provisions



Article 14: State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India



Article 15(4): Enables the State to make special provisions for advancement of any socially and educationally backward classes of citizens or for SCs and STs.



Article 16(1): Equality of opportunity for all citizens in matters relating to employment or appointment to any office under the State.



Article 16(4): Enables the State to make any provision for the reservation of appointments or posts in favour of any backward class of citizens not adequately represented in services under the State.



Article 341(1): President to specify castes, races, or tribes as SCs for any state or union territory.



Article 341(2): Parliament may by law include or exclude any caste, race, or tribe from the list of SCs by passing a law.

Key highlights of the Judgment

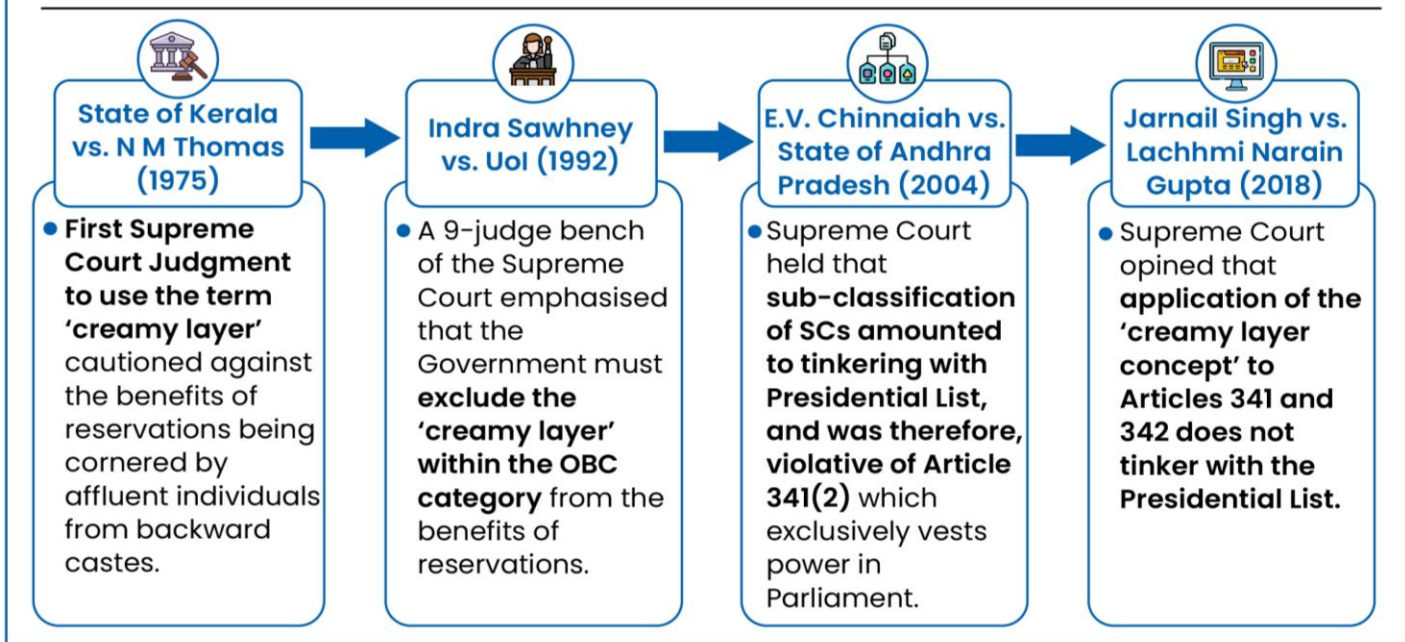
- **Sub-classification within the SCs does not violate Article 341(2)** because the castes are not per se included in or excluded from the List.
- **Scope of sub-classification of SCs:**
 - Objective of any form of affirmative action including sub-classification is to provide **substantive equality of opportunity** for the backward classes.
 - ✓ **Substantive equality** refers to the principle that the law must account for the different backgrounds and historical injustices faced by persons or groups.
 - **State can sub-classify based on inadequate representation** of certain castes. However, the State must establish that the **inadequacy of representation of a caste/group is because of its backwardness**.
 - **State must collect data on the inadequacy of representation** in the “services of the State”.
- State cannot act on its whims or political expediency and its **decision is amenable to judicial review**.

- State is **not entitled to reserve 100% of the seats** available for SCs **in favour of a group** to the exclusion of other castes in the President's List.
- **SCs notified under Article 341(1)** of the Constitution are **heterogeneous groups** of castes, races or tribes with **varying degrees of backwardness**.
- Four of the seven judges on the Bench separately opined that the government **should extend the "creamy layer principle"** to SCs and STs.
 - **However, the opinions do not constitute a direction to the government to implement the creamy layer concept**, as the issue did not directly arise in this case.

Know the term

➤ **Creamy Layer:** It is used to **identify members of backward classes who are socially forward, economically stable, and more educated** and therefore, not eligible for government sponsored educational and professional benefits.

Other Important Judicial Pronouncements



Arguments for sub-classification	Arguments against sub-classification
<ul style="list-style-type: none"> • Substantive equality: Weakest first approach to empower the most marginalised among the SCs and the STs. • Governance: Sub-classification would ensure a diverse and efficient governance • Heterogeneous groups: Prevalence of diverse groups and their varied struggles and degrees of discrimination within the category of SCs. • Legislative competence of Legislatures: Article 341 empowers the President to designate communities as SCs, but after designation, state legislative competence is activated under Articles 246 in light of the Fundamental Rights enshrined under Articles 15(4) and 16(4). <ul style="list-style-type: none"> ○ Article 246 deals with subject-matter of laws made by Parliament and Legislatures of States. 	<ul style="list-style-type: none"> • Unity and solidarity: Could divide the SC community, weakening their collective voice and bargaining power. • Purpose of reservation for SCs: Reservation as reparation for historical injustice and not for economic welfare. • Stigma of caste discrimination might not fade away with economic mobility: e.g., Oxfam's India Discrimination Report 2022 highlights caste-based discrimination in access to credit. • Data limitations: Absence of credible and comprehensive caste census data of various caste groups. <ul style="list-style-type: none"> ○ Socio Economic and Caste Census (SECC) 2011 was refused to be made public citing entire dataset is flawed and census unreliable. • Potential for misuse: Apprehensions of "potential political tinkering" by parties in power in States to expand vote banks.

Conclusion

In the wake of the recent Supreme Court judgment, it is crucial for policymakers to engage in comprehensive dialogue with all stakeholders, including SC community representatives, legal experts, and social scientists. In this regard, Government may constitute a commission on the lines of G. Rohini Commission (constituted for sub-categorization OBCs) with an aim to find a solution that addresses disparities within the SC category while preserving the unity and collective progress of the community as a whole.

1.2. CENTRALLY SPONSORED SCHEME (CSS)

Why in the News?

As part of the expenditure reforms, the NITI Aayog has initiated a process for revamping of Centrally Sponsored Schemes (CSSs).

More on the News

- Development Monitoring and Evaluation Office (DMEO) of the NITI Aayog has **invited proposals to engage consultancy firms to support the evaluation of CSSs in nine broad sectors.**
- These 9 sectors are:** Agriculture and Allied Sector; Women and Child Development; Education, Urban Transformation & Skill Development; Rural Development Sector; Drinking water and sanitation; Health Sector; Water Resources, Environment and Forest Sector; and Social Inclusion, Law & Order and Justice Delivery.




Do you know ?

Central Sector Schemes (CS) are implemented and financed directly by the **central government.**

- Currently, there are **676 CS**, with the total outlay of around **15 lakh crore for FY2024-25.**

About Centrally Sponsored Schemes

- Definition:** CSSs are Schemes that are **funded jointly by centre and state** and **implemented** through the **State** in sectors falling in the **State and Concurrent Lists of the Constitution.**
- Features:** Current framework of the CSSs is based on the report by **Sub-Group of Chief Ministers on Rationalisation of CSSs (2015).**
 - Focus:** The focus of CSSs should be on **Schemes that comprise the National Development Agenda** for realizing Vision 2022, where the Centre and States need to work together.
 - Current Status:** Currently there are **75 CSSs** in **3 categories** and they constitute around 10.4% of the Centre's budget expenditure.

Types of CSS		
 Core Schemes	 Core of the Core Schemes	 Optional Schemes
<ul style="list-style-type: none"> Comprise the National Development Agenda (NDA). Eg: Green Revolution, Pradhan Mantri Krishi Sinchai Yojana, Pradhan Mantri Gram Sadak Yojana (PMGSY), Swachh Bharat Mission (SBM), etc. 	<ul style="list-style-type: none"> 6 Schemes for social protection and social inclusion. They are the first charge on available funds for the NDA. Eg: MGNREGA, National Social Assistance Programme, 3 Umbrella Scheme for Development (of SCs, STs and Backward Classes, Differently Aabled and other Vulnerable Groups), Umbrella Programme for Development of Minorities 	<ul style="list-style-type: none"> States are free to choose the ones they wish to implement. Funds for these are allocated by the Ministry of Finance Eg: Border Area Development Programme, Shyama Prasad Mukherjee Rurban Mission

- **Funding:** All transfers to States for CSSs are being routed through the **Consolidated Fund of the State**.
 - ✓ Following the recommendations of the 14th Finance Commission (FC) and the abolition of Plan-Non Plan distinction from 2017, **Centrally Sponsored Schemes (CSSs) and Central Sector schemes (CSs)** have become the **primary mode of specific purpose transfers** made by the Union to the States.
- **Funding pattern for Core Schemes:**
 - ✓ **8 North Eastern States and 3 Himalayan States:** Centre: State is 90:10
 - ✓ **Other States:** Centre: State is 60:40
 - ✓ **Union Territories:** without Legislature, Centre 100%.
- **Monitoring:** NITI to have concurrent jurisdiction in the **monitoring of CSSs and also oversee Third-Party Evaluation**.

Rational of CSSs

- **Principle of Subsidiarity:** A central authority should have a subsidiary function, performing only those tasks which cannot be performed effectively at a more immediate or local level.
- **Equalization of basic services across states:** For example, Health Schemes ensure equalization of health services across states.
- **Prioritising Merit Goods:** Goods such as **subsidised housing or social services**, which predominantly help the poor, or health care services, have a strong claim on government resources.
- **Directive Principles of State Policy:** These should guide governments at all levels and provides the constitutional basis for national efforts in some areas, like **removal of inequality (Article 38), education (Article 45), the welfare of weaker sections (Article 46) public health (Article 47)**.

Issues associated with current framework of CSSs

- **Resource distribution issues:** The Budget Estimate for FY 2021-22 shows that **15 schemes account for 91.14% of total expenditure**. Even within an 'umbrella' schemes, there are many sub-schemes that receive minuscule amounts.
 - Green Revolution CSS has 18 different sub-schemes. The **Rainfed Area Development and Climate Change** Sub-scheme has an allocation of ₹ 180 cr. whereas **National project on Agro-Forestry** has an allocation of ₹ 34 cr.
- **Large number of Schemes:** Existence of **Large number of small schemes or multiple small sub-components** of a scheme leads to **duplication of efforts** and a thin spreading of resources.
- **Less fiscal space for items in Union List:** Union's expenditure on state items has gone up considerably, hence constrained fiscal space for the items in the Union list.
 - Example, **Defence expenditure has reduced** from 2% of the GDP in 2011-12 to 1.5% in 2019-20 RE (National Institute of Public Finance and Policy).
- **'One size fits all' approach:** Contours of the CSSs are defined by the Union Ministry making it **difficult to accommodate inter and intra state differences**.
- **Lower absorption capacity in some states:** CSSs requires **matching contributions** from states, leading to lower investment in states where it is needed most.
 - Further, states with lower GSDP are also unable to absorb the released funds on time due to inadequate capacity in terms of manpower, skills, technical expertise and weak governance.
- **Suboptimal monitoring:** Currently, the CSSs focus more on processes (what and how to do) rather than outcomes, so monitoring is based on inputs, not actual results.

Way forward

- **Prioritising funding:** Gradually stop the funding for the CSSs and their subcomponents that have either outlived their utility or have insignificant budgetary outlays not commensurate to a national programme (15th FC)
- **A threshold level of fundings:** According to the Arvind Varma Committee in 2005, a new CSS should be introduced only if the annual outlay is greater than ₹ 300 crores.
 - For the existing smaller schemes, the amount should be transferred to states as Normal Central Assistance.
- **Inflation indexed Funding:** Financial norms of **certain components** of schemes like **cooking cost of midday meal or PM-POSHAN Scheme** should be linked to the wholesale price index and should be revised every 2 years.
- **Improved Governance:** According to the 15th Finance Commission:
 - The **funding pattern** of the CSSs should be **fixed upfront in a transparent** manner and should be kept **stable**.

- Financing can be provided based on **bilaterally agreed 'compacts' related to specific objectives** (for example, service delivery outputs or specific outcomes) instead of exhaustively discussed implementation plans.
 - ✓ To support this approach, the Union Government can support initiatives to **enhance data systems, monitoring and evaluation and transparency.**
- The **flow of monitoring information should be regular** and should include, apart from routine statements of financial and physical progress, **credible information on output and outcome indicators.**

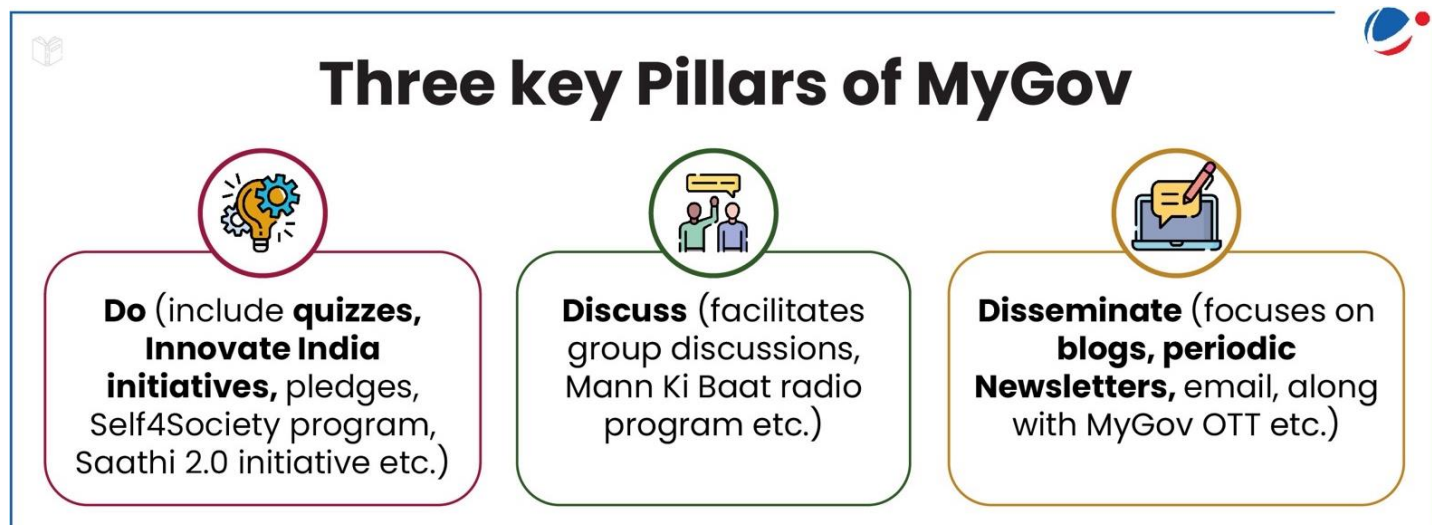
1.3. CITIZEN PARTICIPATION TOWARDS GOOD GOVERNANCE

Why in the news?

Recently, MyGov platform completed 10 years.

About MyGov Platform

- Launched by Prime Minister, MyGov is a **Citizen Engagement Platform** which collaborates with multiple Government bodies/ Ministries to **engage with citizens for policy formulation** and **seeks opinion of people** on issues of public interest and welfare.
- In short, it **empowers people to connect with Government and contribute towards good governance.**
- Since 2014, it has evolved into a robust platform with **over 4.72 crore registered users**, known as **MyGov Saathis.**
- **Major MyGov Campaigns**
 - **LiFE Campaign:** To engage individuals in **addressing environmental degradation and climate change**, emphasizing impact of individual and community actions on global challenge.
 - **Stay Safe Online:** Launched by MeitY during India's G20 presidency to **educate citizens, including specially-abled individuals, about online risks, safety measures**, and cyber hygiene to enhance overall cyber safety.
 - **Swachh Bharat Survekshan:** Through interactive activities and social media engagement, it fosters active public participation in creating a cleaner and healthier India.
 - **Millet-SuperFood:** To highlight nutritional advantages of millets and understand their role in preventing lifestyle diseases.



How Citizen Participation helps in Good Governance?

- **Accountability and Transparency:** Citizens hold government officials accountable by providing feedback, reporting issues, and demanding action, which **encourages transparency and openness** in government decisions.
 - For instance, **RTI empowers citizens** by providing them information to hold government officials and agencies accountable for their actions.
- **Service delivery:** Through active participation in policymaking, **citizens ensure their needs and interests are considered in decision-making process**, enhancing **delivery of public services and policy outcomes.**
 - For instance, community participation in evaluation of **Delhi government's Mohalla Clinics** improved access to quality healthcare.

- **Fosters Inclusivity:** Engaging citizens in governance **develops a sense of belongingness** and ensures that diverse voices, including marginalized groups are heard, promoting equity and social justice.
 - For instance, **MGNREGA Social audit** helps in prioritisation of voices of the poor and marginalised.
- **Trust-building:** Active citizen participation programs **foster trust in government institutions, reinforcing democratic principles** and promote cooperative relationship between state and society.
 - Example, **Gram Sabhas fosters community trust** at the grassroots level.
- **Innovation:** Citizen participation can **bring new perspectives, innovative ideas and solutions** to address issues strengthening governance structure.
 - For instance, Mysuru- based firm has been granted a patent for their **innovative solution to use plastic waste to make environment friendly interlock tiles or pavers** that are stronger than cement.

Challenges associated with Citizen Participation in Good Governance

- **Lack of Commitment:** Engagement in policymaking **requires time and resources**, which are **often limited**, restricting the continuous participation of citizens.
- **Limited engagement:** Many citizens **lack required knowledge and understanding of government processes**, laws, and their rights, hindering their effective participation.
 - Further, **complex procedures and red tape** can make it difficult for citizens to participate.
- **Administrative challenges:** Governments may **lack capacity to manage large-scale participation**, including processing feedback, organizing events etc. further hampering active participation.
- **Limited trust in government:** Public trust in government is often low due to **unfulfilled promises, perceived corruption and nepotism**, and failure to consider community input on development priorities, impeding their participation.
- **Social factors:** Lack of equal access, ability to participate, due to **socio-economic conditions, cultural norms and traditions such as patriarchy**, may limit participation of women and other marginalized groups in governance.

Initiatives taken to ensure Citizen Participation in Good Governance



Swachh Bharat Mission: It became a mass movement, with citizens actively participating in cleaning, promoting sanitation, and spreading the message of cleanliness.



National Mission for Clean Ganga: It has **undertaken comprehensive public awareness campaigns** to **foster a sense of responsibility** and **engagement among public** to clean and conserve Ganga River.



Digital India: It aims to **empower citizens to avail services with more ease** and to conveniently interact with the government, boosting economic growth and improving lives of citizens.



73rd and 74th Amendment Acts: It introduced democratic decentralisation and ensures participation of people in rural and urban areas, inclusion of various marginalized sections like women in local governance.



Citizen's Charter: Its exercise is to **build bridges between citizens and administration** and to streamline administration in tune with the needs of citizens.

Way ahead

- **Accessibility:** Release government data in a **structured and accessible format** and ensure that citizens have easy access to government information e.g. strengthening RTI Act to enhance transparency.
- **Awareness:** Incorporate governance and **civic education into school curriculum, organizing workshops to educate citizens on their rights**, importance of their participation, and how they can effectively engage in governance processes.
- **Digital Platforms:** Strengthening digital infrastructure, creating **user-friendly e-governance platforms** where citizens can access information, and provide feedback to facilitate citizen's participation.
- **Inclusive Policy-Making:** Organize regular public consultations, hearings on key policy decisions, ensuring representation from diverse communities to strengthen governance processes. E.g. **strengthening public hearing component of Environmental Impact Assessment**.
- **Grievance Redressal:** Strengthen and streamline grievance redressal mechanisms, ensuring that **citizen complaints are addressed promptly to build trust in governance** system. Further, strengthening feedback systems to enhance policy implementation.

1.4. LATERAL ENTRY IN CIVIL SERVICES

Why in the News?

A recent UPSC advertisement for recruitment to **45 lateral entry posts of Secretary and Joint Secretary** at the Centre was withdrawn.

More on the News

- The advertisement for lateral entries was withdrawn due to criticism as there **are no quotas for SC, ST and OBC candidates in such recruitment**.
- According to a letter by DoPT to the UPSC (in November 2018)
 - The present arrangement of filling up these posts may be deemed as a **close approximation of deputation, where mandatory reservation for SC/ST/OBC is not necessary**.
 - However, **if duly eligible SC/ST/OBC candidates are eligible**, they should be considered and **priority may be given to such candidates** in similarly situated cases for ensuring holistic representation.

How have lateral entries been kept out of the ambit of reservation?

- Reservation in public jobs and universities is implemented via what is known as the **"13-point roster"**.
- According to this formula, **there is no reservation for up to three vacancies**.
- In the current round of recruitment, the UPSC has advertised 45 openings.
 - If these were to be considered as a **single group**, according to the **13-point roster, six vacancies would be reserved for SC candidates, three for ST candidates, 12 for OBC candidates, and four for the EWS category**.
 - But since these **vacancies have been advertised separately for each department**, all of them are effectively **single-post vacancies**, and hence bypass the policy of reservations.
 - ✓ In a **single post cadre, the reservation does not apply**. Since each post to be filled under lateral entry is a Single Post, reservation is not applicable".
 - ✓ **Supreme Court in Akhilesh Kumar Singh Vs Ram Dawan & Others (2015)** held that reservations to single post cadre amounts to **100% reservation** and **violates Article 16(1) and 16(4)**.

About Lateral Entry

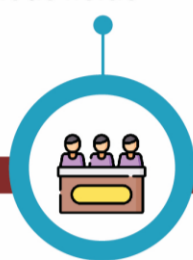
- Lateral Entry offers recruitment to persons from **outside the usual bureaucratic setup** for certain posts in government departments at mid or senior-level positions.
- It is unlike the **traditional hiring system** where posts are filled based on **merit** through an exam conducted by the Union Public Service Commission (UPSC).
- It is **different from the appointment of private sector employees** for advisory roles.
 - **Example:** Appointment of **Chief Economic Advisor of India**, usually a prominent economist.
- It is **contractual employment for 3 to 5 years** (extension of tenure based on performance).
- Countries like Australia, USA, and the UK follow **both the direct entry (via exam) and lateral entry**.

Evolution of the Idea of Lateral Entry in India

First Administration Reforms Commission (headed by Morarji Desai), 1966, first mooted the idea



Parliamentary Standing Committee (headed by S hashi Tharoor) in 2016, recommended for inclusion of eminent persons from various fields



Lateral entry recruitments were announced in **2018**.



Second Administrative Reforms Commission recommended for its institutionalization.



Three-year Action agenda by NITI Aayog (2017), and the Report of the Sectoral Group of Secretaries (SGoS) on Governance (2017) recommended for induction at middle and senior management levels.



Advantages of lateral entry system

- **Addressing Shortfall of Officers:** Only 442 IAS officers are working with the Centre, against the required strength of 1,469 officers (2023-24 Demands for Grants report of DOPT).
 - Baswan Committee (2016) had also supported lateral entry considering the shortage of officers.
- **Increase in efficiency and governance:** Lateral entry “brings competition to the established career bureaucracy” (NITI Aayog).
- **Inclusion of Domain Experts:** Hiring individuals with experience in economics, finance, and technology like robotics, Artificial Intelligence, Cryptocurrency, etc. could bring a fresh perspective to public policy.
- **Dealing with Departmental Necessities:** Certain ministries/departments are required to work in tandem with the private sector like civil aviation, environment, climate change, etc.

Issues associated with Lateral Entry

- **Short-Term Focus:** Appointments for 3 to 5 years may lead to short-term policy goals, lacking long-term vision and impact.
- **Conflict with Constitutional mandate:** Recruitment being outside the purview of India’s reservation policy affects the larger goal of **social justice and equity**.
- **Conflict of Interest:** Private sector individuals may influence government decisions for profit, risking “revolving door” governance.
 - **Revolving door governance** refers to public officers switching between public service and lobbying roles witnessed in USA.
- **Accountability issues:** Holding private sector appointees accountable is difficult due to their short tenure.
- **Lack of grassroots-level experience:** Administrative rules require diverse experiences, not just specialized skills, and understanding local dynamics is crucial.
- **Political interference:** Political interference in the Selection process may promote nepotism and favouritism.

Way forward

Reforms in the process of lateral entry complemented by the following steps would facilitate resolving the issues of vacancies and ensuring competency and merit in the system.

- **Establishing Public Administration University:** It can create a large pool of aspiring civil servants and enable serving bureaucrats to attain deep knowledge of the country's economy, increased domain expertise and improved managerial skills.
- **Deputation to Private Sector:** Deputation of IAS and IPS officers in private sector will bring in domain expertise and competition.
- **Institutionalize goal setting and tracking for each department:** Each Ministry and government agency should set outcome-based goals with a clear timeline.
 - Utilization of **Capacity Building Commission and Mission Karmayogi** to impart mid-career training aligning with the role of officers.
- **Fostering Career Management in Civil Services:** Civil Servants should be allowed for acquiring knowledge **across sectors in initial years** followed by specialised knowledge in specific domains matching their interests.
 - Offering **study breaks** to acquire greater specialisation in the field of interest.
- **Two-Tier entry system:** D. Subbarao (former RBI Governor) recommended a two-tier entry into IAS, first usual at 25-30 years followed by 37-42 years via lateral entry.
 - Such mid-level hiring can bring in expertise from diverse fields into civil services.

1.5. SURROGATE ADVERTISEMENTS

Why in the News?

Ministry of Health and Family Welfare recently asked Sports Authority of India and BCCI to take measures to **prevent surrogate advertisement of tobacco/alcohol by sportspersons.**

More on the News

- The Ministry had **listed out measures including:**
 - signing an **anti-tobacco declaration** of interest form,
 - **not promoting/advertising in stadiums or events** hosted or partnered by BCCI,
 - **issuing directives to sportspersons under BCCI's ambit** to refrain from surrogate promotion/advertisement of tobacco and related products.
- It also requested **not to allow such surrogate advertisements by other celebrities in sporting events** of the BCCI, such as the IPL.

About Surrogate advertisements

- They are essentially a **substitute advertisement for the goods which cannot be directly advertised** due to the **prohibition of law.**
 - **E.g. Tobacco products, alcohol** etc.
- It includes **false description, guarantees, misleading implied representation, deliberately concealing essential information** leading to **unfair trade practices.**
- These advertisements in **popular sporting events** help the **brands gain recall value**, which **increases the sales** of prohibited products.
 - **E.g. Pan masala products** contributed 16% of ad volumes during **IPL 2024.**
- Brands use **methods** like **roping in celebrities, aspirational locations and visuals to attract customers.**
 - **E.g. Liquor companies** advertising Music CDs or surrogate promotion of pan masalas by promoting **silver-coated cardamom, areca nut.**

Legal framework related to Surrogate advertisements

- **Cable Television Networks (Regulation) Act, 1995** with **Cable Television Rules, 1994**, and the **Cigarettes and Other Tobacco Products Act (COTPA), 2003** **banned direct or indirect** promotion, sale or consumption of liquor, tobacco and cigarette advertisements.

- **Central Consumer Protection Authority (CCPA) Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022** defined surrogate advertisement for the first time.
- **Consumer Protection Act, 2019** defines ‘misleading advertisements’ as an advertisement which falsely describes; or mislead the consumers of such product or service.
- **Advertising Standards Council of India (ASCI) Code** allows use of a brand associated with a restricted good to be used for advertising unrestricted goods in case it is a ‘**genuine brand extension**’.
 - **Genuine brand extension is determined** by gauging the **proportionality** of the **scale** of advertisement with the **production and sale** of the unrestricted good.

Important Judicial Pronouncements in context of Surrogate advertisements



TV Today Network v. Union of India (2021): Advertisement of **club soda resembling the bottle of alcohol** of the company was seen as a surrogate advertisement. The brand was asked to broadcast an apology.



United Breweries Limited v. Mumbai Grahak Panchayat (2006): Misleading claims and surrogate advertisement of alcohol were proved and discontinued with **corrective advertisements**.

Implications of Surrogate Advertising

- **Consumers**
 - **Undermine Consumer rights:** Surrogate advertising results in **unfair trade practices** and **violates consumers’ right to information and choice**.
 - **Undermine conscious decision-making:** The ads are formulated to sell dreams through **aspirational content** linking it with the product. This **misleads the vulnerable sections like youth and the poor**.
- **Public Health:**
 - **Public health hazards:** negative impact on health by **making tobacco and alcohol products attractive to consumers** which may cause **addiction** especially in the **youth**.
 - An **ICMR study** found that surrogate **Smokeless Tobacco brands** dominated **41.3% of total advertisements in the ICC Men's Cricket World Cup 2023**.
- **Companies**
 - **Profitability vs. efficacy:** Surrogate ads improve **brand visibility and sales of prohibited products**, encouraging further use of unfair trade practices.
 - ✓ A 2019 survey claimed that over **70% consumers were influence by surrogate ads**.
 - **Digital streaming platforms, BCCI, and State Associations** see significant revenue boosts from surrogate advertisements during sports tournaments. E.g. Brands pay ₹ 60 lakh for a 10-second ad spot.
- **Ethical implications**
 - **Lack of transparency and accountability:** This encourages brands to **exploit the legal loopholes** to promote prohibited products through advertisements.
 - **Social influence and nudge theory:** The use of ‘**out of sight- out of mind**’ marketing strategy nudges consumers to consume tobacco or alcohol products. **E.g. Celebrity endorsements**.

Issues in regulation of surrogate advertisements

- **Loopholes in legislations:** Weak legislations with vague definitions and conditions make them open to interpretation.

- **Ineffective implementation of laws and lack of actionable accountability,** giving a free pass to brands.

- **Unethical practices:** Concerns over potential use of unethical practices or price reduction by companies to gain market share, creating risk of even greater consumption from people.

- **Lack of stringent punishment:** Punishments are usually publishing **corrective advertisements and lack proportionate penalties.**

- **Loss of Jobs and Revenue:** As the production and high taxes/cess on sin goods (e.g. liquor and tobacco) contribute significantly to job creation and state revenue.

Consumer rights linked to surrogate advertisements

Right to Safety: Right to be protected against the marketing of goods and services, which are hazardous to life and property.

Right to be Informed: About the quality, quantity, potency, purity, standard and price of goods so as to protect the consumer against unfair trade practices.

Right to Choose: Right to be assured, wherever possible of access to variety of goods and services at competitive price

Right to Consumer Education: The right to acquire the knowledge and skill to be an informed consumer throughout life.

Way forward

- The **Stakeholder Consultation meeting** between Government stakeholders and ASCI highlighted the steps to be taken:
 - Ensure **clear distinction** between the **brand extension** and the **restricted product** or service being advertised
 - The ad should **not make any direct or indirect reference** to the prohibited product.
 - The ad must **not have resemblance in presentation** with the prohibited product.
 - The ad must **not use situations typical for promotion** of prohibited products when advertising the other products.
- **Enhancing current regulations and closing loopholes:**
 - **COTPA and ASCI clarifications:** Define the ban on surrogate advertising explicitly and extend the same to all media, events and sports sponsorships.
 - **Digital media regulations:** Digital platforms can come under the purview of regular regulations-the initial focus could be on sports betting, health-centric supplements, and gym-related products.
- **Ensuring accountability:** Increase penalties and make media corporations liable through fines and **promote responsible advertising practices.**
- **Regulatory insight:** Ensure periodic audits, real-time vigilance and **strengthening enforcement mechanisms.**
- **Boost public awareness and education** through Information, Education, and Communication (IEC) campaigns etc.

Conclusion

Advertisements have a **strong influence in the minds of consumers** especially in this era of new age technology. It is vital to **ensure legitimacy of their claims** to ensure a healthy society.

1.6. UNIFORM CIVIL CODE (UCC)

Why in the News?

In his Independence Day speech, the Prime Minister advocated in favour of Uniform Civil Code by calling for a Secular Civil Code in place of the current religion-based (communal) Civil Code.

About Uniform Civil Code (UCC)

- **Definition:** A Uniform Civil Code refers to a **unitary system of personal laws applicable to all** irrespective of religion.

- Matters under the scope of personal laws include **marriage, divorce, maintenance, inheritance, adoption, and succession** of the property.
- **Current Status:**
 - At present, most **Indians are governed** in such matters by their **respective religious laws**.
 - In Goa, a form of common civil code is in practice under the Portuguese Civil Code of 1867. (**Uttarakhand adopted UCC in 2024**).
 - **21st Law Commission of India (2018)** said that the formulation of UCC is **neither necessary nor desirable** at this stage, rather **reforms must be undertaken on family laws of every religion** to make them **gender-just**.

Need for UCC in India

- **Fulfilling Constitutional Duty: Article 44** of the Constitution mandates that the state shall endeavour to **secure a Uniform Civil Code** for all citizens.
 - It would also advance **gender justice, national integration, and equality** before the law enshrined in **Article 14**.
 - Implementing a UCC would uphold the **principles of a secular state**, where religious beliefs do not dictate civil matters.
- **Realising the needs of Contemporary Society:** Laws/Practices dividing the nation based on religion or hindering societal progress must be abolished.
 - Eg. **polygamy** is legal as per Muslim Personal Law (Shariat Application Act), 1937, but it is against women and hence must be discarded.
- **Fulfilling International Obligations:** Justifying India's membership at various Human Rights conventions and protocols, including United Nations Human Rights Convention.
- **Simplification of Laws:** A standardised procedure in personal matter irrespective of religious background would ensure **faster and more efficient resolution of disputes**.
- **Adapting to Modern Times:** Implementing a UCC ensure that laws align with the evolving social landscape, promoting inclusivity and individual freedoms.

Supreme Court Judgements on UCC

- **Ahmed Khan v. Shah Bano Begum (1985):** Gender justice and the need for uniformity in personal laws.
- **Sarla Mudgal and others v. Union of India and others (1995):** reforming personal laws to prevent misuse. Similar view reflected in the **Lily Thomas case (2000)**.
- **Shayra Bano v. Union of India (2017):** Setting aside talaq-e-biddat (instant and irrevocable talaq under Shariat Act of 1937) as an arbitrary practice.

Issues associated with implementing UCC

- **Against Diversity:** Personal laws have been deeply ingrained as a way of life, and imposing a UCC could undermine cultural and religious identities and could violate religious freedom (Article 25 of the Constitution).
- **Lack of Consensus:** Implementing a UCC without the consent and agreement of all communities could lead to social unrest.
- **Against Cooperative Federalism:** Several experts argued that UCC could encroach upon states' legislative competence, thereby infringing on principles of cooperative federalism.

Way forward on implementing UCC in India

- **Consensus building:** Involving various stakeholders including inter-faith dialogues to prevent social discord.
- **Socio-economic impact analysis:** By taking into consideration the potential impact on the marginalised and vulnerable communities along with incorporating provisions for them.
- **Education and awareness:** Building progressive and broadminded outlook among the people helping them understand the spirit of UCC.
- **Codification of all personal laws:** By codifying laws, one can establish universal principles that promote fairness.

1.7. LEGISLATIVE IMPACT ASSESSMENT

Why in the News?

Recently, a 2-Judge bench of the Supreme Court suggested a **comprehensive statutory audit** of the Maharashtra Slum Areas Act and emphasized that **reviewing and assessing implementation of a statute is an integral part of Rule of Law**.

More on the News

- Court directive came in response to several **systemic issues in implementation of the Act** including problematic processes of land identification as slum areas, provision of accommodation for displaced slum dwellers, etc.
- It further emphasized that the **executive branch has a constitutional duty to not just implement laws but also monitor it**.
- Court's call for a comprehensive statutory audit highlights need for **Legislative Impact Assessment** as a systematic approach to evaluate the effectiveness and consequences of enacted laws

What is Legislative Impact Assessment (LIA)?

- LIA, also called Regulatory Impact Assessment, is a systematic method used **to analyze the multidimensional impact of proposed and existing legislation**, focusing on both positive and negative effects.
- Some of the essential components of LIA include **problem identification, exploring choices, comparative analysis, stakeholder consultations, selection of preferred choice, socio economic analysis, post-enactment appraisal**, etc.

What are the significances of LIA in India?

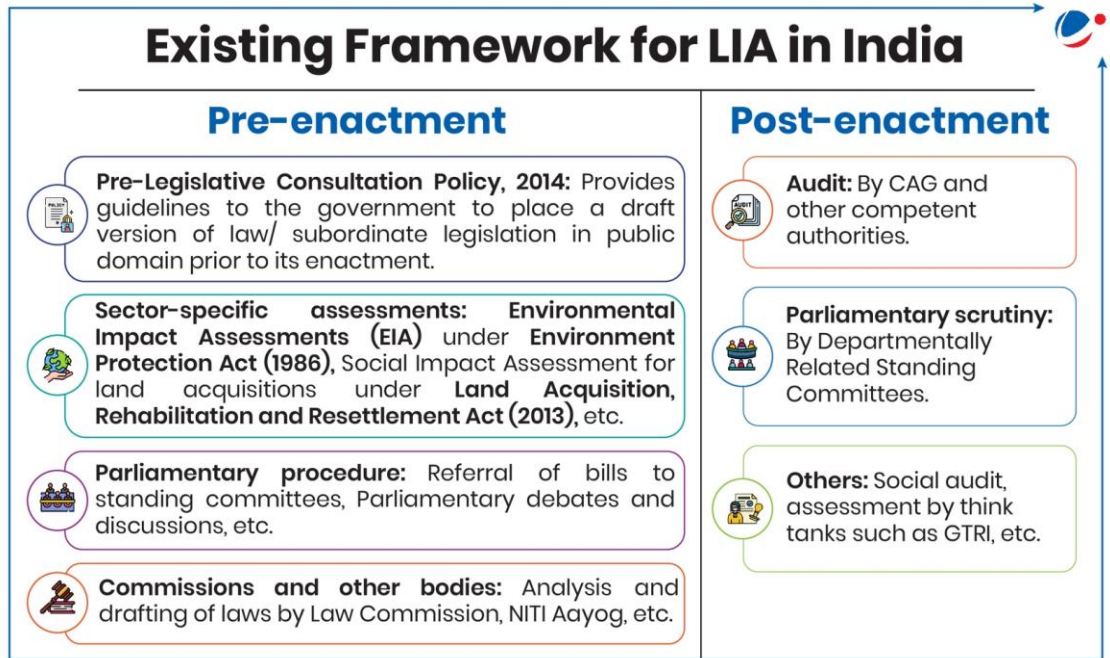
- **Evidence-based Policymaking:** Thorough assessments of legislations before and after enactment can allow policymakers to base their decisions on empirical evidence rather than assumptions or political pressures.
 - LIA can help in **optimizing resource allocation** through effective cost-benefit analysis.
- **Legislative quality:** LIA can help **prevent legal conflicts, ambiguities and enactment of cross-purpose and overlapping laws**.
 - e.g., **overlap in jurisdictions of sectoral regulators** (such as TRAI, SEBI, etc.) and Competition Commission of India (CCI) regarding anti-trust provisions.
 - LIA can also help **reduce burden on judiciary** by reducing ambiguities in legislations, making stakeholder consultations and **feedback mechanisms as alternative channels for resolving conflicts**, anticipating legal challenges, etc.
- **Scrutiny of delegated legislations:** LIA can help assess whether the **powers delegated to executive authorities are appropriate**, well-defined, and being used as intended, given the reduced parliamentary scrutiny of delegated legislation.
 - It can help reduce instances of **malfeasance** (intentional act of wrongdoing), **misfeasance** (commission of a lawful act in an improper manner), and **nonfeasance** (non-conformity to the law) by **delegated authorities**.
- **Responsive and responsible Governance:** LIA can provide scope for **mid-term course correction and policy revisions** to address implementation gaps effectively **making the administration more responsive**.
 - Periodic assessments of legislative impact **can increase transparency and hold lawmakers and implementing agencies accountable** for the outcomes of their policies.
- **Compliance with International Obligations:** LIA helps ensure that new legislations/ policies align with India's obligations under various international agreements, including those related to human rights, trade, etc.
 - e.g., in 2021, Merchandise Exports from India (MEIS) scheme was replaced by Remission of Duties or Taxes on Export Products (RoDTEP) scheme due to its non-compliance with WTO norms.

What are the challenges in ensuring effective LIA in India?

- **Legal and institutional:** There is an absence of formal and legally binding mandate for conducting LIA in India.
 - **Lack of effective inter-ministerial coordination** and working in silos of government departments results in fragmented and incomplete assessments.



- **Absence of dedicated institutions** (like the UK's Better Regulation Executive) to ensure that every law undergoes impact analysis.



- **Data limitations:** Absence of comprehensive, reliable, and interoperable data on performance of statutes/ policies/ schemes make it difficult to conduct thorough assessments.

- Further, the concept of **'Bounded Rationality'** can result in suboptimal analyses and flawed predictions about real-life performance of laws/ policies.
 - ✓ **Bounded rationality** involves the idea that human decisions are not fully rational and bound by limitations of information failure, time taken for decision making, etc.
- **Bureaucratic inertia:** Procedure-oriented administrative culture designed on Weberian bureaucratic principles prioritizes following established procedures over introducing new, analytical practices.
 - Further, **closed bureaucratic system hinders effective coordination with stakeholders** including civil society, policy think-tanks, etc.

What can be done to ensure effective LIA in India?

- **Institutional:** A **dedicated agency or committee** (on lines of UK's Better Regulation Executive) under the **Ministry of Law and Justice** or **NITI Aayog** could be set up to oversee and review the LIA process.
 - Each statute creating a regulator should include a provision for an **impact assessment periodically by an external agency. (ARC-II)**
 - **Regulation Review Authority** can be established for every regulatory authority, ministry or department to undertake the regulatory impact assessment, which should be a pre-condition to the writing of regulations. (**Damodaran Committee, 2013**)
- **Legislative process reforms:** **Mandatory referral of bills to Departmentally Related Parliamentary Standing Committees** for consideration and scrutiny. (**NCRWC**)
- **Technology and Data-driven analysis:** Leverage emerging technologies and tools such as data analytics, machine learning, and AI to significantly improve the accuracy and depth of LIAs.
 - **Strengthen government data collection system through digitization and democratize access to government data** by ensuring effective implementation of initiatives such as **National Data and Analytics Platform (NDAP)**.
- **Capacity building and training:** Collaboration with academic institutions, think tanks, and civil society in supplementing government's capacity by providing expertise and conducting independent assessments.
 - e.g., Institutions like **National Institute of Public Finance and Policy (NIPFP)** can partner with government ministries to conduct specialized LIAs.

1.8. NEWS IN SHORTS

1.8.1. STATE OF INFRASTRUCTURE IN DISTRICT COURTS

Union Ministry of Law & Justice published a report titled 'Empirical Study to Evaluate the Delivery of Justice through Improved Infrastructure'.

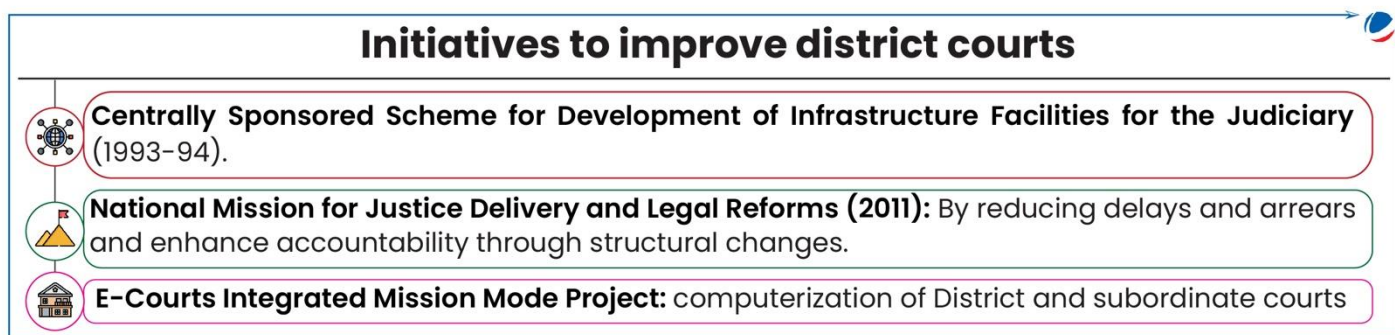
- The report focused on various aspects of Infrastructural issues faced by Chief Administrators, Judicial Officers, Advocates, and Support Staff.

Key Findings of the Report

- **Basic infrastructure:** ~37.7% of **Judicial Officers (JOs)** have reported lack of adequate space in courtrooms.
- **Human resource:** **Shortage of JOs with lack of adequate training and skill development** to effectively manage workload and maintain a timely disposition of cases.
- **Digital infrastructure:** Lack of computerisation of the Offices of **District Legal Services Authority (DLSA) and Taluk Legal Services Committee (TLSC)**.
 - Inability of advocates to cope up with **technicality of digitization process**, increased **burden on support staff due to E-Court missions**, etc.
- **Other issues with district courts:** Lack of cooperation and coordination among all departments of District Court, temporary or casual employment of support staff leads to lack of support within the court system, etc.

Key Recommendations

- **Establish** an independent IT department equipped with the latest hardware and software with sufficiently trained manpower to manage and service, at District and Taluka courts.
- More **emphasis should be laid on sustaining the filed cases in electronic form till the end** to increase efficiency.
- Creation of **separate Civil and Criminal Courts** headed by **separate JOs**.



1.8.2. ANTICIPATORY BAIL UNDER SC/ST ACT

Recently, a 2-Judge bench of the Supreme Court held that bar on anticipatory bail under **Section 18 of the SC and ST (Prevention of Atrocities) Act, 1989 is not applicable unless a prima facie case** under the Act is made out against the accused.

- **Section 18 of the Act** states that **Section 438 of the CrPC, which provides for anticipatory bail, shall not apply** in relation to cases involving offence under the Act.

Other Key Highlights of the judgement

- Court observed that **mere insult of a member of SC or ST is not an offence** under the SC/ ST Act unless the accused had the **intention to humiliate based on caste identity**.
- **Only intentional insult or intimidation caused by entrenched social norms** like untouchability or caste superiority, qualifies as the type of insult or intimidation envisioned by the Act.

Anticipatory bail

- It is a **direction by High Court or the Court of Session** to release a person on bail, **apprehending arrest** on accusation of having committed a **non-bailable offence**.
- **Section 438 of the Code of Criminal Procedure (CrPC)** contained provisions related to anticipatory bail.
- Under reformed criminal laws, **Section 482 of Bhartiya Nagarik Suraksha Sanhita (2023)** contains relevant provisions for anticipatory bail.

SC and ST (Prevention of Atrocities) Act, 1989

- **Objective:** To **prevent commission of offences** against the members of SCs/STs, **Special Courts** for trial of such offences, and provision for **relief and rehabilitation** of victims.
- **Salient Features**
 - The **accused** must **not be a member of the SC/ST**.
 - **Offences** include employing members of SC/ ST for Manual Scavenging, dedicating SC/ ST women to deity, temple, etc., as devadasi, denial of customary right of passage to places of public resort, among others.
 - It also provides for punishment for **neglect of duties under the Act by public servants** not being a member of SC/ ST.

1.8.3. DELIMITATION COMMISSION

SC in **Kishorchandra Chhanganlal Rathod case** held that **constitutional courts have the power to review orders of the Delimitation Commission** if an order is manifestly arbitrary and irreconcilable to constitutional values.

- Earlier Gujarat HC had dismissed petition challenging delimitation exercise, taking note of **Article 329(a)** of Constitution, which bars interference by Court in electoral matters.

About Delimitation

- **Delimitation** is the process of fixing the number of seats and boundaries of territorial constituencies in each State for the Lok Sabha and Legislative assemblies.
- Responsibility of delimitation is assigned to a **high-power body known as Delimitation Commission** (Boundary Commission)
 - **Under Article 82**, Delimitation is done by such authority and in such manner as Parliament may by law determine.
 - In India, such Delimitation Commissions have been constituted 4 times – in **1952, 1963, 1973 and 2002**.

Earlier SC's Judgments

DMK v. State of T.N: it held that constitutional Court can intervene to facilitate the elections or when a case for mala fide or arbitrary exercise of power is made out.

Meghraj Kothari's case: The judicial interference was restricted only to avoid unnecessary delay in the election process. It does not put complete restriction on judicial review.

1.8.4. BOILERS BILL, 2024 INTRODUCED IN RAJYA SABHA

It will **repeal Boilers Act, 1923** which was enacted with to ensure uniformity throughout India in all technical aspects pertaining to regulation of boiler.

- Earlier, act was amended by **Indian Boilers (Amendment) Act, 2007** which introduced inspection and certification by independent third party inspecting authorities.
- Act was further reviewed to **incorporate decriminalised provisions** in **consonance with Jan Vishwas (Amendment of Provisions) Act, 2023**.

Key features of Bill

- **Define competent authority** as an institution recognised in such manner as may be specified by regulations, for grant of certificate to the welders for welding of boiler and boiler component.
- **Any person who makes any structural alteration**, addition or renewal in or to a boiler **without obtaining authorisation of Chief Inspector** shall be punishable.

- **With imprisonment** which may extend to two years or **with fine** which may extend to one lakh rupees, or with **both**.
- **Central Government has power to remove any difficulty** in giving effect to provisions of Boilers Act, 2024 **within a period of three years** from date of commencement of this Act.
- Central Government constitute **Central Boilers Board** to regulate design, manufacture, erection and use of boiler and boiler components.

Objective of Bill

- **Regulation** of manufacture and use of boilers, **ensuring safety of life and property of persons** from danger of explosions of boilers.
- **Prohibits the use of unregistered and uncertified boilers**, mandates reporting of accidents and promotes uniformity in registration and inspection processes throughout manufacturing, erection and use of boilers.

Importance of Industrial Boiler: Boiler deals with burning of fuel in large quantities, attainment of high temperature & pressure zones, handling of high energy steam etc.



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– Nelson Mandela

2. INTERNATIONAL RELATIONS

2.1. INDIA AND GLOBAL SOUTH

Why in the News?

India hosted the third Voice of Global South Summit in virtual format.

More on the News

- India hosted the 1st Voice of Global South Summit in January 2023 and the 2nd edition was held in November 2023, both in virtual format.
- The Voice of Global South Summit is an **extension of India's philosophy of Vasudhaiva Kutumbakam**, or "One Earth, One Family, One Future" **to the international arena.**

Key Highlights of the 3rd VOGSS

- **Participation:** 123 countries (China & Pakistan not invited)
- **Theme: An Empowered Global South for a Sustainable Future.**
- India has proposed a comprehensive and human-centric "**Global Development Compact**" to address the rising debt of the developing countries for the Global South

Note: Global Development Compact is discussed in detail in the subsequent article.

- India will work to provide affordable generic medicines, share experiences in natural farming with Global South countries.
- India will also launch a special fund of \$2.5 million to boost trade promotion activities, and \$ 1 million fund for capacity building in in trade policy and trade negotiation.



What is Global South?

- It refers to technically and socially less developed countries which are located in Southern Hemisphere, primarily in Africa, Asia, and Latin America.
- **Brandt Report** proposed a division between North and South countries based on various parameters such as technological advancement, GDP etc.

Challenges faced by Global South

- **Underrepresentation in global forums:** E.g. Exclusion of African and Latin America from the UN Security Council's permanent membership.
- **High Public Debt:** E.g. As per UNCTAD's 'A world of debt Report 2024', public debt in developing countries is rising at twice the rate of that in developed countries.
- **Obsolete global governance and financial institutions:** E.g. dysfunctional WTO's appellate dispute settlement mechanism, under-representation in Bretton Woods Institutions such as World Bank and IMF.

- **Disproportionate vulnerability to climate change.** E.g. As per **WMO's 'State of the Climate in the South-West Pacific 2023 Report'** Pacific Islands are at higher risk due to the increasing sea level despite accounting for merely 0.02% of global emissions.
- **Divergence from Global North:** E.g. lack of consensus over interpretation of democracy, human rights, and agenda for climate governance etc.
 - Moreover, geopolitical conflicts of Global North impacts the Global South. E.g. Russia-Ukraine conflict has led to inflation in food and oil prices

Significance of Global South for India

- **International influence:** The Global South is an important support for India's international influence and its economic transformation and development.
- **Strategic consideration:** Relations with the Global South is an important part of India's "multidirectional alignment" strategy.
 - It also helps to offset China's influence.
- **Economic development:** Global South can provide abundant resources and provide a vast market for the export of Indian products.

How is India positioning itself as a voice for Global South?

- **Enhancing connectivity and economic inter-linkages:** By undertaking projects ranging from large scale infrastructure development to community related projects in various sectors, including health, housing, environment and education.
 - Extending financial, budgetary and humanitarian assistance to partner countries to aid them in mitigating economic challenges and overcome crises.
- **Capacity building and emerging as 1st responder of the Global South.** E.g. India-UN Capacity Building Initiative, Vaccine Maitri initiative during Covid-19.
- **Leading the Global Climate Agenda:** E.g. championing International Solar Alliance (ISA) & Coalition for Disaster Resilience (CDRI), supporting Common but Differentiated Responsibilities (CBDR)
- **Advocacy of issues relevant for Global South: E.g.** The induction of the African Union into the G20.
- **Reforming multilateral institutions:** E.g. demand for broadening of the UNSC's permanent membership.
- **Alternative Mechanisms on issues like democracy and human rights:** E.g. based on Panchsheel, Gujral Doctrine and Principle of Non- Aligned Movement.

Challenges for India in leading the Global South

- **Diverse Interests:** Global South is a diverse region with varying economic, political, and social interests which makes it difficult to align into a unified stance.
- **Competition with China:** China's competition and interference in development finance, infrastructure, trade, delivery of projects etc. E.g. BRI, cheque book diplomacy.
- **Diplomatic Challenge:** Balancing strategic partnerships with powers such as USA, Russia while trying to represent Global South can be diplomatically challenging.
 - Moreover, it may undermine its credibility as it might be seen as a tilt away from traditional Non-Aligned Movement (NAM) principles.
- **Limited Comprehensive National Strength:** India's limited national strength and poor manufacturing industry, coupled with low S&T innovation and labour quality, pose challenges in addressing the complexities of the Global South.
- **Issue with energy transition:** India faces criticism for its reliance on fossil fuels and challenges in meeting its own climate commitments. E.g. Western Countries criticized India after it opposed a commitment to "phase out" coal at COP 26

India's Initiatives showcasing advocacy for Global South

- **Social Impact Fund:** India will contribute \$25 million for accelerating Digital Public Infrastructure (DPI) in Global South.
- **Global South Young Diplomat Forum:** Launched to promote education and capacity building.
- **Induction of African Union into G20:** As a permanent member during India's G20 Presidency.
- **Vision of Aarogya Maitri:** One World-One Health is India's mission for health security. E.g. Recently, India's first overseas Jan Aushadi Kendra was opened in Mauritius

Conclusion

As India transitions from a balancing to a leading power, it should leverage its rich cultural ethos like “Vasudhaiva Kutumbakam” to unite Global South countries. By bridging the digital divide, supporting disaster-resilient infrastructure, and advocating for an inclusive, equitable international order, India can amplify their collective voice on global platforms.²

2.1.1. GLOBAL DEVELOPMENT COMPACT

Why in the News?

India proposed Global Development Compact for the Global South to address the rising debt of the developing countries and the Global South.

What is Global Development Compact (GDC)?

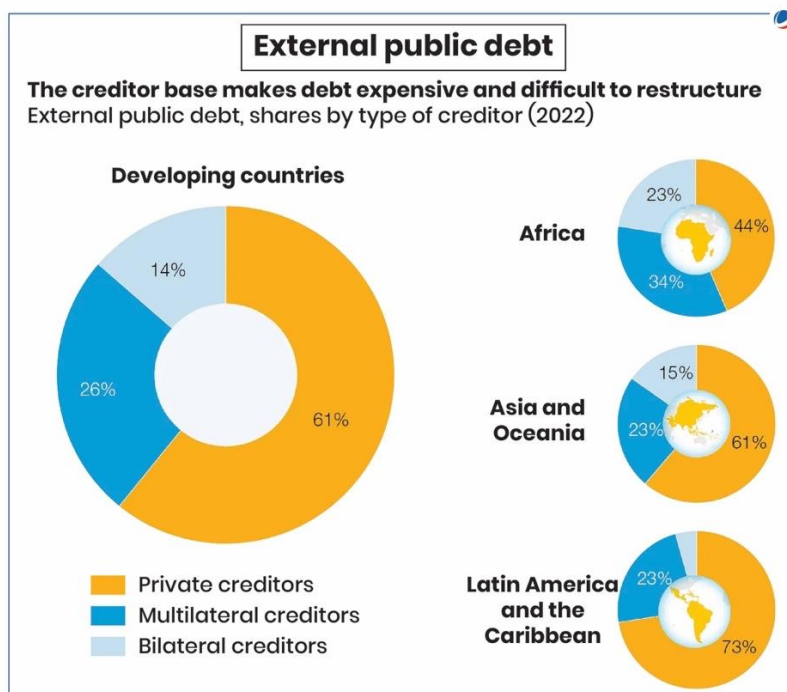
India proposed a **comprehensive and human-centric "Global Development Compact"** for the Global South during third Voice of Global South Summit

Key features of GDC

- **Comprises of four elements:** Trade for development, Capacity building for sustainable growth, Technology sharing, Project specific concessional finance and grants.
- **No Debt Burden:** Ensure that development and infrastructure financing do not impose a debt burden on developing countries.
 - It is also expected to address the concerns of countries falling into the Chinese 'debt trap'.
- **Alternate development path:** Help in exploring alternative pathways for economic growth, social inclusion and environmental sustenance.

Reasons for rising debts of developing countries

- **High borrowing costs:** Developing regions borrow at rates that are 2 to 4 times higher than those of the United States and 6 to 12 times higher than those of Germany.
- **High Public Debt:** Developing countries' public debt in 2023 was \$29 trillion. Public debt in developing countries is rising at twice the rate of that in developed countries.
- **Limited domestic resources:** Developing nations often struggle with limited domestic resources, poor debt management, and low government revenues due to inefficient tax policies and weak rule of law.
- **Political Instability:** It results in policy uncertainty, eroding investor confidence. This accompanied with downgrading of sovereign credit rating translates to higher interest and increased borrowing costs.
- **High reliance on private creditors (including bondholders, banks, and other lenders):** Since 2010, the portion of external public debt owed to private creditors has risen across all regions, accounting for 61% of developing countries total external public debt in 2022.
- **New global challenges:** COVID-19 pandemic, climate change, and geopolitical uncertainties, US-China trade war have exacerbated global economic pressures, disrupting energy supply chains exacerbating financial vulnerabilities in developing nations.



Impacts of high debt burden

- **Issue of debt sustainability:** Presently, ~60% of low-income countries are at high risk of debt distress or already in it.
- **Allocation of more resources to pay interest:** 54 developing countries spend more than 10 per cent of their revenues on net interest payments.
 - This restricts a government's ability to increase public spending on welfare schemes. In Africa, the average person's spending on interest (\$70) surpasses that of education (\$60) and health (\$39) per capita.
- **Hamper's Climate Change Outcomes: E.g.** developing countries are currently allocating a larger proportion of their GDP to interest payments (2.4%), than to climate initiatives (2.1%).
- **Challenges of over reliance on private creditors:** It leads to challenges of debt restructuring, high volatility especially during crises. Moreover, they are more expensive than concessional financing from multilateral and bilateral sources.
- **Sovereign debt crisis and global financial instability:** High debt levels in developing countries can contribute to global financial instability as it leads to a vicious cycle of borrowing and repayment, risking defaults and economic crises.
 - E.g. In past three years alone, there have been 18 sovereign defaults in 10 developing countries which is greater than the number recorded in all of the previous two decades.

Recommendations by UNCTAD for sustainable and inclusive debt solutions

- **Global Financial Reform:** Comprehensive reform of the global financial architecture and establishment of a global debt authority to coordinate and guide sovereign debt restructuring.
- **Concessional Loans:** Expand multilateral and regional banks' lending capacity by increasing their base capital.
- **Transparency in Financing:** Reduce resource and information asymmetry to improve transparency in financing terms.
- **Discourage predatory lending:** Introduce legislative measures to discourage predatory lending practices.
- **Crisis Resilience:** Implement standstill rules to halt debt repayments during external crises.
- **Automatic Restructuring:** Develop automatic restructuring rules and strengthen the global financial safety net.

Conclusion

Addressing rising public debt of developing countries requires a comprehensive strategy combining domestic initiatives and international cooperation including debt restructuring, fiscal consolidation, and growth-stimulating policies for sustainable long-term solutions.

2.2. 10 YEARS OF INDIA'S ACT EAST POLICY

Why in the News?

Experts have pointed out that the recent Indian PM's visit to Singapore is about giving a fresh impetus to India's engagement with South East Asia and more broadly the vast Pacific region.

More on the News

- The visit is of particular significance as 2024 marks a decade of India's **Act East Policy which was announced by Prime Minister at the 9th East Asia Summit in 2014.**

India and East Asia: From Look East to Act East Policy

- **Genesis of Look East Policy (LEP):** Post-Cold War, India lost USSR as strategic partner. Therefore **LEP, initiated in the early 90s**, was aimed to forge ties with US and its Southeast Asian allies, countering China's influence.
- **The Look East Policy and ASEAN:** As a forward step in the direction of operationalising the '**Look East**' policy, **India joined ASEAN in 1992 as a sectoral dialogue partner.**
 - India became a **Dialogue Partner in 1996** and a **Summit-level Partner in 2002**; forged a **strategic partnership in 2012.**
- **India's Act East Policy (AEP):** India launched **India's 'Act East' policy in 2014.** The policy which was originally conceived as an **economic initiative**, has gained **political, strategic and cultural dimensions.**

Act East policy (AEP) in Action

- **Expansion of AEP from East Asia to the Indo-Pacific:** Look East Policy solely focused on ASEAN; AEP **expanded strategic scope**, emphasizing on Indo-Pacific region with ASEAN as core in extended neighbourhood.
 - E.g., The Indo-Pacific Oceans Initiative launched in 2019.
- **Strengthening of Multilateral and Regional engagement:** India continues to forge closer partnership with **ASEAN, BIMSTEC, Asia Cooperation Dialogue (ACD), Indian Ocean Rim Association (IORA)**, etc. E.g., Recent adoption of BIMSTEC Charter.
- **Growing institutional collaboration:** With the United States (US) and its allies – Japan, Australia, and South Korea. E.g. India had joined US-led the Indo Pacific Economic Framework for Prosperity (IPEF), Supply Chain Resilience Initiative (SCRI), etc.
 - **Japan has provided loans** for connectivity projects in Northeast India.
- **India's proactive role in defence diplomacy and exports:**
 - In 2022, **Philippines became BrahMos' first export destination** of shore-based anti-ship missiles from India.
 - **India-Vietnam military logistics pact:** Respective militaries to access **each other's bases** and **enhance the scale and scope of joint production** respectively.
- **Energised Connectivity Programmes:** Kaladan Multi-Modal Transit Transport Project connecting India's Mizoram state with Myanmar's Sittwe Port, India-Myanmar-Thailand Trilateral Highway, Mekong-India Economic Corridor.
- **India's active Socio-cultural and developmental outreach:** Evidenced by increasing people-to-people ties (2 million diaspora strength) and significant state visits like Prime Minister's visit to Brunei and Singapore.
 - **Developmental outreach towards Pacific Island countries:** Establishment of Forum for India-Pacific Islands Cooperation (FIPIC) and India's Vaccine Maitri initiative, which provided vaccines to Papua New Guinea.



Key Challenges to Act East Asia Policy

- **Delay in Infrastructure Development:** Kaladan Multi-modal Project's delay have caused its budget to balloon six times to Rs 3,200 crore, from Rs 536 crore in 2008.
- **Political turmoil and civil unrest in Bangladesh:** Uncertainties over the future of India-Bangladesh connectivity projects under the new political situation.
- **Influx of refugees into India's northeast:** Led to destabilizing the borders and causing ethnic conflict in bordering states. E.g., Manipur unrest.
- **China's expanding footprint in the Indian Ocean region:** This could impact India's access to strategic maritime trade routes through the Mongla Port in Bangladesh.



- **Competing with China:** China's significant economic and political influence in East Asia can make it challenging for India to gain traction. E.g., **In 2023, the trade between China and ASEAN reached USD 911.7 billion.**
- **Expanding India's trade deficit with ASEAN:** From US\$ 7.5 billion annually when the agreement was enacted in 2011 to approximately US\$ 44 billion in 2023.

Way Forward

- **Trade:** Re-negotiation of ASEAN Trade in Goods Agreement (ATIGA) at the earliest and address the issue of widening India's trade deficit with ASEAN.
- **Infrastructure:** Enhanced connectivity through completion of pending infrastructural projects
- **Security cooperation:** Enhance maritime security cooperation in the Indian Ocean and South China Sea
- **Cultural diplomacy:** Leverage shared cultural heritage, especially with Buddhist-majority countries.
- **Multilateral engagement:** Strengthen ties with other regional powers like Japan, Australia and Taiwan.

2.2.1. INDIA VIETNAM RELATIONS

Why in the News?

The Prime Minister of Vietnam undertook a State visit to India.

More on news

Outcomes of the Visit include:

- **Plan of Action (2024-2028):** Plan of Action announced to implement the Comprehensive Strategic Partnership.
- **Line of Credit:** India extended a US\$ 300 million credit line to enhance Vietnam's maritime security.
- **Cultural Cooperation:** A Letter of Intent was signed to conserve and restore the "My Son" World Heritage Site temples.
- **MoUs Signed:** Agreements on cooperation in radio and television, and the development of the National Maritime Heritage Complex in Lothal, Gujarat.
- **Other Announcements:**
 - Virtual inauguration of an Army Software Park in Nha Trang, Vietnam.
 - Vietnam will join the Coalition for Disaster Resilient Infrastructure (CDRI).



India-Vietnam Relations

- **Background:** India supported Vietnam's independence from France, objected to the US involvement in Vietnam in the 1960s and was one of the first countries to recognise a united Vietnam in 1975 after the war with the US.
- **Strategic Partnership:** Bilateral relations between the two countries were elevated to a 'Strategic Partnership' in 2007 and a **"Comprehensive Strategic Partnership" in 2016.**
 - Their current cooperation is guided by the **Joint Vision for Peace, Prosperity and People 2020.**
- **Economic Cooperation:** Bilateral trade stood at **US\$ 14.82 billion** in 2023-2024.
 - Vietnam is India's **23rd-largest global trade partner and 5th largest among ASEAN** countries.
- **Defence Cooperation:** Defence cooperation is multi-faceted and includes **defence dialogues, training, exercises (PASSEX, VINBAX, and MILAN),** collaboration in **capacity building and Navy and Coast Guard ship visits.**
 - In 2022, both countries signed a **Joint Vision Statement on Defence Partnership** towards 2030 and a Memorandum of Understanding on **Mutual Logistics Support.**
- **Integration to supply chains:** Partnership with Vietnam can help India participate in building reliable, efficient and resilient regional and global supply chains.
 - Vietnam's Free trade agreement with European Union has further enhanced its role in the global trade regime.
- **Cultural:** India and Vietnam share over 2,000 years of cultural and civilizational ties, with a strong connection through their shared Buddhist heritage.

Significance of Vietnam for India

- **Geostrategic location:** Vietnam's position in the Indo-Pacific is crucial for maintaining secure and stable trade routes.
- **Countering China:** India opposes China's claim in Ladakh and Arunachal Pradesh while Vietnam has differences over Chinese claims over the Paracel and the Spratly Islands in the South China Sea (SCS).
 - Vietnam remains one of the most strident voices in Southeast Asia against China's unilateral actions in the SCS.
- **Energy security:** Indian companies have invested in oil and gas exploration projects in the Vietnamese waters in the South China Sea which are extremely rich in hydrocarbon reserves.
 - A consistent supply of hydrocarbons from Vietnam can help ensure energy security in India.
- **Act East Policy:** Vietnam is a core partner of India in ASEAN and a critical partner in India's Act East policy and the Indo-Pacific vision.
- **Support for India on international platforms:** Vietnam strongly supports India's permanent membership in an expanded UN Security Council.

Challenges in India-Vietnam relations

- **Balancing China:** Vietnam, like other neighbors, is cautious of provoking of China, leading to reluctance in deepening military ties with India.
 - Chinese claims over the South China Sea can threaten India's prospects of exploring hydrocarbons in the region.
- **Modest trade:** Despite growth in trade with India, overall it remains modest compared to Vietnam's trade with China (around \$100 billion); and the U.S. (\$142 billion).
- **Trade routing from China:** Economic Survey 2023-24 noted that the rise in trade through countries such as Mexico and Vietnam are a result of Chinese firms re-routing their supply through these countries.
- **Reluctance in Military Deals:** Despite India's line of credit for military purchases, Vietnam has been hesitant to use it fully, and has resisted buying the Akash surface-to-air missile.
- **Cultural gap:** There is a significant cultural, custom and language gap between people from both countries.

Initiatives taken by India to strengthen relations with Vietnam

- **Mekong-Ganga Cooperation (MGC):** An initiative by India and five ASEAN countries, (Cambodia, Lao PDR, Myanmar, Thailand, and Vietnam) for cooperation in tourism, culture, education, as well as transport and communications.
- **Quick Impact Projects: It is being undertaken by India in** various provinces of Vietnam under MGC framework
- India provides **training, capacity building** and educational courses in Indian for Vietnamese nationals.
- India handed over an indigenously built missile **corvette INS KIRPAN** to Vietnam in 2023.

Way ahead

- **Enhancing economic cooperation:** Promoting joint ventures, enhancing physical and digital connectivity, encouraging e-commerce, upgrading regional trading architecture and mutually providing greater market access etc.
- **Bridging Connectivity Gap:** The India-Myanmar-Thailand trilateral highway could link up with already existing roads like the one linking Thailand with the Vietnamese port of Da Nang.
- **Deepening Cultural cooperation:** People-to-people exchanges need to be further strengthened, as there is significant goodwill that the two states can leverage.
- **Realising converging interests:** India and Vietnam geographically lie at the centre of the Indo-Pacific region.
 - Both countries would play a major role in this strategic space which is becoming a core theatre of competition for power and influence amongst the major powers.

2.2.2. INDIA MALAYSIA RELATIONS

Why in the News?

The Prime Minister of Malaysia paid a State visit to India.

Key Outcomes of the visit

- **Comprehensive Strategic Partnership:** Enhanced Strategic Partnership established in 2015 was elevated to Comprehensive Strategic Partnership.

- **Malaysia joining IBCA:** Malaysia decided to join the **International Big Cat Alliance (IBCA)** as its founding member.
 - IBCA launched in 2023 to mark the 50th anniversary of Project Tiger aims to **reach out to 97 range countries** covering the **natural habitats of seven big cats** (Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar and Puma).
- **Digital technology Cooperation:** MoU on Digital Technologies was signed and endorsement of early convening of **Malaysia-India Digital Council**.
 - The Council will guide engagement in areas like **Digital Public Infrastructure, digital B2B partnership, digital capacity building, cyber security, emerging technologies** such as 5G, quantum computing,
- **India-Malaysia Startup Alliance:** To strengthen startup ecosystems in both nations.
- **Support for review of AITIGA:** Both countries agreed to support and expedite the review process of the ASEAN-India Trade in Goods Agreement (AITIGA) to make it more trade-facilitative and beneficial for businesses.

Importance of Malaysia for India

- **Geopolitical Alignment:** Malaysia's stance against Chinese demands for withdrawal of its plan for oil and gas exploration in an oil-rich maritime area off Sarawak state on Borneo Island in the South China Sea **demonstrates its commitment to maintaining sovereignty**.
 - This aligns with **India's vision for a free, open, and inclusive Indo-Pacific region**.
- **India's Act East Policy:** Malaysia holds a crucial position in expanding India's trade with ASEAN, aligning with India's Act East Policy, and supporting ASEAN's Indo-Pacific Perspective (AOIP) and the Indo-Pacific Initiative (IPOI).
- **Securing Sea Lines of Communication (SLOC):** Malaysia's proximity to the crucial Strait of Malacca enhances its importance in **securing strategic SLOC for securing vital trade and strategic routes in the Indian Ocean Region**.
 - Also, as Strait of Malacca is closer to Andaman Sea it is vital for internal security of India.
- **Cooperation on international platforms:** India sees Malaysia as a strong **Global South partner**. Malaysia's has participated in all three editions of the Voice of the Global South Summit (VOGSS) led by India.
 - Recently, India also agreed to work with Malaysia on its request to join the **BRICS grouping**.

About India-Malaysia Relations

- **Background:** India established diplomatic relations with the Federation of Malaya (predecessor state of Malaysia) in 1957.
- **Economic:** Bilateral trade reached \$20.01 billion in FY 2023-24, making Malaysia India's 16th largest trading partner. Malaysia is India's **3rd largest trading partner in ASEAN**.
 - Key initiatives include the Joint Committee Meeting of the Malaysia-India Comprehensive Economic Cooperation Agreement (MICECA), efforts to promote trade in local currencies, and central bank cooperation.
- **Oil palm diplomacy:** Malaysia contributes three million metric tonnes of palm oil out of the 9.7 million tonnes India imports every year.
 - Malaysia has expressed its willingness for providing services like research and development, seed supply and partnership management experience to **India's National Mission on Edible Oils**.
- **Defence Cooperation:** Scope of existing bilateral cooperation includes joint ventures, joint development projects, procurement, logistic and maintenance support and training.
 - **Malaysia-India Defence Cooperation Committee (MIDCOM)** meets regularly to review the progress in defence cooperation on an annual basis.
 - First regional office of HAL was also inaugurated in Kuala Lumpur 2023.
- **People-to-people connect:** Malaysia houses over two million people of Indian origin, the third-largest diaspora after the United States and the United Arab Emirates.

Challenges in India-Malaysia Relations:

- **Weak Economic Cooperation:** India-Malaysia trade is much smaller compared to Malaysia-China trade, which exceeds \$100 billion. India's export restrictions on rice, sugar, and onions have affected Malaysia's food security.
- **Defense Geopolitics:** India struggles to secure defense deals with Malaysia. In 2023, Malaysia chose South Korea's FA-50 jets over India's Tejas, despite it being cheaper and adaptable to both Russian and Western weapons.
- **Political Tensions:** Malaysia's criticism of India's actions in Kashmir and the Citizenship Amendment Act strained relations.

- **Extradition Issues:** Malaysia has repeatedly denied India's extradition requests (for of Zakir Naik) since 2017, causing friction.
- **China Relations:** Malaysia prefers quiet diplomacy with China, avoiding public confrontations and focusing on discreet negotiations, particularly over the South China Sea.
 - China is also involved in developing Malaysia's **Melaka deep-sea port project to undermine Singapore** or cutting a canal through the **Isthmus of Kra to bypass the Malacca Strait**.
- **Labour Exploitation:** Indian migrant workers face harassment and exploitation in Malaysian farms, raising concerns about bonded labour.

India's Initiatives to strengthen relations with Malaysia

- **Special allocation of 100 seats** under India's Technical and Economic Cooperation (ITEC) Programme **for Malaysian nationals**.
- **Joint Committee Meeting of Malaysia-India Comprehensive Economic Cooperation Agreement (MICECA)** for deepening economic partnership
- **Netaji Subhash Chandra Bose Indian Cultural Centre** in Kuala Lumpur promotes Indian languages, dance, and yoga.
- **Malaysia** is one of the Overseas markets **accepting UPI payments**

Way ahead for improving India Malaysia relations

- **Deepening economic cooperation:** Initiatives like avoiding double taxation, customs cooperation, better air connectivity, and airline collaborations can boost trade and tourism.
 - Early conclusion of review of AITIGA, a strong diaspora, younger population compared to China, **and rapid digitization bode well for enhancing mutual trade prospects in the future**.
 - ✓ ASEAN is one of the major trade partners of India with a share of 11% in India's global trade. The upgradation of AITIGA will further boost bilateral trade.
- **Strengthening Defense Cooperation:** Geopolitics play a key role in such defence contacts. Therefore, India's foreign policies and outreach should also deepen defence cooperation in line with South Korea's New Southern Policy (NSP).
 - During the recent meeting both countries agreed to sharing of information and best practices to counter terrorism and other traditional and non-traditional threats to **address the linkages between terrorism and transnational organized crime**.
- **Collaborating on India-led Initiatives:** Malaysia can be brought into India's global initiatives like International Solar Alliance to strengthen ties.
- **Soft power**
 - **Traditional Medicines: They have agreed for** establishment of the **Ayurveda Chair** by India's Institute for Training & Research in Ayurveda (ITRA) Malaysia and also agreed to conclude the MoU on Pharmacopoeia cooperation at an early date.
 - **Cultural Diplomacy:** Malaysia, with its large Buddhist population, can play a key role in India's tourism efforts, like the 'Buddhist Circuit' initiative, which connects heritage sites for Buddhist tourists.
 - ✓ Discussions for establishment of **Tiruvalluvar Chair of Indian Studies** in Malaysia have started.

2.3. INDIA-CENTRAL AND EASTERN EUROPE RELATIONS

Why in the News?

Recent visit by India's PM to Poland showcases strategic shift towards raising Central and Eastern Europe's importance in India's foreign policy.

Significance of India's-Central and Eastern Europe Relations

- **Strategic Location:** Central and Eastern Europe stands at the crossroads of Europe and Asia, a strategic location between Russia and the Middle East.
 - Moreover, these countries can act as the main gateway for Indian exports to Europe.

- **To manage China's influence in the region: 16+1 initiative** and Chinese investments through Belt and Road (BRI) initiative has not gone down very well with the EU which perceives China's outreach as an attempt to create differences within the bloc.
 - **16+1 is an initiative by China to promote business and investment relations with 16 countries of Central and Eastern Europe.**
 - EU sees India as an economic counterweight to China.
- **Reformed Multilateralism:** Various Eastern European countries have shown unequivocal support for India's bid for a permanent seat on the UNSC.
 - For instance, Visegrád Group (V4 countries) i.e. Czech Republic, Poland, Hungary, Slovakia has also shown support for India's Nuclear Supplier Group (NSG) membership.
- **Global Power Projection:** India positioning itself as a leading global power with influence well beyond its South Asian neighbourhood.

India' Outreach to Central and Eastern Europe

- **Strategic engagement:** India has increased its diplomatic and economic engagements with Central and Eastern European (CEE) countries.
- **Economic & commercial Relations:** Poland is India's largest trading & investment partner in Central & Eastern Europe (**Bilateral trade worth US\$6 billion in 2023**).
- **India-Middle East-Europe Economic Corridor (IMEC):** Announced on the side-lines of the G20 summit, it aims to integrate Asia, Europe and the Middle East.
- **Cultural and Educational Relations:** India is leveraging its cultural heritage to strengthen ties with CEE countries.
 - Strong tradition of Indology studies in Poland, Yoga, **Good Maharaja Connection** (Maharaja Jam Saheb Digvijaysinhji) etc.
- **Strengthening of India-EU strategic partnership:** India is deepening its diplomatic engagements with regional member states like Poland, bolstering the India-EU partnership.
- **Strategic Autonomy at display:** E.g. India's PM visit of Ukraine shows India's view of Ukraine is independent from that of Russia.



Concerns in India's Reorientation toward Eastern Europe

- **India-Russia relations:** Traditional Soviet relations perspective of India with respect to Eastern Europe undermines current geopolitical opportunities.
- **Changing geopolitics of the Eurasian region:** E.g. Russia Ukraine War
- **Growing Chinese influence:** China's rising economic and political footprint in the region with initiatives such as Belt and Road Initiative
- **Delayed implementation of Projects:** E.g. India-EU Connectivity Partnership, India-Middle East-Europe Economic Corridor (IMEC)
- **Ensuring autonomy while managing divergent interests:** E.g. QUAD, SCO, G7

Conclusion

As India-EU cooperation deepens, it is vital for the two sides to revitalise their ties with the broader Central and Eastern European region. The geopolitical significance of Eastern Europe has been rightly pointed by Halford Mackinder with his Heartland Theory, “Whoever rules East Europe commands the Heartland; whoever rules the Heartland commands the World-Island; whoever rules the World-Island commands the World.

2.3.1. INDIA-POLAND RELATIONSHIP

Why in the News?

Recently, Indian PM visited Poland which also concluded with 70th anniversary of diplomatic relations.

Key Highlights of Official Visit

- Agreed on a **social security agreement** (to protect interests of **cross borders workers**)
- India to start **Jam Saheb of Nawanagar Youth Exchange Program** between India and Poland.
 - During World War II (1942), Maharaja Jam Saheb Digvijaysinhji established a camp in Jamnagar to **shelter refugee Polish children** who had been **displaced from USSR**.
- Both countries agreed to elevate bilateral relations to Strategic Partnership and agreed to **execute a five-year Action Plan (2024-2028)** for Implementation of the same.

Five year Action Plan for Strategic Partnership

- **Political Dialogue and Security Cooperation:** Ensure holding of annual political dialogue at the level of deputy minister in charge of foreign relations.
 - Encourage relevant institutions to hold regular consultations on security and defence cooperation to promote contact between defence industries, modernise military equipment, and address outstanding issues.
- **Trade and Investment:** Meetings of Joint Commission for Economic Cooperation at least twice every five years.
 - Both sides will enhance cooperation in economic security by focusing on increasing supply chain resilience and mitigating risks associated with trade dependencies.
- **India-EU:** Co-operation in early conclusion of **India-EU trade and investment negotiations**, operationalization of India-EU Trade and Technology Council etc.
- **Terrorism:** Co-operation in designating individuals affiliated with groups that are listed by UNSC 1267 sanctions committee.
- **Other areas of cooperation:** Cyber Security, circular economy, waste-water management etc.



Do you know ?

► Diplomatic relations were **established in 1954**, leading to opening of Indian Embassy in Warsaw in 1957.

2.4. INDIA-UKRAINE RELATIONSHIP

Why in the News?

India's Prime Minister visited Ukraine for the first time since the establishment of diplomatic relations in 1992.

Key Highlights of the Visit

- **Prospect:** Both countries agreed to upgrade comprehensive partnership to a strategic partnership in future.
- **BHISHM Cubes:** India provided Ukraine Bharat Health Initiative for Sahyog Hita & Maitri (BHISHM) cubes under 'Aarogya Maitri' project.

- BHISM cubes are innovative portable hospitals and are designed to provide rapid medical assistance in emergencies

- **Agreements signed:** on agriculture and food industry, medical products regulation, Indian Humanitarian Grant Assistance and programme of cultural cooperation for year 2024-2028.

What is the Significance of PM's Visit to Ukraine?

- **Mending fences with Ukraine:** India's trip to Kyiv aims to reclaim lost bonds with Ukraine in the post-soviet era.
- **Establish India as a Global Mediator:** India is positioning itself as a peacemaker making it an eminent player at the global high table and aims to have influence beyond its South Asian neighbourhood.
 - **Moreover,** India's peacemaker role is not just about resolving the Ukraine crisis but also enhance its global credibility compared to other emergent powers such as China.
- **Shift in India's Neutrality in foreign policy:** It showcases the shift from maintaining equal distance (Non-Alignment) from all countries to aiming for close ties with all countries.
 - Moreover, India has maintained that it was never neutral but on side of peace in Russia-Ukraine conflict.
- **Delicate Balancing Act between the West and Russia:** With India's multi-alignment approach, it is showcasing India's delicate act of balancing between West and Russia during the on-going war.
- **India's larger Europe Push:** Earlier, India foreign relations with Europe have been focused on only Europe's big four countries Russia, Germany, France, and Britain. India's quest for Europe's peace makes a larger push towards Europe.



Role India can play in Mediation of Russia-Ukraine war

- **Cooperation in upholding UN Charter, principles of international law,** respect for territorial integrity and sovereignty of states.
- **Ensuring global food security** by underscoring importance of uninterrupted and unhindered supply of agricultural products.
- **Development of innovative solutions** with multi-stakeholder consultations having broader acceptability

Significance of Ukraine for India

- **Defence Cooperation:** India's military hardware, primarily of Russian and Ukrainian origin, faces maintenance challenges due to the Russia-Ukraine war.
- **Trade and Economy:** Bilateral trade between the two countries reached **US \$ 3.386 billion (2021-22)**.
 - Main items of export from Ukraine to India are agricultural items, metallurgical products, plastics and polymers.
 - ✓ Pre-war, **Ukraine was a significant source of sunflower oil for India.**
 - Pharmaceuticals, machinery, chemicals, food products etc. are the major Indian exports to Ukraine.
- **Post-War Recovery and Reconstruction:** India and Ukraine agreed to explore the possibility of Indian companies being involved in Ukraine's reconstruction and recovery and it is expected to offer huge opportunities for India's strained labour market as well.
- **Reformed Multilateralism:** Ukraine's support reformed and expanded UNSC with India's permanent membership of UNSC to reflect global realities.

Challenges in India-Ukraine Relationship

- **Russia-India Relations:** India's historical ties with Russia complicate its ability to support Ukraine fully, leading to a delicate diplomatic balancing act.
- **Decline in Trade:** There has been significant reduction in the annual bilateral trade in goods since year 2022 due to on-going war. India's exports to Ukraine dropped by 22.8% while Ukraine's exports to India fell by 17.3%.

- **Historical baggages:** Ukraine's criticism of India's Nuclear Test, supply of defence equipment's to Pakistan and Kashmir policy has also hindered full level engagement.

Conclusion

India should position itself as a proactive mediator, consistently advocating for dialogue and peaceful resolution to bring conflicting parties to the negotiation table. Additionally, revitalizing trade relationships through improved ease of doing business, expanded market access in complementary areas, and harmonized standards and certification procedures will be crucial for long-term economic stability and cooperation.

2.5. PARA-DIPLOMACY

Why in the news?

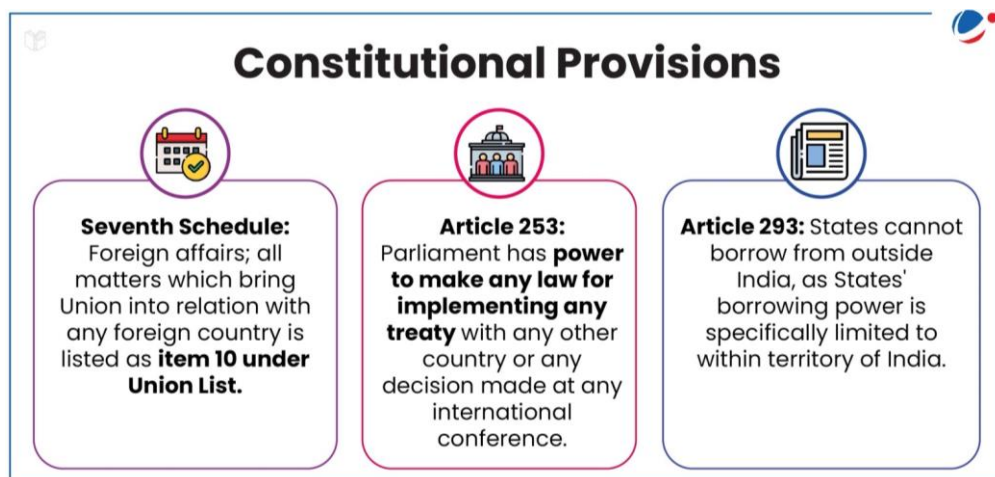
Recently, Ministry of External Affairs (MEA) has criticized **Kerala government for appointing 'External Cooperation' Official.**

More on news

- According to MEA, **State Governments should not intrude into matters that are beyond their constitutional jurisdiction** and it is an encroachment on the union list.
 - Constitution of India under the seventh schedule, Union list, item 10, clearly **specifies that foreign affairs and all matters which bring the Union into relation with any foreign country**, are the sole prerogative of the Union Government.
- The move has drawn attention to an aspect of India's foreign policy landscape – **the role of subnational entities in shaping international engagement** known as “para-diplomacy,”.

About Para- Diplomacy

- Para-diplomacy deals with the **foreign policy capacity of subnational governments.**
 - It is also known as ‘state diplomacy’, ‘continent diplomacy’, ‘regional diplomacy’, and ‘subnational diplomacy’.
- **Para-diplomacy makes space for external relations of subnational or federal units** that might indulge themselves in international activism to promote their own interests.
 - It is **opposite to conventional diplomatic relations** that fall under exclusive domain of sovereign nation states exercised by central governments.
- **Ministry of External Affairs** has also set up a new division – **"States Division"** in 2014 to coordinate with States and Union Territories for further facilitation of their efforts to **promote their exports and tourism and attract more overseas investments and expertise.**



Need for Para-Diplomacy

Given the **diversity and the cultural and geographical interconnectedness of the Indian subcontinent**, states have always played a substantial role in foreign policy decision-making.

- **Regional Strengths:** Para-diplomacy **allows states to capitalize on their specific advantages** to promote trade and foster cultural exchanges with foreign countries.
 - For example, Kerala leveraged its **diaspora** to promote trade, investment, and cultural exchange with Gulf countries.

- **Attracting Investment:** States can **tailor their investment policies to attract foreign direct investment** by showcasing their advantages, such as skilled labour, natural resources etc. and provide a conducive investment climate.
 - For example, investment summits organised by various states like Vibrant Gujarat, Progressive Punjab and Vibrant Goa.
- **Cultural Diplomacy:** Para-diplomacy **enables states to strengthen their historical and cultural ties**, promoting tourism, cultural exchanges, and educational collaborations.
 - For example, **Tamil Nadu connections with Sri Lanka rooted in ethnicity**, West Bengal ties with Bangladesh rooted in Bengali culture etc.
- **Contribution to National Foreign Policy:** While foreign policy remains under central government's purview, states can **contribute by building relationships that align with national interests**, thereby complementing India's overall diplomatic efforts.
 - For example, West Bengal CM's visit to Bangladesh in 1996, paved way for the Farrakka Water sharing treaty.
- **Strengthen federalism:** Para-diplomacy can help **strengthen India's federal system by empowering states to play a more active role in international affairs**. This can lead to a more decentralized and responsive foreign policy.

Criticism associated with Para Diplomacy:

- **Constitutional:** Foreign affair is under Union List in the Indian Constitution; therefore, states' involvement in international relations could be seen as **encroachment on the Union government's powers**.
- **Resource Constraints:** Establishing and maintaining international partnerships, hosting delegations, etc. can put **strain on states financial resources**.
- **Political differences:** The political party in power at the state level may have **different priorities or ideologies than the central government**, leading to conflicts or lack of support by central government.
 - For example, Dabhol Project (Maharashtra), began only after active support of the then Central government.
- **Divergent Interests:** State governments may have **interests that diverge from the national foreign policy**, leading to inconsistencies and potential conflicts.
 - For example, Teesta Water Sharing Agreement was stalled due to resistance from West Bengal Government.
- **Bilateral relations:** Indirect influence of state governments in foreign policy decisions has **potential to affect India's bilateral relations** as well as its standing on international laws.
 - For example, India's vote on UNHRC resolution against a friendly neighbour, Sri Lanka.
- **Security Concerns:** Engaging in para-diplomacy might inadvertently **affect national security especially in sensitive regions** e.g. North East region, states bordering Pakistan or China.

Way ahead

- **Institutional mechanism:** Effective institutional mechanisms through the **creation of consulates or consular offices in individual states** or setting up of federal foreign affairs offices under the supervision of the MEA. Inter-State Council (ISC) can also be used for state involvement in foreign policy.
 - For example, Ministry of External Relations has established a separate administrative service that creates dialogue with municipalities and federal states in Sao Paulo, Brazil.
- **Capacity Building:** Allocate **adequate resources to state-government** and provide **training to state officials** on international relations, diplomacy, and negotiation skills.
- **Best Practices Sharing:** Create platforms for states to **share best practices and successful para-diplomacy models**. Further, regularly assess impact of para-diplomacy initiatives and refine strategies based on feedback and outcomes.
- **Regular Assessment:** Implement mechanisms to **regularly assess the impact of para-diplomacy initiatives** and refine strategies based on feedback and outcomes.
- **Clear guidelines:** States Division, established under MEA, must engage in **developing policy formulation and clearer guidelines** to strengthen subnational diplomacy, and aligning both states and overall national interests.

Scan the QR code to know more about **Paradiplomacy**.

Weekly Focus #59: Paradiplomacy_The Pros and Cons of Foreign Policy Decentralisation



2.6. SOUTH CHINA SEA TENSIONS & INTERNATIONAL TRADE

Why in the News?

Reports of aggressive and dangerous conduct by Chinese vessels in the fiercely contested South China Sea have surged over the past 17 months.

More on the News

- Recently, China has demanded Malaysia to immediately halt all activities in an oil-rich area off Sarawak waters.
 - This is despite the fact that the reefs are only 100 km from Malaysia and almost 2,000 km from mainland China.

About South China Sea (SCS)

Geographical location of SCS

- The SCS is an **arm of the western Pacific Ocean** around Southeast Asia.
- It is located in south of China, east and south of Vietnam, west of the Philippines, and north of Borneo.
- It contains more than **200 mostly uninhabitable** small islands, rocks and reefs.

The Conflict

- 1992:** China lays claim to the entire SCS based on its historical right to the area dating from the Western Han dynasty.
- 2016:** Permanent Court of Arbitration rules in favor of Philippines and finds “nine-dash line” has no legal basis.

Importance for Global Trade

- About a third of global maritime** trade passes through the 3.5 million square kilometer seaway annually.
- Around 40% of petroleum products** traded globally are delivered via the sea every year.



Key Players in South China Sea (SCS)



China: It claims the biggest share, maintaining its right to almost 90 per cent of SCS, occupying all of the Paracel Islands and nine reefs in the Spratly's.



Taiwan: With their shared history, Taiwan's broad claims to the area reflect those of China's.



Vietnam: It has actively ruled over both the Paracels and the Spratlys since the 17th Century.



The Philippines: China's claims overlap with the Philippines' exclusive economic zone, which Manila calls the West Philippine Sea.



Malaysia and Brunei: Argue the areas they claim fall within their Exclusive Economic Zones, as defined by the UN Convention on the Laws of the Sea (UNCLOS).



The US: has no territorial rights, but it has become a significant figure conducting freedom of navigation exercises.

Reasons for the conflict in South China Sea (SCS)

- **Territorial disputes:** China's assertiveness in the SCS has steadily increased, resulting in heightened tensions with Southeast Asian claimant states.
 - **Between 2013-2015:** China built artificial islands with a total area of close to 3,000 acres on seven coral reefs it occupies in the Spratly Islands.
 - China has **fully militarized three islands in SCS.**
- **Resource competition:** Approximately 3.6 billion barrels of petroleum and other liquids and 40.3 trillion cubic feet of natural gas in the SCS; Competition for rare-earth **mineral** wealth on the seafloor.
 - The South China Sea's fisheries generate \$100 billion annually. They account for about 12 percent of global fish catches.
- **Nationalism and domestic politics:** One of the most important factors in the SCS conflict has been the accentuation of nationalism in claimant countries. E.g., both China and Vietnam have used nationalistic rhetoric to posture their claims in SCS.
 - **Besides, entry of the US as a player in the conflict** (Philippines and US defence pact) has been an irritant to China.
- **Strategic interests:** The SCS is the shortest way to get from the Pacific to the Indian Ocean, and is host to some of the busiest shipping lanes in the world. It connects East Asia with India, Western Asia, Europe, and Africa.

How SCS dispute pose threat to global trade?

- **Chinese aggression:** The Chinese military has staged increasingly aggressive actions in the seaway recently, including clashes with Filipino ships, fuelling fears of a full-scale conflict.
- **The United States:** It has repeatedly warned that it is obligated to defend the Philippines if they were to be attacked, including in SCS.
- **Taiwan issue:** Beijing's use of military force to bring the democratic island under its control could further raise tensions in SCS.
- **Potential blockade of Malacca Strait during China-Taiwan conflict:** It could severely disrupt global trade while exacerbating existing congestion and security issues.
- **Increased Shipping costs:** Escalating tensions in the SCS could create a third global shipping crisis front (other being Red Sea and the Strait of Hormuz), potentially causing maritime rerouting, delays, price increases, shortages, and revenue losses for key Asian ports.

India & South China Sea

- **India's Involvement:** India has expanded its influence in the SCS through its **Look East Policy**, focusing on **economic and strategic engagement with Southeast Asian nations**, despite China's disapproval.
- **Strategic Importance for India:**
 - **Waterway:** The SCS connects the Indian Ocean with the East China Sea via the Malacca Strait, a crucial waterway for global trade.
 - **Trade:** Majority of India's international trade is sea-borne, with half passing through the Malacca Straits, making the region vital for India's economy and national security.
 - **Significant potential energy reserves**, which are of interest to India as it seeks to secure energy sources to meet growing domestic demand.
 - ✓ Maritime assets such as Oil Exploration Block **128, off the coast of Vietnam that the two countries are jointly exploring.**
- **India's Objectives in the SCS:** India holds a principled position when it comes to using the global commons such as **maritime domains that it should be free, open and "inclusive"**.
- **India's Strategy:**
 - **Deepen economic and strategic ties** with ASEAN countries.
 - **Conduct joint naval exercises, military training, and arms sales with regional states (BrahMos to Philippines).**
 - **Engage in offshore energy development** projects in the SCS.
- **Policy Initiatives:** Act East, Neighbourhood First and Security and Growth of All in the Region (SAGAR) policies, along with strategic alignment by joining QUAD.

Way Forward

- **Diplomatic Engagement:** Involvement in candid and productive discussions among the contending parties, integrating impartial arbitrators if required.
- **Confidence-Building Measures:** Application of procedures to augment transparency, communication, and mutual confidence among regional entities.
- **Compliance with International Norms:** Observance and fortification of the United Nations Convention on the Law of the Sea (UNCLOS) and corresponding international standards.
- **Regional Collaboration:** Reinforcement of regional organizations and frameworks to encourage cooperation and the peaceful arbitration of disputes.

2.7. NEWS IN SHORTS

2.7.1. INDIAN AMERICAN DIASPORA

Report by BCG and Indiaspora highlights contributions of Indian Americans to US Society.

- Despite constituting only about 1.5% of U.S. population, Indian diaspora has made substantial contributions to country.

Contributions of Diaspora in USA:

- **Economic impact:** CEOs of Indian origin head 16 Fortune 500 companies.
 - Examples of Business Leaders include **Satya Nadella, Shantanu Narayen (Adobe)** etc.
- **Cultural Influence:** Wide celebration of **Diwali and Holi**, celebrated chefs **e.g. Vikas Khanna**, Wellness practices with Indian Roots **e.g. Deepak Chopra**
- **Innovation, Research, and Development:** **13% of US scientific publications** had Indian American co-author. **Famous personalities include** Har Gobind Khorana, Abhijit Banerjee, Manjul Bhargava.
- **Government and Public Services:** **Kamala Harris** (first woman Vice President of Indian descent), **Bobby Jindal** (first Indian American Governor) etc.

Benefits for India:

- **Economic:** **US is** top source of remittance (\$26B out of \$113 billion in 2022-2023), Since 2000, US companies have invested \$ 63 billion in FDI.
- **Brain Gain:** ~20% of Indian unicorns have co-founders who have leveraged US higher education. **E.g. Rahul Chari (PhonePe), Harsh Jain and Bhavin Seth (Dream11).**
- **Political: Diplomacy and Lobbying (E.g. Indo-US civil nuclear deal),** Indian diaspora in global institutions **E.g. Gita Gopinath, Raghuram Rajan, Soumya Swaminathan etc**
- **Cultural Diplomacy & Soft Power:** 1 in 10 Americans practices **yoga** (2023), spreading of Indian **cuisine & Ayurveda.**
- **Indo-US scientific collaboration:** **E.g. NISAR, iCET etc.**



Scan the QR code to know more about **India's Diaspora.**

Weekly Focus #116: India Abroad: Legacy of Indian Diaspora



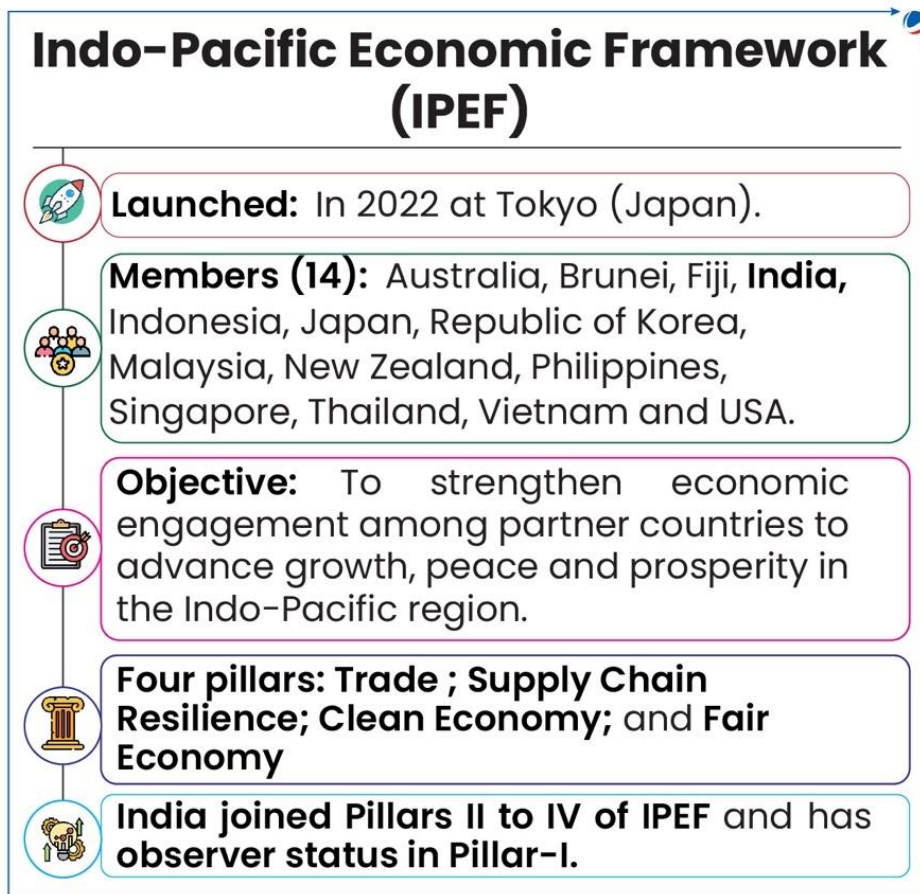
2.7.2. INDIA ELECTED AS VICE-CHAIR OF IPEF'S SUPPLY CHAIN COUNCIL

Pursuant to **Indo-Pacific Economic Framework (IPEF's) Supply Chain Agreement**, India and 13 other IPEF partners have established three supply chain bodies. These bodies include:

- **Supply Chain Council:** To pursue targeted, action-oriented work to strengthen supply chains for those sectors and goods most critical to national security, public health, etc.
- **Crisis Response Network:** To provide a forum for a collective emergency response to exigent or imminent disruptions.
- **Labor Rights Advisory Board:** To bring together workers, employers, and governments at the same table to strengthen labor rights and workforce development across regional supply chains.

Supply Chain Resilience (SCR)

- SCR is the **ability of a supply chain network to withstand disruptions** and minimize the effects of upheaval on revenues, costs and customers.
 - Supply Chain is the **interconnected journey of a raw materials, or products** from their assembly to final sale.
- **Threats to SCR:** Geo-political (e.g., disruption in energy supplies due to conflict between Russia-Ukraine), Economic (e.g., COVID-induced demand and supply shocks), etc.
- **Measures taken for SCR by India**
 - **Global:** Supply Chain Resilience Initiative (Australia, India, and Japan), Quad Supply Chain Initiative, etc.
 - **National:** PM Gati Shakti National Master Plan, National Logistics Policy, PLI Scheme for different sectors, etc.



2.7.3. SAINT MARTIN'S ISLAND

Reports have claimed that the US wanted to establish a military base in St. Martin's Island of Bangladesh.

About St. Martin's Island

- A small **coral** island, located in the **northeastern part** of the **Bay of Bengal**.
 - It is also referred as 'Narikel Jinjira' or Coconut Island, 'Daruchini Dwip' or Cinnamon Island, etc.
- Island was once an extension of the **Teknaf peninsula** but was separated due to the submergence of a portion of the peninsula.
- In 1974, Bangladesh and Myanmar reached an agreement that the island would be a part of Bangladeshi territory.
- **Geopolitical significance:** Located near Bangladesh and Myanmar.

2.7.4. KURSK REGION

Russia declared **emergency in Kursk region**.

About Kursk Region

- It is located in the **central part of the Eastern European Plain and borders Ukraine**.
- The basins of the **Dnieper (Seim, Psel) and Don rivers** are located on its territory.
- The main type of **soil is chernozem**.
- It has prospected deposits of **iron ore, phosphorites, peat, and building materials**.

2.7.5. ERRATA

- In the July 2024 Monthly Magazine, in **Article 2.6 "India–Pacific Islands Nations Relations,"** there was an error in the infographic of Pacific Island Nations. It incorrectly stated that the Tropic of Cancer passes over Australia. The correct information is that the **"Tropic of Capricorn passes over Australia"**.



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ENGLISH MEDIUM 2025: 22 SEPTEMBER
हिन्दी माध्यम 2025: 22 सितंबर



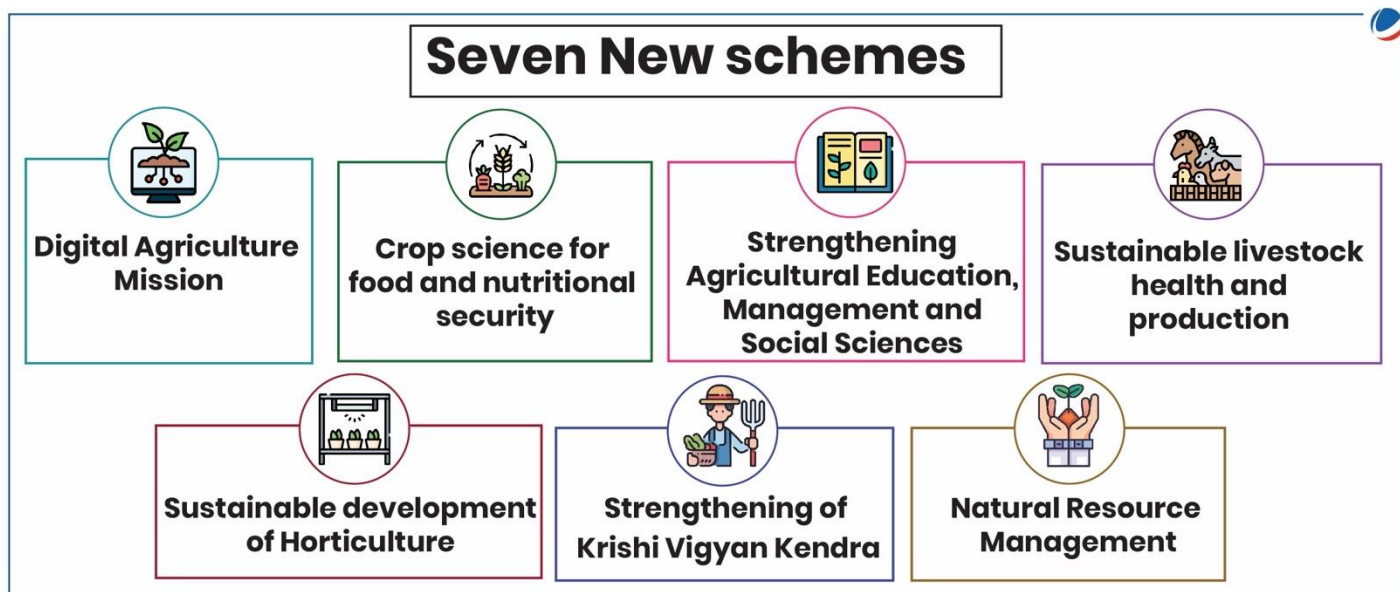
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3. ECONOMY

3.1. NEW SCHEMES FOR AGRICULTURE SECTOR

Why in the news?

Cabinet approves **seven major schemes** for improving farmers' lives and livelihoods with total outlay of Rs 14,235.30 Crore.



Note: Themes like Digital Agriculture and Livestock and Horticulture Sectors have been discussed in detail in the subsequent articles.

Current Status of Farmer's lives and livelihood

- Economic Survey 2022-23 notes that **65 per cent** (2021 data) of the country's **population lives in the rural areas** and **47 per cent of the population is dependent on agriculture for livelihood**.
- **Average monthly income** of Indian farmers was **Rs. 10,218 in 2018-19**.

Issues/Constraints in increasing livelihood of farmers

- **Technological Issues:**
 - **Use of outdated and inappropriate technology** due to lack of credit and low awareness.
 - ✓ For instance, only **47% of agricultural activities are mechanized in India** (lower than other developing countries such as **China (60%) and Brazil (75%)**).
 - **Issues in R&D:** Agricultural research in country is constrained by resource inadequacy, regulations and intellectual property rights (IPR).
 - ✓ India spends only **0.4% of agri GDP on R&D** and it is far below the levels in China, Brazil, and Israel.
- **Agricultural credit:** Access to institutional credit remains a constraint, especially in the case of tenant farmers.
- **Issues related to Natural Resource management:** Decline in soil organic matter, excessive fertilizer use, water scarcity, substantial area under rainfed agriculture, low water use efficiency etc.
- **Supply chain related issues:**
 - **Inadequate infrastructure:** **30-35% of fruits and vegetables are lost at various stages of the supply chain**, including harvesting, storage, grading, transport, packaging, and distribution.
 - **Barriers to exports:** Non-tariff trade barriers like **Sanitary and phytosanitary measures** and stringent guidelines for import of agricultural and processed food products hampers India's exports.
- **Low Productivity: E.g.,** As per FAO report, India's rice yield level still remains low at around 2.85 t/ha (China and Brazil have yield rates of 4.7 t/ha and 3.6 t/ha, respectively).
 - **Fragmented Landholdings, Poor Irrigation Facilities, Soil Degradation and Limited Access to Quality Inputs** are some of the reasons behind it.

- **Other issues:**
 - **Erratic Climate:** Government of India's **economic survey (2018)** estimated that the annual loss of US\$ 9-10 billion was due to the adverse effects of climate change.
 - **Low price realization:** There exists a large gap between farm harvest prices (FHP) and retail prices.
 - ✓ Prices also tend to fall below the minimum support prices in a good production year, leading to agrarian distress.

How will New Schemes help in improving farmer's lives and livelihood?

- **Leveraging technology:**
 - **Digital Agriculture Mission** will help in reducing potential yield loss through **precision farming**.
 - ✓ **Digital land map** can help Identifying suitable land for agriculture, optimizing land use.
 - ✓ **Weather Forecasting and Climate Modeling** helps to mitigate impact of extreme weather events and disasters.
 - **Crop science for food and nutritional security:** It will promote-
 - ✓ **Development of high-yielding, disease-resistant, and climate-resilient crop varieties through** traditional breeding techniques and modern biotechnological methods like genetic modification and gene editing (**e.g., CRISPR**).
 - ✓ **Bio fortification** to address micronutrient deficiencies (**hidden hunger**) in populations.
- **Agriculture education and outreach:**
 - **Strengthening Agricultural Education, Management and Social Sciences** will help develop sound understanding of **rural development theories**.
 - ✓ It will ensure strengthen **policy formulation and implementation** for improving rural infrastructure, credit facilities, market access, and social services.
 - **Strengthening of Krishi Vigyan Kendra (KVKs)** will make **quality technological products** (seed, planting material, bio-agents, and livestock) available to farmers and organize frontline extension activities to improve lives of farmers.
- **Special focus on sub-sectors:** Schemes for livestock and horticulture sectors will help enhance productivity in these high yielding sectors in a sustainable manner.
 - **E.g., Sustainable livestock health and production** focuses upon Dairy production and technology development, Animal genetic resource management, etc.

Other structural measures that can be taken: Recommendations of Ashok Dalwai Committee

- **Enable farm owners to transit from status of cultivators to farm managers:** By outsourcing all possible farm operations to achieve resource use efficiency and effective outcome.
 - A **system of professional service providers** (including Original Equipment Manufacturers – OEMs) can be encouraged to take over responsibility for cultivation services such as pest management, irrigation management and harvest management etc.
- **Redefining mandate of agriculture:** To expand its horizon beyond currently predominant deliverables i.e. **food and nutrition security**, Agriculture should also be mandated to generate raw materials to support industrial enterprises e.g. **chemicals, construction, energy, fibre, food, etc.**
- **Adopting Secondary agriculture:** that promotes value addition activities by using farm generated natural resources other than principal yield.
- **Adopting 'Fork to Farm' approach:** By maximizing monetization possibilities by upgrading agro-logistics (**storage & transportation**), **agro-processing and marketing**.
- **Increase Variety Replacement Ratio (VRR):** Phase out old varieties of seeds and replace them with hybrid and improved seeds to enhance productivity for 128 agro-climatic zones of country.
- **Water management:** Efficient use of water through **micro-irrigation**, promoting **ground water recharge** and **agro climate based cropping/production system**.
- **Diversification of Sector:** Following shift in focus/emphasis is suggested-
 - From major cereals (paddy & wheat) to **nutri-cereals**
 - From **only foodgrains** (cereals + pulses) to fruits, vegetables and flowers
 - From **carbohydrates only to proteins (pulses)**
 - From **only floral/vegetative proteins** to floral + faunal/animal based proteins (eggs, milk, meat and fish)
 - From **field crops only to horticulture** + dairy + livestock + fisheries, etc.

3.1.1. DIGITAL AGRICULTURE MISSION

Why in the news?

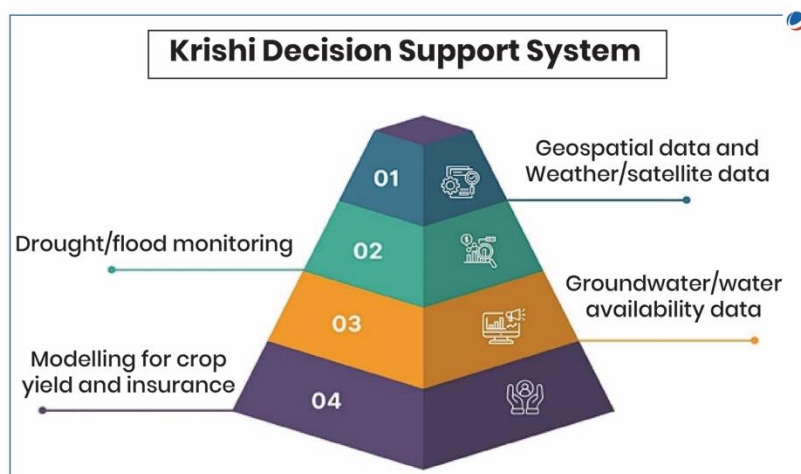
Recently, the **Union Cabinet approved the Digital Agriculture Mission** with a **total outlay of ₹2,817 Crore**.

About Digital Agriculture Mission (DAM)

- It is an **umbrella scheme** based on the structure of **Digital Public Infrastructure (DPI)** aimed at using **technology to improve farmers' lives**.
- It is in line with the **Union Budgets' 2024-25 and 2023-24** announcement of **implementing DPI in agriculture**.

Key features of the Mission

- It is built on **2 foundational pillars**:
 - **Agri Stack (Kisan ki Pehchaan)**: A **farmer-centric DPI** to **streamline services and scheme delivery** to farmers with **3 key components**:
 - ✓ **Farmers' Registry**: Issuance of '**Farmer IDs**', created and maintained by the **State Governments/ Union Territories**, which will act as a trusted digital identity for farmers, similar to **Aadhaar**.
 - ✓ **Geo-referenced village maps**: **Linking** of the Farmer IDs to **farmer-related data**. E.g. **Land records, demographic** and family details etc.
 - ✓ **Crop Sown Registry**: Maintaining a record of crops sown in **each season** by farmers through **mobile-based ground survey**, that is, **Digital Crop Survey**.
 - **Krishi Decision Support System (DSS)**: To **integrate remote sensing data** on crops, soil, weather, and water resources into a **comprehensive geospatial system**.
- **Soil Profile Mapping**: Detailed **soil profile maps** on a 1:10,000 scale for approximately **142 million hectares** of agricultural land.
 - **Digital General Crop Estimation Survey (DGCES)** will provide **yield estimates** based on scientifically designed **crop-cutting experiments**.
- **Key Targets**:
 - Create digital identities for **11 crore farmers over three years** (6 crores in FY 2024-25, 3 crores in FY 2025-26, and 2 crores in FY 2026-27).
 - **Digital Crop Survey** to be launched nationwide in 2 years, covering **400 districts in FY 2024-25** and **all districts in FY 2025-26**.



About Digital Agriculture

- It can be defined as the **use of modern technology** by farmers to **improve farm activity management** by making it **scientific and data-driven**.
- It is the consistent application of **methods of 'Precision agriculture' and 'Smart farming'**, internal and external **networking** of the farm and use of **web-based data platforms** together with **Big Data** analyses.
- **Examples of digital technologies for Agriculture Sector**
 - **Use of drones to fight locusts in India (2019)**: Used for anti-locust spraying to reduce crop losses.
 - **Grain Bank Model of 'Ergos'**: Providing doorstep access to **end-to-end post-harvest supply chain solutions** to small and marginal farmers.
 - **Yuktix GreenSense**: An **off-grid remote monitoring and analytics solution** for effective tool for monitoring and **DPI (Disease, pest, and irrigation) management**.

Know the term

- **Precision Agriculture**: Science of improving crop yields and assisting management decisions using **high technology sensor and analysis tools**.
- **Smart Farming**: Adoption of advanced technologies and data-driven farm operations to optimize and improve sustainability in agricultural production

Significance of Digital Agriculture Mission

- **Aid farmers to take informed decisions.**
 - E.g. DGCEES-based data will help **crop diversification and evaluation of irrigation needs** which will aid in **making agriculture sustainable**.
- **Accurate data on crop area and yield** will enhance **efficiency and transparency** in agri-production, and implementation of government **schemes** like crop insurance, loan disbursement etc.
- **Preventing and mitigating losses** and increase in farmers' incomes.
 - E.g. **Crop map generation and monitoring** for better **disaster response** and **insurance claims**.
- **Mission is expected to create direct and indirect employment** in agriculture, by providing opportunities to about **2.5 lakh trained local youth and Krishi Sakhis**.
- **Improved service delivery for farmers**, including –
 - **Access to government schemes, crop loans, and real-time advisories** with the use of modern technology like **data analytics, AI, and remote sensing**.
 - **Digital authentication** for accessing services and benefits, **reducing paperwork** and the need for physical visits.
- **Optimized value chains and tailored advisory services** for crop planning, health, pest management, and irrigation.

Challenges for effective implementation

- **Fragmentation of agricultural land:** The **average landholding** in India is only 1.08 ha, making application of present **technology** difficult as it is conducive for **large farms**.
- **High initial costs:** Digital agriculture requires **significant computing, storage and processing power** which makes it less scalable due to high costs.
- **Lack of sufficient research:** The **impact** technology can have on Indian farming and **clarity on profitability is lacking**.
- **Inadequate infrastructure:** Digital infrastructure development is **lower in rural areas** which can be a hindrance to digitization of agriculture. E.g. **lower internet penetration**
- **Lack of digital literacy:** It hinders adoption of digital technologies as farmers **have lower trust** in newer systems. It also hinders effective **maintenance and grievance redressal** related to modern equipment.
- **Language barriers:** Unavailability of varied local languages for technology interface creates barriers in access.

Initiatives for promoting Digital Agriculture

- **India Digital Ecosystem of Agriculture (IDEA) framework:** For creating an integrated **database of farmers** to build **innovative agri-focused solutions**.
- **National e-Governance Plan in Agriculture (NeGP-A):** Aimed at providing relevant **information** related to farming free of cost to the farmers.
- **Market based interventions:** Like **e-NAM, AGMARKNET etc.**
- **Drones for land mapping:** Used in **Swamitva Scheme; Sensor-based Smart Agriculture (SENSAGRI) programme** etc.
- **National Strategy on AI** recognizes agriculture as one of the **priority sector areas** (Niti Aayog)
- **Applications to aid farmers:** PM-KISAN Mobile App, Kisan Suvidha App, HORTNET project for Horticulture development etc.

Conclusion

To reap the benefits of digital agriculture, focus on factors like **affordability, ease of access and operations, easy maintenance of systems, timely grievance redressal, robust R&D and appropriate policy support** is paramount. The **Digital Agriculture Mission** is a step in the right direction to achieve this goal and **improve farmers' lives**.

Related News

Union Minister of State for Agriculture launched **Krishi-Decision Support System (Krishi-DSS)** a **geo-spatial platform** to provide **real-time information on crop conditions, weather patterns, water resources, and soil health**.

- It has been developed by **Union Ministry of Agriculture and Farmers Welfare** and **Department of Space** using **RISAT-1A** and **Visualization of Earth observation Data and Archival System (VEDAS)** of the space department.

Application of Space Technology in Agriculture Sector

- **Remote Sensing and Imagery:** Like Early detection of pests and diseases, Land Use Mapping etc.

- **Global Positioning System (GPS):** Like Precision farming, Livestock tracking etc.
- **Communication Technologies:** like Real-Time Data dissemination
- **Weather Forecasting and Climate Modelling:** Like Early Warning Systems, Monitoring Impact of Climate Change etc.

Other Initiatives undertaken for use of Space Technology in Agriculture Sector

- **Forecasting Agricultural Output using Space, Agro-meteorology and Land based Observations (FASAL) Project**
- **Coordinated programme on Horticulture Assessment and Management using geoinformatics (CHAMAN) Project**
- **KISAN (C[K]rop Insurance using Space technology And geoinformatics) for improvement in yield estimation.**

3.1.2. LIVESTOCK SECTOR IN INDIA

Why in the news?

Cabinet approved **sustainable livestock health and production** scheme with a total outlay of Rs 1,702 crore, the decision aims to Increase farmers income from livestock and dairy.

More on the News

- **Scheme is comprised of following:**
 - Animal health management and veterinary education
 - Dairy production and technology development
 - Animal genetic resource management, production and improvement
 - Animal nutrition and small ruminant production and development

Know the term

- **Sustainable livestock Production** encompasses practices that aim to meet needs of raising animals for food while minimizing negative environmental impacts.

Status of Livestock Sector in India

- India has **world's largest population of livestock.**
- India is **largest producer of buffalo meat** and **2nd largest producer of goat meat.**

Significance of Livestock Sector in India

- **Contribution to GDP:** Contribution to **total Livestock GVA (at constant prices) was 30.19%** of Agricultural and Allied Sector GVA and **5.73% of Total GVA** in 2021-22.
- **Employment Generation:** Livestock rearing is a major source of livelihood for over **70% of rural households in India**, with a significant proportion being small and marginal farmers and landless laborers.
- **Interlinkages with Agri-activities:** Livestock sector is crucial for production of organic inputs like manure and agricultural waste is used as fodder for animals.
- **Food and Nutritional Security:** Livestock products such as milk, meat, and eggs are rich in essential nutrients, playing a crucial role in combating malnutrition, especially among children and women.
 - India is ranked **1st in milk production** contributing **23% of global milk production.**

Issues faced by livestock sector in India:

- **Health and Veterinary Issues:**
 - **High economic losses due to animal diseases:** E.g., Haemorrhagic Septicaemia, Foot and Mouth Disease, Brucellosis, etc.
 - ✓ Also, **zoonotic diseases can be transmitted** between animals and humans, as evidenced by recent outbreaks like COVID-19, Ebola, and avian influenza
 - **Inadequate infrastructure and human resources:** India has less than 60 **recognized veterinary colleges in India**, which are inadequate to turn out the required number of vets.
 - **Rise of Anti-Microbial Resistance:** India ranks 4th in antibiotics use in animals, wherein poultry sector is the largest reservoir of antibiotics.
- **Economic Issues:**
 - **Low Productivity:** Due to **inadequate nutrition, poor management practices**, and low genetic potential of local breeds.

- ✓ Average annual productivity of cattle in India is 1777 kg/animal/year as against the world average of 2699 kg/animal/year (2019-20).
- **Unorganized Sector:** About **half of total meat production** comes from **un-registered, make-shift slaughterhouses**.
- **High Marketing and transaction costs:** of livestock products at around **15-20% of sale price**.
- **Low insurance cover:** Only **15.47%** of animals are under insurance cover.
- **Shortage of fodder:** India has only 5% of its cultivable land under fodder production while having **11% of livestock**, creating a huge pressure on land, water and other resources.
- **Inadequate attention towards extension services:** There is no exclusive livestock extension program, and most services are animal health-focused, not extension-focused.
- **Green House Gas emissions:** Enteric methane emission from Indian livestock contributed **15.1% total global enteric methane emission**.

Initiatives for India's Livestock Sector

- **Rashtriya Gokul Mission:** Focuses on the development and conservation of indigenous breeds through selective breeding and genetic upgradation.
- **National Livestock Mission:** Aims to ensure quantitative and qualitative improvement in livestock production systems and capacity building of all stakeholders.
- **Extension of Kisan Credit Card (KCC)** to the sector and establishment of **Animal Health Infrastructure Development Fund** etc.
- **Dairy Development Programs:** Schemes like the National Programme for Dairy Development (NPDD) and Dairy Entrepreneurship Development Scheme (DEDS) aim to modernize the dairy sector and promote entrepreneurship.
- **Livestock Health and Disease Control Programs:** Include the National Animal Disease Control Programme (NADCP) for **FMD and Brucellosis**, and the **Livestock Health and Disease Control** Scheme to strengthen disease surveillance and diagnostic services.

Way Forward

- **National Animal Disease Reporting System (NADRS)** requires to be strengthened with infrastructural support and digitalization for real-time reporting of disease outbreaks.
- **Mobile veterinary services** for remote areas to provide first aid, artificial insemination, deworming, and vaccination services at farmers' doorstep.
 - To set up a national working group to review staff levels and training needs at DADF and state AHDs.
- **Promote Livestock-based integrated farming system (IFS)** to integrate crop cultivation, livestock rearing, and other agricultural activities to optimize resource use, enhance productivity, and ensure sustainability.
- **Facilitating access to markets**, establishing efficient value chains, and promoting digital platforms for marketing and information dissemination.
- **Increase insurance Coverage in Livestock Sector** to shift the livestock owners' risk to insurance companies.
- **Formulating Area-specific policy.** E.g. policy focus in **rain-fed areas** should be on **livestock rearing or livestock-based integrated farming system**.

3.1.3. HORTICULTURE SECTOR IN INDIA

Why in the news?

Cabinet approved scheme for Sustainable development of Horticulture with a total outlay of Rs 1129.30 crore.





More on the News

- The scheme aimed at **increasing farmers' income from horticulture** plants comprises the following -
 - Tropical, sub-tropical and temperate horticulture crops
 - Root, tuber, bulbous and arid crops
 - Vegetable, floriculture, and mushroom crops
 - Plantation, spices, medicinal, and aromatic plants
- Recently the government also approved a Rs 1,766-crore '**Clean Plant Programme**' under the Mission for Integrated Development of Horticulture (MIDH) to boost horticulture sector.

About Clean Plant Programme (CPP)

- **Aim:** Promote sustainable and eco-friendly agricultural practices and reduce dependence on imported planting materials
 - It will boost India's horticultural sector while aligning with **Mission LiFE and the One Health initiatives**.
- **Implementing agency:** National Horticulture Board in association with the Indian Council of Agricultural Research.
- **Three Core Components:**
 - **9 world class state-of-the-art Clean Plant Centers (CPCs)** equipped with advanced diagnostic therapeutics and tissue culture labs.
 - **Certification Framework**, supported by a regulatory framework under the **Seeds Act 1966**.
 - **Support for large-scale nurseries** for the development of infrastructure.

Key Benefits of CPP

 Farmers	 Nurseries	 Consumers	 Exports
Access to virus-free, high-quality planting material, leading to increased crop yields and income .	Streamlined certification processes and infrastructure support to efficiently propagate clean planting material	Superior produce free from viruses, enhancing the taste, appearance, and nutritional value of fruits.	Expansion market opportunities and increasing India's share in the international fruit trade.

About Horticulture Sector




- It is a vast and diverse field that encompasses the **cultivation, production, processing, and marketing of fruits, vegetables, flowers, and ornamental plants**.
- **Major types of horticulture:** **Pomology** [Fruit cultivation and includes Viticulture (grape cultivation)]; **Olericulture** (cultivation of vegetables); **Floriculture** (cultivation of flowers and ornamental plant); **Arboriculture** (cultivation of trees and shrubs).

Status of India's Horticulture Sector

- **Production: 355.48 Million Tonnes in 2022-23, 13.1% of the gross cropped area.**
 - **Fruits and vegetables account for almost 90%** of India's total horticulture production.
- **Contribution to Agriculture Gross Value Added (GVA): 33%**
- **Global Status:** India ranks **2nd in fruits and vegetable production** in the world after China.
 - According to FAO (2022), India is the **largest producer of Onions, ginger and okra** among vegetables and ranks **2nd in production of Potatoes, Cauliflowers, Brinjal, Cabbages**, etc.
 - Amongst fruits, the country ranks **1st in the production of Bananas, Mangoes and Papayas**.
- **Exports:** India is ranked **14th in vegetables and 23rd in fruits**.



Significance of Horticulture Sector for India

 Sunrise Sector	 Food & Nutritional security	 Potential in India
<p>With potential to</p> <ul style="list-style-type: none"> • Double Farmers income • Generate Employment • Enhance Foreign Currency Earnings • Enable Rural Development 	<ul style="list-style-type: none"> • Fruits and vegetables major sources of vitamins/ minerals in Indian diet 	<ul style="list-style-type: none"> • Favorable agro-climatic conditions • Abundant labor force • Relatively low production costs • High productivity compared to food grains (12.49 tones/ha against 2.23 tones/ha.)

Other Initiatives Undertaken for the sector

- **Mission for Integrated Development of Horticulture (2014):** Centrally Sponsored Scheme, for the holistic growth of the horticulture sector with 2 sub-schemes -
 - **National Horticulture Mission (2005-06):** aims at holistic development of horticulture sector by ensuring forward & backward linkage through a cluster approach under **Horticulture Cluster Development Programme**.
 - **Horticulture Mission for North East and Himalayan States.**
- Agriculture Ministry announced Rs **18,000 cr for 100 export oriented horticulture clusters**.
- **Coordinated programme on Horticulture Assessment and Management using geoinformatics (CHAMAN):** To develop and firm up scientific methodology for estimation of area and production under horticulture crops.
- **Capital Investment Subsidy Scheme:** for construction/ expansion/ modernization of Cold Storages/Storages of Horticulture Products.
- **Commercial cultivation:** During 2022-23, 347 varieties/hybrids of 44 crops were released, and 99 varieties of horticultural crops were notified for commercial cultivation.

Challenges

- **Low Export share:** India's share in the global horticultural market is a mere 1 %.
 - Indian exports face food safety and standards related issues due to non-tariff trade barriers like **Sanitary and phytosanitary measures**.
 - E.g., pesticide residue has led to rejection of exports in key markets like the EU.
- **Infrastructure Deficit:** Poor logistics and **lack of equitable cold storage and warehousing facilities** contribute to **delays and wastages** as Horticulture crops are highly perishable.
 - **Cold storage distribution among the states is inequitable**, with around 59% of the storage capacity (i.e., 21 MMT) present in 4 states Uttar Pradesh, West Bengal, Gujarat, and Punjab.
- **Small operational landholdings:** They limit the amount of land available for cultivation, **for crop rotation** and sustainable soil management resulting in reduced yields and decreased soil fertility.
- **Other challenges:** Limited value addition; Lack of irrigation; **Pests & diseases;** limited outreach of farm insurance & farm mechanization; **lack of access to institutional credit** especially to small & marginal farmers; climate change-induced extreme weather events and changes in weather patterns etc.

Way Forward

- **Capacity-building initiatives at the level of the farmer, the processor and the exporter** for meeting all mandatory requirements as per international standards, such as global Good Agricultural Practices (GAP).
- **Improving Value Chain Efficiency** by expanding cold storage capacity; investing in better roads, railways, and transportation infrastructure to reduce post-harvest losses.

- **Encourage the development of value-added horticultural products**, such as processed foods, juices, and jams, to increase market demand and farmer income.
- **Encourage entrepreneurship** in the horticulture sector to create new businesses and job opportunities.
- **Promote agricultural technologies**, such as precision agriculture, hydroponics, and tissue culture, to improve productivity and efficiency.
- **Develop and promote climate-smart agricultural practices** that are resilient to changing weather patterns.
- **Other:** Promoting integrated pest & disease management, water-saving technologies and practices, farm mechanization, expanding access to institutional credit etc.

Scan the QR code to know more about **India's Agriculture Sector**.

<p>Weekly Focus #60: Agriculture Overview: From Production -centric to Farmer-centric</p>		<p>Weekly Focus #62: Agricultural Inputs Part I</p>	
<p>Weekly Focus #63: Agricultural Inputs Part II_Seeds and Pesticides: Essential Consumable Inputs</p>		<p>Weekly Focus #67: Sustainable Agriculture Part I_Understanding the concept and practices</p>	
<p>Weekly Focus #68: Sustainable Agriculture Part II_Transforming India's Food Systems</p>		<p>Weekly Focus #100: Agricultural Technology in India: Innovating for a Greener Tomorrow</p>	

3.2. NATIONAL PEST SURVEILLANCE SYSTEM (NPSS)

Why in the news?

Union Ministry of Agriculture has launched **AI-based platform, National Pest Surveillance System (NPSS)** that will help farmers **connect with agriculture scientists and experts** on controlling pests.

About National Pest Surveillance system (NPSS)





- **Aim:** It aims to **reduce the dependence of farmers on pesticide retailers** and inculcate a **scientific approach** among them towards **pest management**.
- **Agencies involved:** NPSS is a collaboration of **Directorate of Plant Protection, Quarantine & Storage And ICAR- National Research Centre for Integrated Pest Management (ICAR- NCIPM)**.
- **Key Features**
 - **Utilizes cutting-edge technologies:** Such as **Artificial Intelligence (AI) and Machine Learning (ML)** to offer **timely and precise pest management advisories**.
 - **Mobile app and web portal:** Farmers can take **photos of the infested crops or the insect and upload** on platform.
 - **Experts' Advice:** **Scientists/experts** will provide farmers with **accurate advice** and also **suggest pesticides** to control the menace.
- Technological applications like **NPSS** can encourage **judicious use of pesticides** and promote **Integrated Pest Management** in India.

About Integrated Pest Management (IPM)

- **Definition:** It is an **eco-friendly approach** which aims at keeping pest population below those causing economically damage/loss by **employing alternate pest control methods and techniques** with emphasis on **use of bio-pesticides and pesticides of plant-origin**.



Components/methods of integrated pest management

 Cultural pest control	 Physical or mechanical control	 Biological control	 Chemical controls
Methods like crop rotation , fallowing, manipulation of planting and harvesting dates, manipulation of plant and row spacing etc	Physical removal like Hand picking of insect pests, mechanical methods based on the knowledge of pest behaviour.	Augmentation and conservation of natural enemies of pests such as insect predators, parasitoids, parasitic nematodes, fungi and bacteria.	Use of chemical pesticides as the last resort - when all other methods fail to maintain pest populations below levels that are economically damaging .

Significance of IPM

- **Prevents crop yield losses:** Crop yield losses due to insect pests, diseases, nematodes, weeds and rodents range from **15-25 % in India**, amounting to 0.9 to 1.4 lakh crore rupees a year [Council of Energy, Environment & Water (CEEW)].
- **Increases Income Levels:** IPM **reduces production costs** through reduced levels of pesticide use and increased production. Also, higher quality crops (with less residues) can fetch better prices in markets.
 - E.g., The implementation of IPM has led to increased pulse production of 15-20 %.
- **Prevents Ill-Effects of Excessive Pesticide Use:** Such as human and animal health hazards, development of resistance in the pests to pesticides etc.
- **Environmental benefits:** Due to Reduced Pesticide Residues in the environment-
 - **Enhances ecosystem services** (i.e. pollination, healthy soils, diversity of species).
 - **Conserve Energy & reduces emissions** as Bio-pesticides are derived from animals, plants (neem, tobacco) microorganisms (bacteria, virus, fungus, nematodes) etc.

Concerns

- **Possibility of Initial Yield Decline:** It can discourage farmers from adopting IPM.
- **High Initial Costs:** Upfront **investment is needed in new equipment, technology, and training**.
- **Lack of Awareness and Education:** About IPM principles or its potential benefits, leading to **resistance to change**.
- **Lack of Monitoring and Data:** Effective IPM relies on regular monitoring of pest populations and data collection, which can be **time-consuming and resource-intensive**.
- **Pest Resurgence:** In cases where IPM practices are **not implemented correctly** or if pests develop resistance to biological control agents.
- **Weather and Environmental Factors:** It can affect the effectiveness of certain IPM practices.

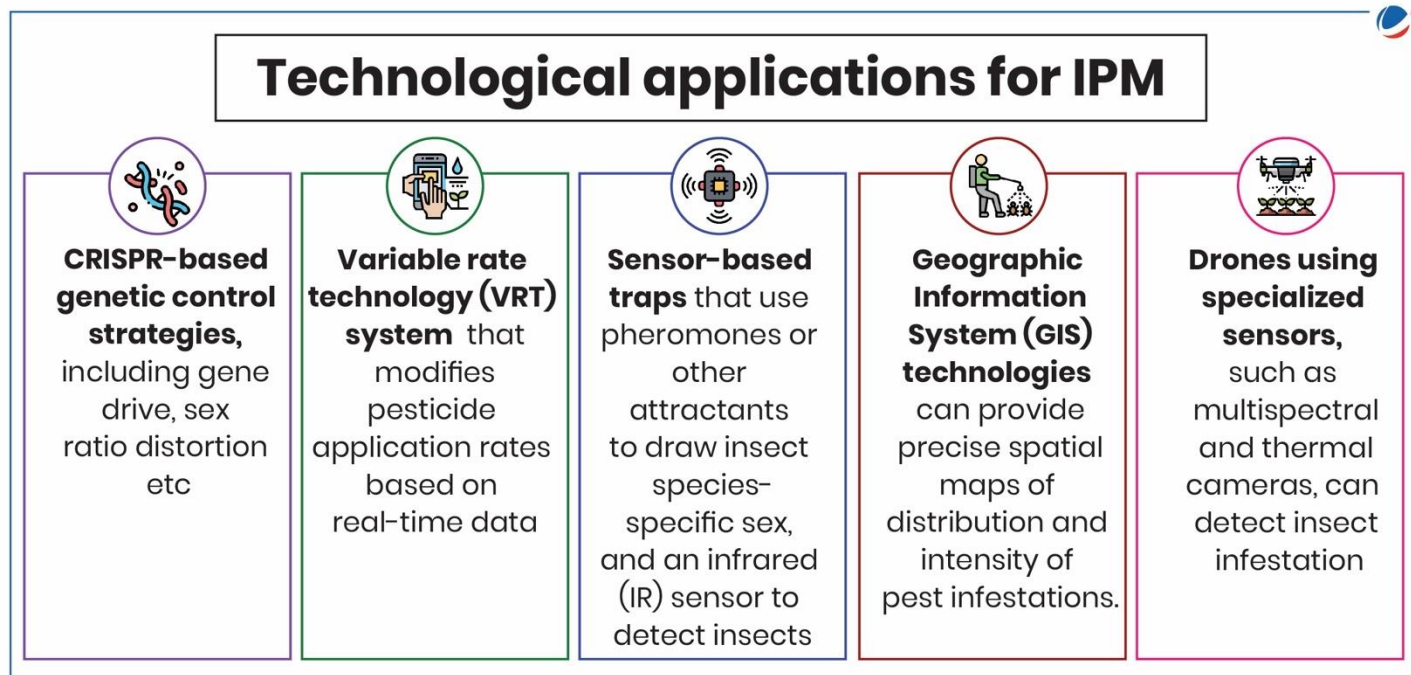
Steps taken for promoting IPM System in India

- **IPM Policy:** India has adopted IPM as **cardinal principle and main plank of plant protection** in the overall Crop Production Programme since 1985.
- **ICAR-NCIPM:** Premier research institute established in 1988 to **develop and promote IPM technologies** for major crops
- **Scheme “Strengthening & Modernization of Pest Management”** : Promotes IPM approach under this scheme through various Central IPM Centres (CIPMCs) across country.

- Their Mandate includes **pest/disease monitoring, production and release of bio-control agents/ bio-pesticides**, conservation of bio-control agents & Human Resource Development in IPM etc.

Way forward

- **Concentrated effort from government, Farmer Producer Organizations, and researchers** to provide **education, training, and support** to farmers.
- Developing **innovative IPM strategies tailored to specific regions and crop systems**.
- **Invest in developing technological interventions** for wider adoption of IPM.



3.3. PRADHAN MANTRI MUDRA YOJANA

Why in the news?

NITI Aayog & KPMG published a report on **Impact Assessment of Pradhan Mantri Mudra Yojana (PMMY)**.

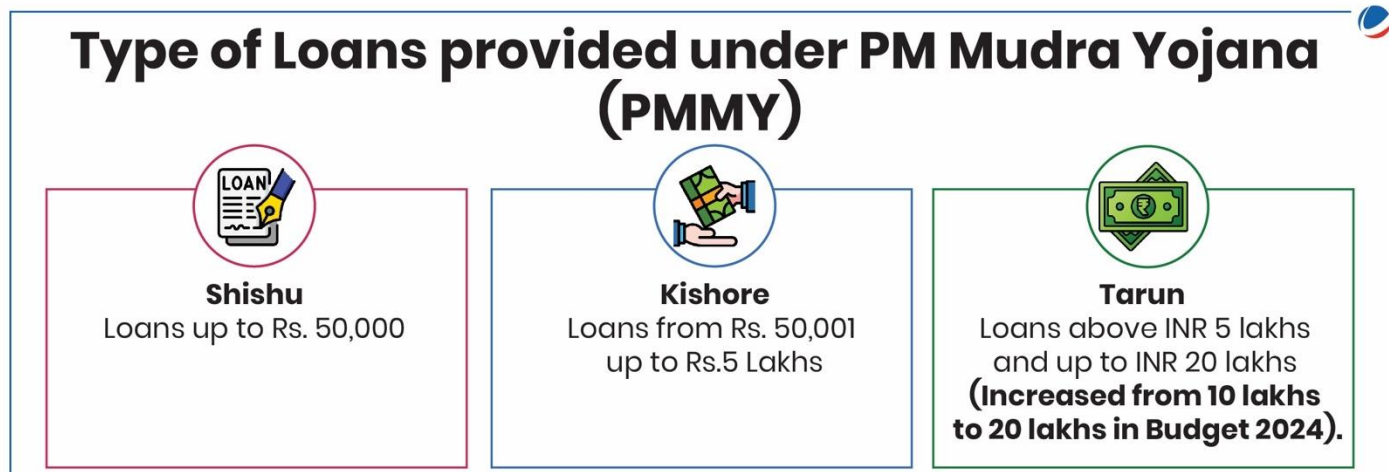
About PM Mudra Yojana (PMMY)

- The PMMY is a flagship scheme of the Government of India announced in 2015 during **Union Budget FY-2016** to **EXTEND AFFORDABLE CREDIT TO MICRO AND SMALL enterprises (MSMEs)**.
- **Objective:** To **fund the unfunded** by bringing MSMEs to the formal financial system and extending affordable credit to them.

Key Features of the scheme

- **Type:** Central Sector Scheme.
- **Loans through Member Lending Institution (MLIs):** Public Sector Banks, Private Sector Bank, State operated cooperative banks, Regional Rural banks, Micro Finance Institution (MFI), Non-Banking Finance Company (NBFC), Small Finance Banks (SFBs) etc.
 - MUDRA (**Micro Units Development & Refinance Agency Ltd.**) is **responsible for refinancing MLIs**.
 - **MUDRA does not lend directly to the micro entrepreneurs/individuals.**
 - Loans are provided to meet both **term loan and working capital components of financing**.
- **Eligible borrowers:** Non-Corporate Small Business Segment (NCSB) consisting of Individuals, Proprietary concern, Partnership Firm, Private Ltd. Company, Public Company and Any other legal forms.
- **Credit Guarantee:** To eligible micro units through **Credit Guarantee Fund for Micro Units (CGFMU)**.
 - CGFMU was established in 2015 for guaranteeing loans sanctioned under PMMY.

- **Other benefits:**
 - **No need to pay processing charges or offer collateral**, improved access to affordable credit, and flexible repayment options.
 - **MUDRA Card:** Debit card issued against the MUDRA loan account, for working capital portion of the loan.



Key Achievements highlighted in the report

- **Credit Support to MSMEs:** Since 2015, the scheme has reached out to ~**35 crore Micro and Small Entrepreneur Accounts** and provided **credit support** amounting to ~ **₹18.39 lakh crore**.
 - **Average loan size has gradually increased** for almost all the banks over the years.
- **Financial Inclusion:**
 - Women entrepreneurs have the major share of PMMY loans, with around **71.4 % of the total number of accounts** (FY 2022).
 - The **sanctioned amount for New entrepreneurs has increased** from INR 61,650 Crore to INR 72,685 Crore.
- **Encourages small businesses:** Majority loan accounts (~80%) are in the **Shishu category (FY 2021)**, followed by Kishore at 18.70 %.
 - People belonging to **SC, ST, OBCs** have more number of Shishu accounts (**83.92 %, 83.53 %, 78.68%** respectively for FY 2022).
- **Performance of Aspirational Districts:** Increase in the number of loan accounts and amount sanctioned to these districts Under PMMY with a YoY change of 12 % and 14.7 % respectively.

Issues & Challenges highlighted by the report

- **Regional Variation:** The Cumulative number of **accounts and the amount sanctioned for the Northeast region** (2015 – 2022) **is not only the lowest at ~4%** but is also **decreasing** year after year post FY-2018.
- **Rising NPAs:** NPA accounts & amount have been increasing year after year with a compound annual growth rate (CAGR) of 22.51 % & 36.61 % respectively from FY17 to FY22.
 - **Public sector banks have the highest NPA** of 22.6 % and NBFCs have the lowest NPA of 1.3 %.
 - **Kishore accounts have the highest NPA** while Shishu accounts have the lowest NPA amount.
- **Issues in Scheme Design:**
 - **Ceiling of 15% on pay out under CGFMU** (maximum amount the CGFMU is willing to cover for a defaulted loan) restricts the benefits of the banks.
 - **Complex** (XML format, errors not easily rectifiable, high upload time to upload), **and lengthy claim settlement process under CGFMU.**
 - **Other issues:** High Guarantee fee; high refinancing rates; security risk due to Lack of collateral etc.
- **Issues in Institutional Mechanism:**
 - **Lack of centralized database** for collecting information.
 - **Poor credit penetration to weaker sections** and deficient areas.
 - **Lack of digitized platform** for quick addressal of queries on issues pertaining to guarantee covers or other operational/ technical guidelines.



Other issues



Implementation Issues

- **Limited number** of employees and staff
- **Borrowers lack knowledge of basic** documentation and processes and credit discipline
- **Poor connectivity** to remote areas.



Poor Monitoring and Evaluation

- Lack of proper mechanism for target setting
- Lack of **standardized process for monitoring performance** of micro entrepreneurs
- Need of **adequate control mechanism** to supervise.



Factors Limiting access of MUDRA loans

- Long loan application **processing time**
- **High processing fee** and rates of interest
- **Lack of a credit history;** existing debt burden
- **Difficulty in providing guarantee** or inadequacy of collateral

Way Forward (Recommendations)

- **Using Traditional Advertising** (Mass promotion using television/newspapers/radio, displaying posters and banners in regional languages) and **Online Advertising** (through **social media platforms, Facebook ads, google ads** etc.) to inform, persuade and reinforce the benefits of the scheme.
- **Digitization of the Lending Process** to make it more transparent and hassle free for the potential beneficiaries.
- **Digital Portal enabling real-time upload of beneficiary data** to **enhance the overall efficiency and transparency** of the scheme with better data management.
- **Feedback/Query Redressal Portal and Chatbots** for query redressal to benefit the MLIs as well as the beneficiaries or borrowers of the scheme.
- **Recognition Mechanism** to **incentivize well performing MLIs** to perform better.

Success Stories, Best Practices and Case Studies

- **Integration of MUDRA scheme with the “Loans in 59 minutes” scheme** by Central Bank of India, IDBI, ICICI, Yes Banks etc. wherein people can apply for credit on their portal.
- **MUDRA Day** by UCO bank, every month, to promote, improve availability and accessibility through **campaigns and personal interactions**.
- **Group based lending system** by Bandhan and IndusInd Bank wherein individuals are grouped and informed about the scheme has helped them reduce NPA to a significant level.

3.4. CREATIVE ECONOMY

Why in News?

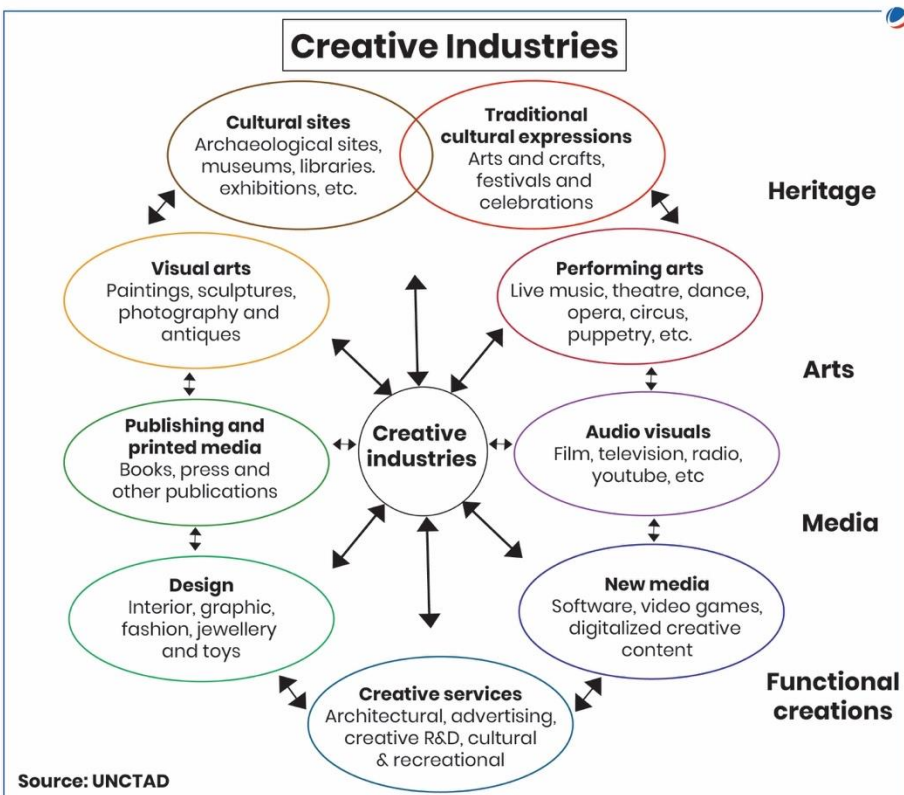
The Indian Chamber of Commerce launched the All India Initiative on Creative Economy (AIICE) with an aim to “tap into the vast potential of India’s creative industries”.

Creative Economy or Orange Economy:

- It is an **evolving concept based on creative assets** potentially generating economic growth and development.
- Essentially it is **knowledge-based economic activities** upon which ‘creative industries’ are based.
 - Creative industries are **cycles of creation, production and distribution of goods and services** that use creativity and intellectual capital as primary inputs (See infographic)

Characteristics of Creative Economy

- **Knowledge-based economic activities:** based on knowledge that is either formally acquired through education and training or inherited (informal skill transfer that has been preserved over generations).
- **Original idea and imagination:** involve generation and exploitation of intellectual property.
- **Non-repetitive and adaptive to technological change and mechanization:** This feature is especially important in India where 69% of jobs will be threatened due to automation by 2040.
- **Economic and culture value chain:** An individual's original idea, is developed into a cultural product through production and distribution.



Significance of Creative Economy

- **Economic aspects:**
 - **Create linkages and Spill-over Effects:** Can lead to an increase in demand for goods and services from other sectors, such as hospitality and tourism industry.
 - **According to UN estimates,** creative economy industries generate annual revenues of over \$2 trillion and account for nearly 50 million jobs worldwide
- **Social aspects:** 23% of people employed in creative industries are between 15 and 29 (more than in any other sectors), while women hold 45% of creative occupations worldwide.
- **Skill Development and Education:** The rise of edutainment in India, where education is combined with entertainment through digital platforms, has transformed traditional learning methods.
- **Diplomacy and Soft Power:** Cultural exchange promotes mutual understanding and opens up avenues for diplomatic engagement.
 - E.g. Indian cuisine has become an integral part of India's soft power.
- **Sustainable Development:** Creative industries are mostly environmentally friendly since primary input for creative activities is creativity rather than natural resources as in case of mining, agriculture etc.

Data Bank

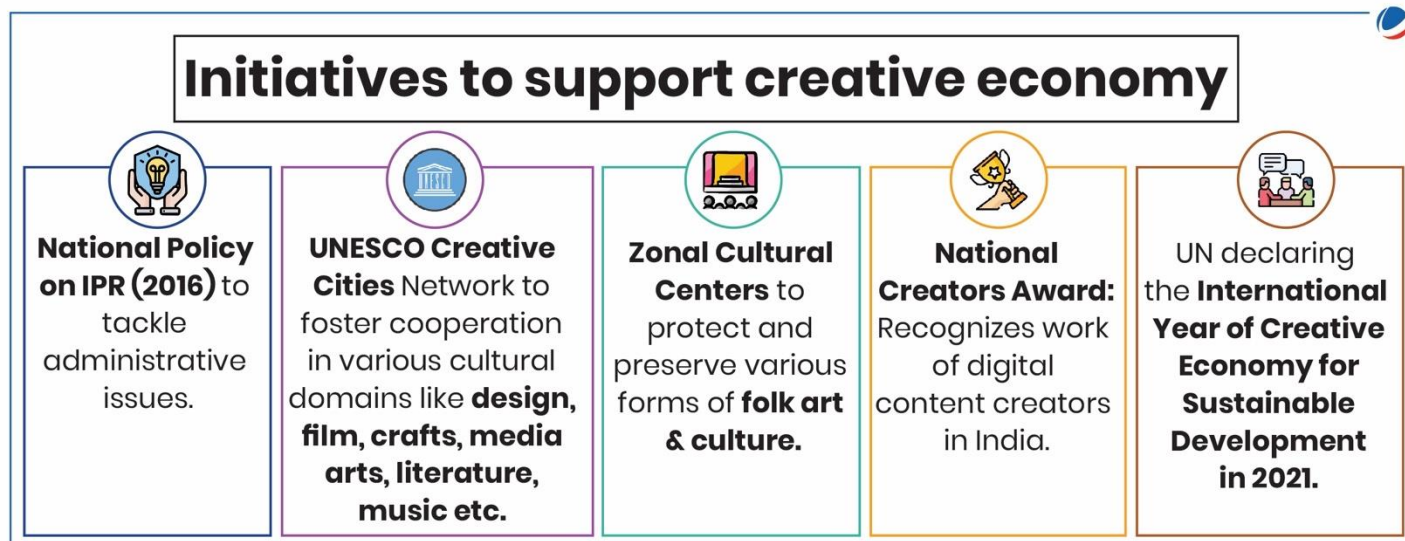
Status of creative economy in India:

- › **\$30 billion industry** and responsible for employment of **nearly 8% of India's working population.**
- › **1.5 times** increase in export of creative goods from 2010 to 2019.
- › **About 20 %** contribution by creative occupation to Nation overall GVA.

Hurdles hindering growth of creative economy

- **Digitalization challenges:** Like digital divide, cyber security concerns, literacy as digital ecosystem plays a crucial role in creative industry. E.g. accessing online platform, digital art galleries, etc.
 - Rural Internet subscriber are about 41% of overall internet subscriber while having higher population.
- **Rural Urban Divide:** A sizeable 67.07% of all creative workers in India are in the urban areas.
- **India's IPR regime:** E.g. in India, it takes **about 58 months on average** to dispose of a patent application as compared to about 20 months in China and 23 months in US.
- **Inherent issues of the sector:** Such as fragmentation of creative industries, ineffective market access and distribution, and lack of transparency in the selection process, etc.
- **Inadequate recognition and lack of awareness:** about local culture and arts in India.

- **Traditional career preferences:** Societal pressure in India to pursue conventional career paths like engineering, medicine, etc.
 - Creative professions are seen as **risky and unstable** in Indian society.



Way Forward

- **Increasing Recognition of Indian Culture Globally:** Promote Indian cultural and creative goods and services through organization of events, trade fairs, and international festivals. **E.g. Ministry of Culture’s Global Engagement scheme.**
- **Improving Access to Finance:** **Credit guarantees schemes and crowd funding** for financing entrepreneurs and MSMEs in creative sector.
 - **Adopt global best practices such as “Crowdfunding4Culture”** portal of European Commission.
- **Reforming Intellectual Property Rights Framework:** Addressing **issues of copyrights, intellectual property protection** and safeguard the interests of creators and innovators.
- **Establishing Creative Districts/Hubs:** On the lines of creative district models in Thailand.
- **Integrated Policymaking Institution:** **Forming a Specialized institution for Creative Industries** on the lines of UK (Creative Industries Council).
- **Human Capital Development:** Instilling digital skills, such as digital marketing and graphic design in young workers.
 - **Launching Pilot Project** to promote entrepreneurship including **creative entrepreneurship** as an alternate career choice by providing end-to-end **entrepreneurship education.**
- **Artificial intelligence governance and policy frameworks:** Policies should consider the digital divides and aim to close the digital, knowledge, physical and digital infrastructure gap.

Scan the QR code to know more about **India’s Creative Economy.**

Weekly Focus #117: India's Creative Economy: From Imagination to Innovation



3.5. MODEL SKILL LOAN SCHEME

Why in the news?

Recently, the Government launched the revised Model Skill Loan Scheme.

More about the Scheme

- **Background:** Earlier **Credit Guarantee Fund Scheme for Skill Development (CCFSSD)** was launched in **2015.**

- To provide institutional credit to individuals for skill development courses aligned to **National Occupations Standards and Qualification Packs** and leading to a **certificate/diploma/degree by training institutes as per the National Skill Qualification Framework**.
- **Objective:** Providing easy access to **advanced-level skill courses**, which potentially pose a significant financial barrier for many deserving students and candidates to gain futuristic and in-demand industry skills.
- **Loan amount:** The maximum eligible loan amount has been increased **from Rs. 1.5 lakh to Rs. 7.5 lakh**.
- **Lending institutions:** Previously, only **Indian Banks' Association member banks (private, public, and foreign) could provide loans**. The updated scheme now allows Non-Banking Financial Companies (NBFC), Micro Finance Institutions (MFIs), and Small Finance Banks (SFBs) to also act as lenders.
- **Credit Guarantee:** Extend loans will be backed by a guarantee against default of up to **75% of the loan disbursed**.

Need for Skill Development

- **Improve employability:**

According to PLFS, the youth (age 15-29 years) unemployment rate has declined from 17.8% in 2017-18 but still, it was 10% in 2022-23.

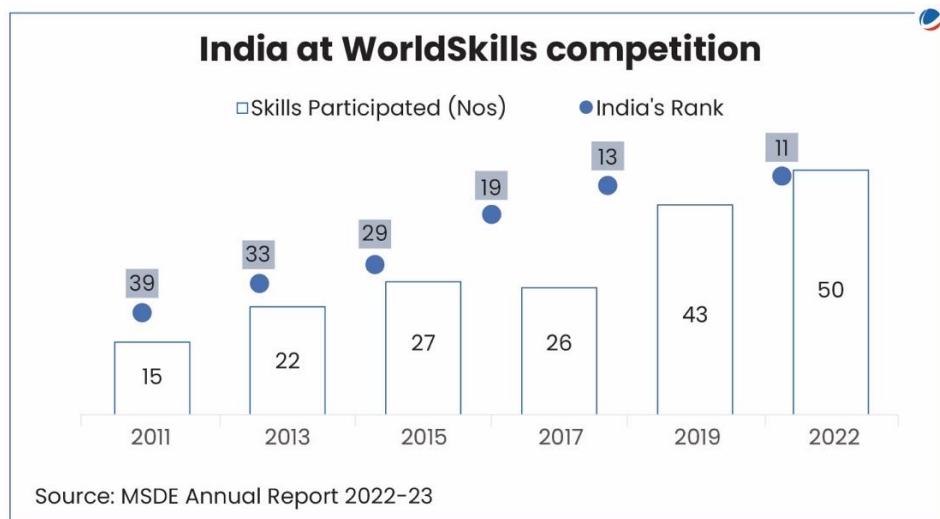
- **Changes in the nature of work:**

According to the World Economic Forum's (WEF) Future of Jobs report, 2023, in the next five years, 23% of the jobs are expected to change globally. To stay relevant, workers must focus on developing new skills.

- **Technological advancements:**

According to the WEF, the fastest-growing jobs in the next five years will be those of AI and machine learning specialists, and sustainability specialists.

- **Demographic dividend:** To transfer into productivity dividend by enabling job and entrepreneurial opportunities that are in sync with the aspirations and abilities of India's youth.



Challenges in Skill Development

- **Public perception:** Skilling is viewed as the **last option** meant for those who have not been able to progress/or have opted out of the formal academic system.
 - This creates a negative perception that **vocational training is inferior to academic education**.
- **Lack of adequate apprenticeship ecosystem** such as lack of coordination between education institutions and industry, inadequate infrastructure, and gaps in the regulatory framework.
- **Employment Skill Mismatch:** According to the Economic Survey 2023-24, only around 4.4% of the youth in the age cohort of 15-29 years have received formal vocational/technical training, while another 16.6% received training through informal sources.
- **Others:** Mismatch between **demand and supply at the sectoral and spatial levels, Lack of mentorship and adequate access to finance for startups**, etc.

Government Initiatives

- **Skill India Mission (SIM):** Delivers skill, re-skill and up-skill training through an extensive network of skill development centres/colleges/institutes etc. under various schemes, viz. Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Jan Shikshan Sansthan (JSS), etc.
 - **JSS:** For skilling of non/neo literates and persons with a rudimentary level of education
 - **PMKVY:** For imparting skill development training through Short-Term Training (STT) and Up-skilling and Re-skilling through Recognition of Prior Learning (RPL) to youth across the country including rural areas.
 - **Skill India Digital Hub platform:** Convergence platform facilitating access to skilling, credit, and employment through AI/ ML technology
 - **Skill India International Centres (SIIC):** Budget FY24 announced the setting up of 30 SIICs

- **Skill India Digital platform:** Aimed at achieving skilling, education, employment, and entrepreneurship ecosystem marks another step towards the “ease of acquiring skill” in India.
- **National Skill Development Council (NSDC):** Established in **2008**, a non-profit public limited company functioning as a Public Private Partnership under the **Ministry of Skill Development & Entrepreneurship, incorporated under section 8 of the Companies Act, 2013.**
- **Skill Impact Bond:** Launched by NSDC in 2021, this initiative uses a Development Impact Bond model to attract private sector funding for skill development and job placement, focusing on results-based financing.
- **National Skill Development Mission:** Launched in 2015, Mission has been developed to create convergence across sectors and States in terms of skill training activities.
- **Others:** In NEP 2020, there is a special focus on vocational education and skill development; National Apprenticeship Promotion Scheme (NAPS), etc.

Way forward

- **Seamless Learning Continuum:** Link basic education, technical training, job entry, and lifelong workplace learning into a cohesive educational pathway.
- **Holistic Policy Integration for Skill Development:** Merge skill development with labour, social, industrial, trade, technology, and regional policies for a comprehensive approach.
- **Industry-Education Alignment:** Foster ongoing dialogue between employers and training institutions to ensure curricula meet workforce needs and employee aspirations.
- **Adopted Global Best Practices:** Such as Germany’s **Dual Technical and Vocational Education and Training system** involves active participation and engagement from the employers including funding the cost of training delivery in the form of a stipend or wage payment.
- **Inclusive Skill Access:** Expand quality training reach to all demographics, especially rural and marginalized groups, to boost productivity, income, and employment prospects.
- **Sharada Prasad Committee recommendations** that can be considered-
 - **Creation of a Reimbursable Industry Contribution (RIC):** According to their recommendation, all businesses with 10 or more employees would be required to contribute 2% of their total wage expenses to this fund.
 - **Dedicated Vocational Education and Training System (VETCs):** Set up VETCs on the pattern of Engineering and Medical Colleges.
 - ✓ VETCs should run vocational courses in the **Engineering and Services Sector along with two academic subjects as mandated for ITI pass-outs to get equivalence with XII.**
 - **Ensure upward mobility** of students to diploma, advanced diploma, degree, etc.

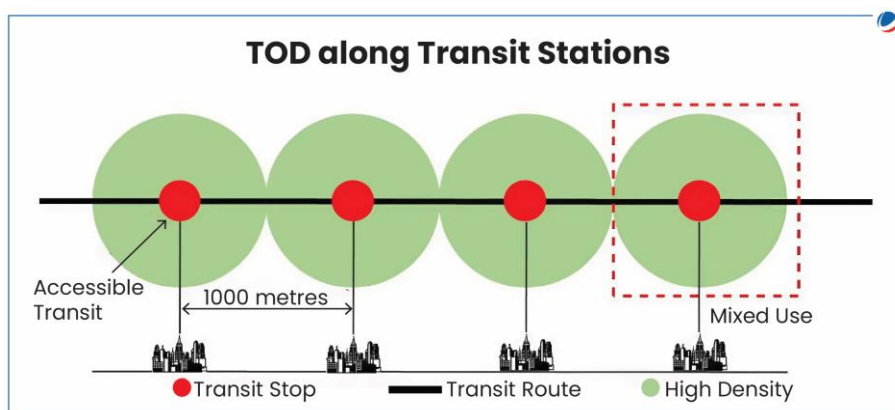
3.6. TRANSIT ORIENTED DEVELOPMENT

Why in the news?

Union Budget 2024-25 announced that the Union Government will formulate a transit-oriented development plan for 14 large cities with a population of over 30 lakhs, along with implementation and financial strategy.

Transit-Oriented Development (TOD)

- **Concept:** TOD integrates land use and transport planning and aims to develop **planned sustainable urban growth centres**, having walkable and livable communes with high-density mixed land use.
 - It promotes urban development that is compact, mixed-use, pedestrian- and bicycle-friendly, and closely integrated with mass transit by **clustering jobs, housing, services, and amenities around public transport stations.**



- **Transit Stations:** TOD focuses on development in the **influence zone of transit stations (like metro stations, BRTS etc.)**, i.e. within walking distance of (500-800 m) transit station or along the corridor in case the station spacing is about 1km.
 - TOD advocates **pedestrian trips** to access various facilities such as shopping, entertainment and work.

Components of TOD

- **Influence Zone:** The area near **the transit station**, i.e. within walking distance, has high-density compact development with **mixed land use** to support all residents' basic needs.
 - Higher concentration of people in influence area increases ridership of public transport, resulting in **increased fare revenue, pollution and congestion reduction**.
- **Mandatory and Inclusive Housing:** Housing in the influence zone should have a mix of all economic groups/sections.
- **Multimodal Integration:** Influence area should have high quality integrated multimodal transport system.
 - The hierarchy of the facilities at the transit system should **prioritize pedestrians followed by bicycle**, feeder buses, drop-off facilities and park and ride facilities in the given order.
- **Vibrant Public Spaces:** Designated spaces for street vendors, preservation of open spaces, playgrounds, parks, and maximizing natural surveillance through street lighting, active frontage and vendors zone etc.

Significance of TOD

- **Agglomeration effects:** Promoting higher densities and concentration of jobs within relatively small areas, **TOD creates agglomeration effects that boost a city's competitiveness**.
 - Studies have shown that doubling job density, for instance, increases economic productivity by 5 to 10%.
- **Livable Cities:** It creates vibrant communities with high-quality public areas and shorter commuting distances—**making cities more liveable**.
 - **Global Livability Index 2024** ranked Delhi and Mumbai at 141st rank out of 173 cities globally.
- **Efficient public transportation:** By concentrating jobs, services, and housing within the catchment area of transit stations, TOD makes **public transport a more attractive and efficient option**, while reducing dependence on private cars and promoting shorter commutes.
 - Mass transit can **support the large passenger flows** that come with high-density development, while the concentration of jobs and housing around stations helps make **public transport financially viable**.
- **Improved financing:** Proximity to mass transit improves access to TOD neighbourhoods, **increasing real estate value**.
 - A part of this value increase can be utilized in **financing additional transit improvements, affordable housing**, and other initiatives that promote sustainable inclusive growth.
 - ✓ For instance, in Hong Kong SAR, land value capture brought in about HK\$140 billion in revenues between 1980 and 2005, and unlocked land for 600,000 public housing units.
- **Climate-friendly:** TOD typically translates into **higher productivity, reduced energy consumption** and a **smaller carbon footprint** as it improves public transportation.
 - In Stockholm, which followed TOD, the **gross value added per capita grew 41%** between 1993 and 2010, while **GHG emissions per capita decreased by 35%** over the same period.
- **Local Economy:** Around stations, cities can facilitate the **creation of health, education, shopping, and recreation facilities** to enable communities to thrive locally.
- **Green spaces:** Citizens have access to open green and public spaces and at the same time transit facilities are efficiently utilised.

Government Initiatives for TOD

- **National Transit Oriented Development Policy:** It has three major aims:
 - Assist in the transformation of cities from private vehicle dependent city to **public transport-oriented development**.
 - **Promote the usage of public transport** by making it accessible and encouraging green mobility.
 - **Create livable and affordable communities**, which are compact and walkable.
- **Metro Rail Policy 2017:** It envisages last-mile connectivity through pedestrian pathways, Non-Motorized Transport infrastructure and induction of facilities for para-transit nodes.

- **Smart Cities Mission:** It includes Transit Oriented Development, public transport and last-mile para-transport connectivity as one of the features of smart cities.
- **Urban Infrastructure Development Fund (UIDF):** Established through the use of priority sector lending shortfall, it is to be used by public agencies to create urban infrastructure (including TOD) in Tier 2 and Tier 3 cities.
- **Pradhan Mantri Awas Yojana:** It aims at providing affordable housing for sustainable and inclusive growth of urban areas.
- **Multimodal Transport Development:** India is enhancing multimodal transport connectivity in urban areas through bicycle pathways, pedestrian paths, metro rail system etc.
- **Local initiatives:** Some states and cities have developed their own TOD policies like Delhi and Madhya Pradesh (in draft stage).



Challenges with TOD

- **Social exclusion:** TOD can drive up property prices, increase inflation and accelerate gentrification.
 - Gentrification is the process whereby the **character of a poor urban area is changed by wealthier people moving in**, often displacing current inhabitants in the process.
- **Lack of coordination:** Lack of regional coordination at the metropolitan level and sector silo practices at the city level.
- **Inadequate policies and regulations:** For **strategically creating “articulated densities”** (densities that are strategically distributed across parts of a metropolitan area) that match the level of accessibility and connectivity offered by public transit.
- **Administrative constraints:** Like the neglected urban design at the neighbourhood and street level and inconsistencies in planning instruments.
- **Financial constraints:** Lack of realization of funding from increase in value from real estate prices and non-utilization of innovative financing mechanisms.

Way Forward - World Bank’s 3 Value (3V) Framework

World Bank proposes a **framework for guiding TOD plans, by simultaneously assessing the “three values” (3V) of transit stations** and surrounding areas:

- **Node value:** It describes the **importance of a station in the public transit network** based on passenger traffic, connections with other transport modes, and centrality within the network.
- **Place value:** It reflects the **quality and attractiveness of the area** around the station.
 - Factors include the diversity of land use; availability of essential services such as schools and healthcare; proportion of everyday amenities accessible by walking or cycling; and also the size of urban blocks around the station.
- **Market potential value:** It refers to the **unrealized market value** of station areas. It is measured by looking at the major variables that can influence:
 - Demand for land (current and future number of jobs in the vicinity, number of jobs accessible by transit within 30 minutes, current and future housing densities); and
 - Supply (amount of developable land, possible changes in zoning policy, market vibrancy, etc.).

3.7. LONG-TERM CAPITAL GAINS (LTCG) & INDEXATION BENEFIT

Why in the News?

Lok Sabha cleared the **Finance Bill, 2024** amending Long Term Capital Gain (LTCG) tax provision on immovable properties.

More on the news

- The Amendment comes **after proposal to remove indexation benefit in the calculation of LTCG** on sale of immovable properties in Budget 2024-25.
- The amendment **continued the abolishment of indexation benefits**, however, **grandfathered** properties acquired prior to 23rd July 2024.

Know the term

➤ **Grandfathering:** Grandfather clause, also called a "legacy clause," is an exemption that allows persons or entities to continue with activities or operations that were approved before the implementation of new rules, regulations, or laws.

Key Provisions of Amendment Act

- **Choices to taxpayers:** The amendment **offers taxpayers a choice**
 - Taxpayers can choose to pay **the lower tax amount of the following two**
 - ✓ **Old scheme/regime - Pay 20% LTCG tax with indexation** benefit on sale of property acquired before July 23, 2024.
 - ✓ **New Scheme/regime - Pay 12.5% LTCG tax without indexation** (down from earlier 20%).
 - However, **for purchases of property after the cut-off date of July 23, 2024, only the new regime** will be applicable.
- **Enhanced Exemption:** Exemption limit of 1 lakh for LTCG on **listed equity, Equity oriented mutual fund and units of business trust** has **increased to 1.25 lakh**.
 - Similarly, **the rate** for these assets for long-term has increased from 10 to **12.5%**.

What is Long-Term Capital Gains (LTCG) Tax?

- **Capital gains tax** is levied on the profit earned from the **sale of capital assets**, such as real estate, stocks and bonds.
 - There are 2 types of capital gains taxation **Long-Term Capital Gains (LTCG) Tax & Short-Term Capital Gains (STCG) Tax**.
- **LTCG Tax** is levied on the profit earned from the sale of assets held for longer periods.
 - The holding period **varies depending on the type of asset** (More than 12 months for Listed equity shares, Equity oriented Mutual funds; 24 Months for Unlisted Equity shares, immovable assets like House/land etc.; and 36 months for movable assets like Gold).
- **How LTCGs Taxed?**
 - For **equity shares and mutual funds, LTCG exceeding Rs 1.25 lakh is taxed at 12.5%** without the benefit of indexation.
 - For other assets like property, LTCG is taxed according to recent amendments.

What is indexation and how is it calculated?

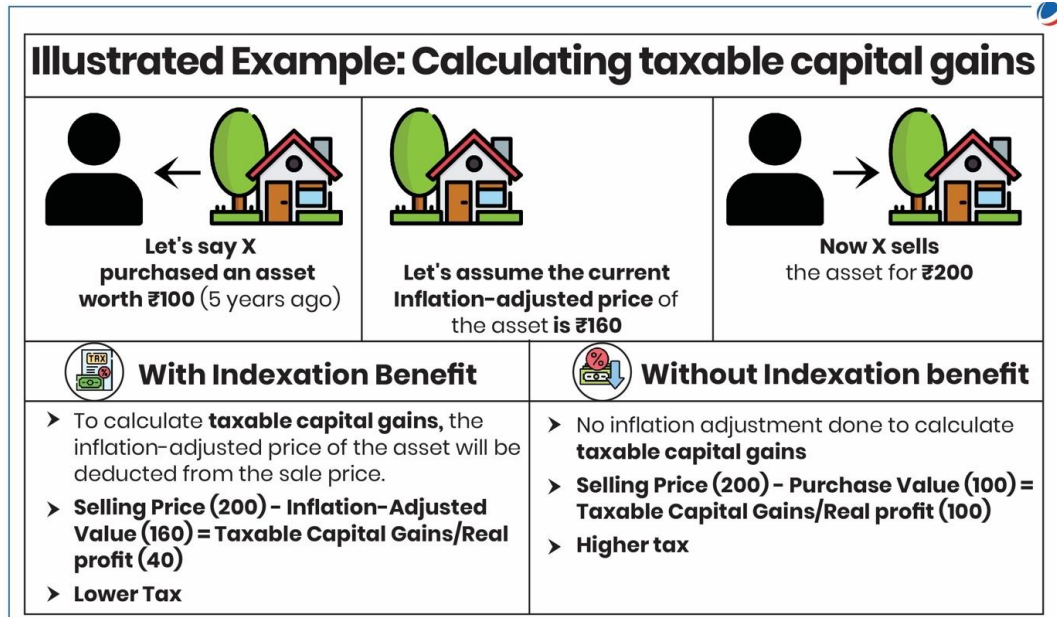
- **Indexation:** It refers to **adjusting the purchase price of an asset for inflation** while computing the capital gain.
- **Union Budget 2024 eliminates indexation benefit for all assets** (barring property acquired prior to July 23, 2024).
- **Cost Inflation Index (CII)** is used in the calculation of **Inflation adjusted price** of an asset which estimates the increase in an asset's price as a result of inflation.
 - It's **notified each year by the Income Tax department** and is defined under Section 48 of the Income Tax Act, 1961.

Inflation adjusted price = (CII of the year of sale / CII of the year of purchase) x Actual purchase price of the asset

- **Benefits of indexation:**
 - Allows a taxpayer to **neutralize the impact of inflation** while lowering the tax liability.
 - Ensures that **taxpayers are taxed on real gains than gains at prevailing prices**, which are a result of general increase in prices, and not economic growth.

Significance of Current Amendments

- Flexibility in Tax Calculations:** It provides an option for property owners to **choose between two regimes where tax liability is less** and ensures that indexation benefits will not apply if a taxpayer incurs a loss.
- Real Estate Growth:** Restoring indexation would **promote investment in real estate** by reducing the financial burden associated with selling a property.
- Curb Black Market:** By reducing the tax burden, restoring indexation can help to promote greater compliance with tax laws.



Concerns Associated with Amendments

- Higher Tax Liability:** 12.5% LTCG tax **without indexation** may lead to a **higher tax liability** than 20 % with indexation in several cases.
- May increase black money transactions:** Due to potential sale of properties at **circle rates** (minimum price at which a real estate is to be sold).
- Tax Evasion:** Higher tax liability could encourage **undervaluing of assets** resulting in a loss of tax revenue for the government.
- Disincentive for Investment:** The higher tax liability may **discourage individuals from investing** in property, particularly as a long-term asset.

Conclusion

Restoring the indexation benefit for LTCGs on property sales is a fair and equitable measure that benefits both taxpayers and the economy. However, it also raises concerns regarding unfair cutoff date, undervaluing of assets, tax erosion etc. Thus, there is need for **careful consideration and potential adjustments to the LTCG tax regime** to ensure a **fair and equitable system** for all taxpayers.

3.8. NEWS IN SHORTS

3.8.1. UN GLOBAL TAX TREATY

UN's Ad Hoc Committee to Draft Terms of Reference for a United Nations Framework Convention on International Tax Cooperation approved a **package of guidance** for UN Global Tax Convention.

- It aims at establishing a **UN Global Tax Treaty** for **legitimate, fair, stable, inclusive and effective international tax system**.
- Developing countries (including India) largely voted in favour** of treaty's terms of reference while industrialized nations such as Australia, Israel, Japan, UK and USA voted against it.

Objectives of UN Global Tax Convention

- Strengthening international tax cooperation** and making it inclusive and effective.

- **Addressing existing tax-related challenges** including digitalization and global operations of large Multinational Corporations (MNCs).
- **Mobilize domestic resources** and use tax policy for sustainable development.
- Accelerating implementation of Addis Ababa Action Agenda on Financing for Development and 2030 Agenda for SDGs.

Commitments of UN Global Tax Convention

- Fair allocation of taxing rights including **equitable taxation of MNCs**.
- Addressing **tax-related illicit financial flows, tax evasion and tax avoidance** by high-net worth individuals.
- Address **taxation of income derived from cross-border services**.
- Effective **mutual administrative assistance** in tax matters and **resolution of tax disputes**.

Other Global Initiative

- **OECD Global Minimum Tax** based on the Global Anti-Base Erosion Model Rules, mandates MNCs to pay a minimum tax rate in each jurisdiction where they operate, reducing profit shifting incentives.
 - It imposes a **minimum effective rate of 15%** on corporate profits.

3.8.2. NON-TARIFF MEASURES (NTMS)

India is 2nd largest user of NTMs in 2023 as per WTO's 'World Tariff Profiles' Report, 2024.

About Non-Tariff Measures (NTMs)

- NTMs are defined as **policy measures, other than ordinary customs tariffs**, that can be potentially detrimental to international trade in goods, changing quantities traded, prices, or both.
- **Examples**- Quotas or price controls, Sanitary and Phytosanitary measures, Technical Barriers to Trade, etc.
- Though many NTMs aim primarily at protecting public health or the environment, they also **affect trade through information, compliance, and procedural costs**.

3.8.3. DEBT-FOR-DEVELOPMENT SWAPS (DEBT SWAPS)

'Debt for Development Swaps: An Approach Framework paper' has been released by the **International Monetary Fund (IMF)**.

About Debt Swaps

- These are agreements **between a government and one or more of its creditors** to replace sovereign debt with one or more liabilities that include a spending commitment towards a specific development goal.
 - Development goals include **nature conservation, climate action, education, nutrition, support for refugees**, etc.
- **Criteria** that need to be considered in determining the appropriateness of **swaps include** country's **initial debt situation, net financial benefits** etc.
- Classified into two categories, namely, **bilateral** (official bilateral debt is written-off) and **commercial** debt swaps (target debt held by private creditors).

3.8.4. WORLD TRADE STATISTICAL REVIEW (WTSR) 2023

It is the **WTO's flagship statistical publication**.

- WTSR 2023 looks into the **latest developments in world trade**, featuring key data on global trade in merchandise and commercial services.
- **Key highlights:**
 - India retains **8th position in global agriculture exports in 2023**
 - India ranked **18th in merchandise exports and 7th in services exports**.
 - China, USA and Germany remained the top three merchandise exporters in 2022.

3.8.5. GLOBAL EMPLOYMENT TRENDS (GET) FOR YOUTH 2024 REPORT

The report by ILO represents the **20th anniversary publication** of GET for Youth and focuses on achievements, challenges and outlook for youth employment.

Key Highlights of Report

- **Post Covid recovery: Global youth unemployment rate in 2023 is 13%**, the lowest in 15 years, and **64.9 million unemployed youth**, the lowest since 2000.
- **NEET (Not in Employment, Education or Training) Status:** 20.4% of youth were in NEET in 2023, indicating broader labour market exclusion.
 - **2 in 3 young NEETs are women.**
- **Global Challenges:**
 - **Inequalities of Opportunity:** 4 in 5 young adult workers are in regular paid job in high-income countries, compared to 1 in 5 in low-income countries.
 - **Regional disparities:** Growth in youth labour force in Africa by 2050 while all other regions face contraction.
 - ✓ Also, 1 in 3 youth in Arab states and North Africa are unemployed.
 - **Youth well-being concern:** Many young people are stressed about job loss, state of economy, and lack of social mobility across generations.
 - **Educational Mismatch:** 2 in 3 young adult workers in developing economies hold qualifications that do not match well to their job.

Recommendations from the report

- Enhance education and training to improve school-to-work transitions and address skill mismatches.
- Target labour market policies to support disadvantaged youth.
- Promote entrepreneurship and self-employment among young people.
- Amplify the policy focus on job creation through gender-responsive macroeconomic and sectoral policies.
- Emphasize youth inclusion in policy making, improve international cooperation and enhance public-private partnerships.

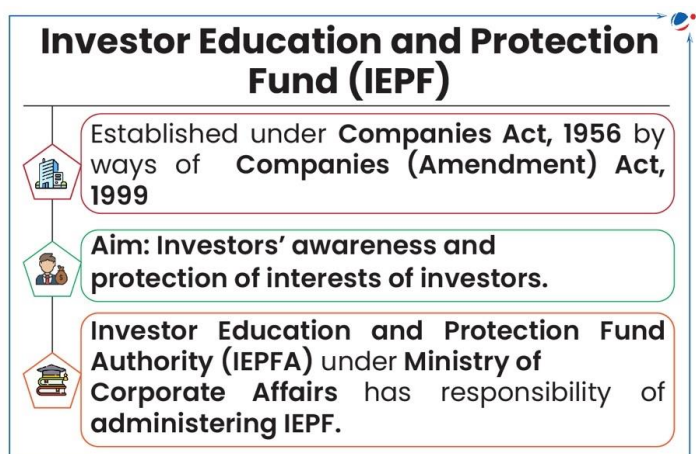
3.8.6. BANKING LAWS (AMENDMENT) BILL, 2024 INTRODUCED IN LOK SABHA

Amendment has been brought as **banking sector has evolved** over years, and seeks to **improve bank governance**.

- Bill proposes to **amend RBI Act, 1934**, Banking Regulation Act, 1949, **SBI Act, 1955**, Banking Companies (Acquisition and Transfer of Undertakings) Act, 1970 and **Banking Companies (Acquisition and Transfer of Undertakings) Act, 1980**.

Key Provisions of Bill

- **Increased Nominees:** Allows depositors to nominate up to four nominees simultaneously (With proportion of their shares specified) and successively.
 - **Successive nomination:** Several nominees listed in specific order, nominees would be contacted for claiming funds according to order.
- **Investor education and protection fund (IEPF):** Enables transfer of **unclaimed dividends, shares, and interest** or redemption of bonds to **IEPF** when they remain unclaimed for seven consecutive years.
 - Bill allows individuals to claim transfers/refunds from IEPF.
- **Substantial interest in shareholding:** Threshold in shareholding has been increased from Rs 5 lakh to Rs 2 crore **for directorships**.
- **Provision for Cooperative Banks:**
 - **Extends tenure of directors** in cooperative banks from 8 years to 10 years.



Significance

- Provide **consistency in reporting to RBI**
- **Reduce unclaimed deposits** (over ₹42,000 crore in march 2023) by increasing nominee number.
 - **Unclaimed deposits are** balances in savings/current accounts that are not operated for 10 years, or term deposits not claimed within 10 years from date of maturity.

3.8.7. RBI REVISED NPAS PROVISION NORMS FOR CO-OPERATIVE BANKS

Need for New Norms arises as some banks were **not recognizing** required provisions for Non-Performing Assets (NPAs) as an expense.

- These new norms (applicable to Urban, state and central co-operative banks) will **bring uniformity in treatment of Bad & Doubtful Debt Reserve (BDDR)**.
 - **Several co-operative banks** established BDDR for financial stability (For managing bad loans).

New Norms:

- **All provisions (related to “BDDR” or other head)** under Income Recognition, Asset Classification, and Provisioning (IRACP) norms must be **charged as an expense** to Profit and Loss Account.
- **After accounting for all provisions** as per IRACP norms and other regulations, co-operative banks may make **appropriations of net profits to BDDR**.

Co-operative Banks:

- Works on principle of cooperation and are **owned and operated by their members**.
- Can be divided into **Rural and Urban co-operative banks**.

Issues with co-operative Banks:

- **Regional Disparity:** Almost 82 per cent of total UCBs and around 90 per cent branches of all UCBs are **concentrated in Western and Southern regions** of country (2020).
- **Dual Regulation:** Managerial, administrative activities are **overseen by state** governments while banking activities are regulated and **supervised by RBI /NABARD**.
- **Other issues:** Inadequate avenues for raising capital, **High Gross NPAs** etc.

Steps Taken for Reform in co-operative banks:



Banking Regulation (Amendment) Act, 2020: Brought management, governance etc. under RBI's purview.



Umbrella Organization for Urban Cooperative Banks: National Federation of Urban Co-operative Banks and Credit Societies Ltd.

3.8.8. FRONT RUNNING

SEBI notifies norms for mutual funds for preventing fraudulent transactions and front running.

Front Running

- Refers to **usage of non-public information** to directly or indirectly buy or sell securities, or enters into options or futures contracts, **in advance of a substantial order**. (Securities and Exchange Board of India (SEBI))
- It **undermines confidence in the financial markets and creates an uneven playing field** for other investors.
- It is **illegal** in India.

3.8.9. WHITE CATEGORY SECTORS

White category sectors will now **not require prior permission of the state pollution control boards** to establish and operate under the Air Act, 1981 and Water Act, 1974.

- The permissions officially known as '**consent to establish**' (CTE) and '**consent to operate**' (CTO) are granted to regulate industries that discharge effluents or emit pollutants into the environment.
- White category industries will have to inform SPCBs through **self-declarations**.

White Category Sectors

- Those industries which are **practically non-polluting** are categorised under the 'white category' by the **Central Pollution Control Board**.
- It includes Wind and solar power projects, assembly of air coolers, bicycle assembly etc.

3.8.10. CLIMATE RESILIENT AND BIOFORTIFIED VARIETIES OF CROPS RELEASED

Prime Minister released 109 high yielding, climate resilient and biofortified varieties of crops.

- These crops have been developed by the **Indian Council of Agricultural Research (ICAR)** and release of new varieties of crops is the example of a "lab to land" programme.
- ICAR has been running **crop-improvement programme** to develop new crop varieties and hybrids with wider adaptability and higher yield.
- **Crop-improvement process uses** different strategies such as
 - **Genomics**-assisted selection
 - **Phenomics** (systematic measurement and analysis of qualitative and quantitative traits)
 - **Conventional breeding** or **Biotechnology-based approaches** like **genetic engineering** and **genome editing**.

Need of Crop Improvement

- **Managing Impact of Climate Change:** Climate resilient seeds can yield good crop even in **adverse weather** (heat waves, droughts, etc.). E.g. Bt cotton
 - Climate resilient crops will reduce crop losses due to diseases and pests attacks.
- **Food Security:** Agricultural yields are projected to drop by 16% by 2030 (World Economic Forum).
- **Nutritional Security:** Government seeks to promote biofortified crops by linking them with the programmes like **Mid-Day Meal (PM Poshan Scheme)**, etc., to make India free from malnutrition.
 - Also, these are affordable as biofortified varieties crop does not involve any additional cost on preparing the **enriched food grains**. E.g. vitamin-A rich maize grains.
- **Rising Farmers Income: High-yielding and adaptable crop varieties** contribute to higher incomes.

About Biofortification

- It is the process of improving **the nutritional quality** of food crops. For example, iron and zinc rich wheat grains
- It **differs** from **conventional fortification** as it **aims to increase nutrient levels** in crops during **plant growth** rather than through **manual means** during **processing**.

About Lab to Land programme

- It promotes transfer of improved technology developed by agricultural universities and research institutions to farmers.

3.8.11. OPEN MARKET SALE SCHEME (OMSS) (DOMESTIC)

States can purchase rice from Food Corporation of India (FCI) under the OMSS Domestic without participating in the e-auction from August 1, 2024.

- It aims to **reduce the huge surplus of stocks** prior to the commencement of the new procurement season.

OMSS – Domestic

- It refers to offering of food grains (wheat & rice) in the open market at prices, **fixed by the Ministry of Consumer Affairs, Food & Public Distribution** through e-auction.
- It aims to **control the price in the market** with the aim to curb inflation.

3.8.12. NITI AAYOG'S REPORT ON SEAWEED VALUE CHAIN

NITI Aayog publishes a report titled "Strategy for the development of Seaweed Value Chain".

- **Seaweeds are** numerous types of **marine plants and macro algae** that thrive in rivers, lakes, and other bodies of water.
- Cultivation of **seaweeds are part of aquacultures**. **Fishing and aquaculture** sector contributes 1.5% of India's GDP.

Significance of Seaweed Farming

- **Economic:** Valuable for bioactive compounds and applications in food, pharmaceuticals etc.
- **Environmental:** Important role in **Carbon Sequestration & climate resilience.**
- **Nutrition imperative:** Provide vital **minerals and Vitamins** like A, B1, B12, etc.

Challenges faced by Seaweed Farming

- Lack of a **comprehensive policy framework,**
- **Lack of availability of quality Seeds**
- **Ecological concerns** (Exotic species impact on biodiversity and coral reefs).

Recommendations For Promoting Seaweed Farming

- **Regulatory and governance reforms:** Forming National Steering Committee; Priority Sector Lending (PSL) for seaweed, etc.
- **Social Security and Financial Support:** Providing crop insurances; mobilization of farmers through SHGs etc.
- **Infrastructure and institutions:** Establishment of seed banks, processing centers, marketing centers etc.

Steps taken by India

- **PM Matsya Sampada Yojana:** Target of 1 million ton seaweed production per year by 2025.
- **Expert committee chaired by Dr. V K Saraswat (NITI Aayog)** to review the draft policy on development of seaweed value chain.
- **Offshore cultivation** in Andaman region started by **NIOT-ACOSTI.**
- **Development of a GIS-based portal:** To view the mapped seaweed cultivation sites

3.8.13. GRAIN ATM

WFP and Government of Odisha Jointly launched **24/7 'Grain ATM'** in Bhubaneswar.

- India's first 24/7 'Grain ATM,' called '**Annapurti**,' will be set up across Odish to provide **food grains to beneficiaries with 24/7 access under the National Food Security Act (NFSA).**
- NFSA entitles up to **75% of the rural population and 50% of the urban population to receive subsidized food grains.**

About Annapurti

- It is a **Made-in-India product** (designed and developed by WFP India)
- It **dispenses the type and quantity of the selected grain** (wheat, rice or millet) to each beneficiary, after biometric authentication.
- It can provide **universal access to food grains and reduce the waiting time by 70%.**
- It is energy efficient and **can be connected to solar panels for automatic refilling.**
- At the **2022 WFP Innovation Awards**, it was recognized as one of the WFP's **top 5 innovative solutions for disrupting hunger.**

About UN World Food Programme (WFP)



Genesis

- **Established in 1961** by the United Nations to help alleviate world hunger with a priority on **achieving SDG 2 (Zero Hunger).**



Objective

- World's **largest humanitarian organization** saving lives in emergencies and providing food assistance.



Achievement

- WFP is **awarded the Nobel Peace Prize** in 2020.



Funding

- Voluntary donations from Government, Corporates and Individuals.



Reports

- State of Food Security and Nutrition in world (along with FAO, UNICEF etc.)

3.8.14. JAN POSHAN KENDRAS

Union Minister of Consumer Affairs, Food and Public Distribution launched pilot project for transformation of 60 Fair Price Shops (FPS) into Jan Poshan Kendras.

- FPSs are shops licensed to distribute essential commodities issued under the **Essential Commodities Act (1955)** to the ration card holders under **Targeted Public Distribution System**.

About Jan Poshan Kendras

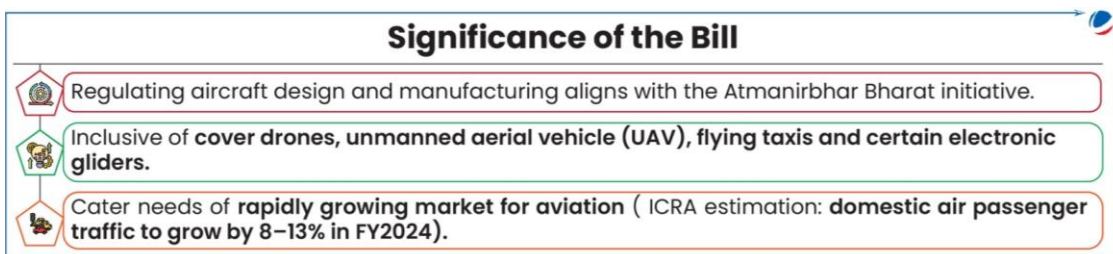
- Kendras will **offer a diverse range of nutrition-rich food items to consumer** as well as provide an **additional source of income to the FPS dealers**.
- They have to **store 50% products under the category of nutrition** while the rest for keeping other household items.
- The pilot will cover states of **Gujarat, Rajasthan, Telangana, and Uttar Pradesh**.

3.8.15. BHARATIYA VAYUYAN VIDHEYAK 2024 INTRODUCED IN THE LOK SABHA

It will replace the 90-year-old **Aircraft Act, 1934** (for the control of the manufacture, possession, use, operation, sale, import and export of aircraft).

Key Highlights of the Bill

- Aim:** To address the **ambiguities in the existing law** and **for ease of doing business & manufacturing in aviation sector**.
- Important Provisions:**
 - To empower the Central Government to make rules to **implement the Convention** relating to **international civil aviation**.
 - ✓ **E.g.,** Chicago Convention (1944) and the International Telecommunication Convention (1932).
 - To give the **Directorate General of Civil Aviation (DGCA), the Bureau of Civil Aviation Security (BCAS), and the Aircraft Accident Investigation Bureau (AAIB)** increased powers.
 - To empower the Central Government to issue orders (like detaining aircraft) in **emergency in the interest of public safety**.



3.8.16. QCI SURAJYA RECOGNITION & RANKING FRAMEWORK

Quality Council of India (QCI) introduced QCI Surajya Recognition & Ranking Framework.

About Framework





- It **aims at recognising and rewarding states** and organizations that excel in **quality and innovation** to achieve the aim of a **Developed (Viksit) India**.
- It is categorized under four pillars:
 - Shiksha (Education),
 - Swasthya (Health),
 - Samriddhi (Prosperity), and
 - Sushasan (Governance).

About QCI

- It was established as the **national body of accreditation in 1996** and is an **autonomous non-profit** organization under the **Societies Registration Act, 1860**.
 - Based on the **recommendation** of the **Expert Mission of European Union**.
- It was jointly set up by the **Government of India and the Indian Industry** (ASSOCHAM, FICCI, CII).

- **Nodal Department:** Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.
- **Governing Council:**
 - **39 members** including the Chairperson and Secretary General with **equal representation** of Government, Industry and other Stakeholders.
 - **Chairperson is nominated by the Prime Minister.**
- **Role of QCI**
 - **National Accreditation Body (NAB):** To promote quality through the National Quality Campaign in line with global standards.
 - **Create a mechanism for third-party assessment** of products, services and processes.
 - Improve the **quality of life and wellbeing** of the citizens of India.

Achievements

-  **Healthcare:** Worked with ICMR to expand **COVID-19 related testing labs, ABPMJAY quality certification** programme with NHA, Kayakalp certification etc.
-  **Sanitation:** Certification of **ULBs as ODF, ODF+, ODF++.**
-  **Education:** Launched **eQuest: E-Quality Platform for Employability through Skill and Training**
-  **Agriculture:** Standards and Scheme for **Good Agriculture Practice (GAP)** Implementation in countries of **SAARC** (project with **FAO**).

3.8.17. LITHIUM RESERVES IN INDIA

Atomic Minerals Directorate for Exploration and Research has established 1,600 tonnes of Lithium resources in Mandya district.

- **Lithium reserve discovery will lead to**
 - Reduced **Import Dependence** (Currently India majorly depends on **China and Hong Kong**)
 - **self-sufficiency** in energy storage needs & Green transition
 - Industrial development **E.g. Vehicle and automobile industry development**

About Lithium (white gold)

- Lithium is a soft, silvery-white alkali toxic metal and has the lowest density of all metals.
- It has been identified as **critical and strategic minerals** under Mines and Mineral (Development and Regulation) (Amendment) Act 2023.

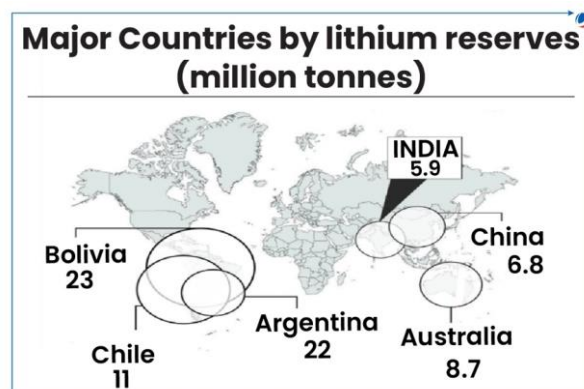
Applications of Lithium

- **Batteries: Rechargeable Li-Ion batteries** for mobile phones, EVs etc. and non-rechargeable batteries for heart pacemakers, clocks etc.
- **Alloys:** Alloyed with aluminum and magnesium to improve strength and reduce weight **e.g. armor plating, aircraft, bicycle frames, and high-speed trains etc.**
- **Industrial Use:** Used in air conditioning, industrial drying systems and glass ceramics.

Steps Taken

- **KABIL** explores strategic minerals in overseas territories.
- **Australia India Critical Minerals Investment Partnership**
- **Geological Survey of India (GSI)** is exploring Lithium reserves in India.
- Ministry of Mines joined **Mineral Security Partnership (MSP)** led by USA.

To know more about Lithium Reserves, refer to Article 7.5 Lithium in January 2024 Monthly Current Affairs Magazine



3.8.18. TANTALUM

Central Government **notified Tantalum as a Critical and Strategic Mineral** under the Mines and Minerals (Development and Regulation) Act, 1957.

About Tantalum

- Tantalum is a rare metal with the atomic number 73
- It's grey, **heavy, very hard, and corrosion-resistant**.
- **Characteristics:**
 - When pure, tantalum is **ductile** (can be stretched, pulled, or drawn into a thin wire).
 - **Extremely high melting point**.
- **Uses:** Making capacitors in electronic devices, surgical equipment & implants, components for chemical plants, nuclear power plants, aeroplanes and missiles etc.



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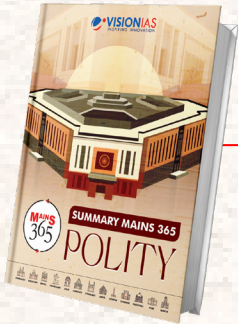
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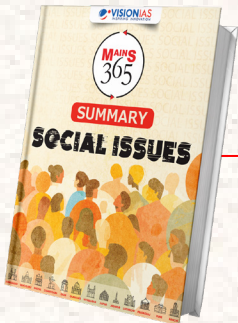
Polity and Governance



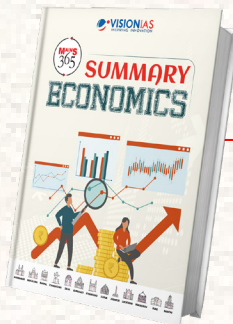
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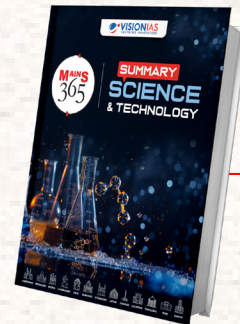
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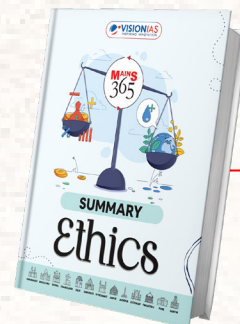
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4. SECURITY

4.1. 25 YEARS OF INDIA'S NUCLEAR DOCTRINE

Why in the news?

India is celebrating 25 years of its **nuclear doctrine launch**.

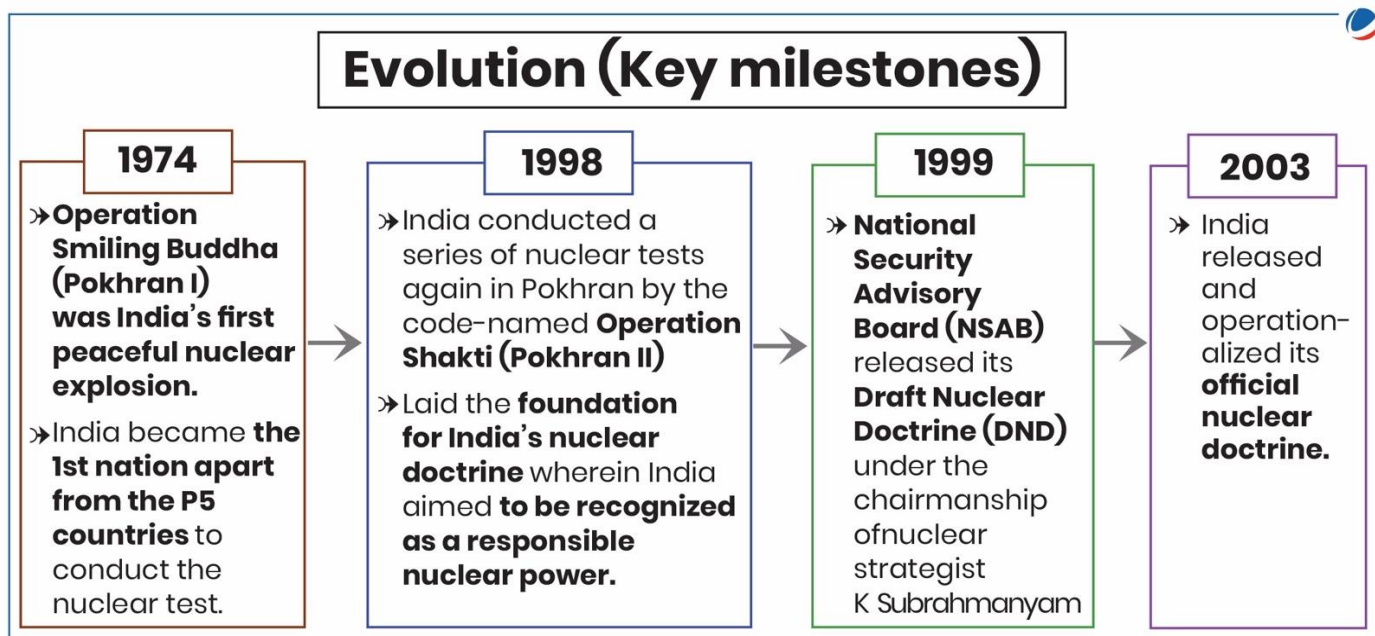
About India's Nuclear doctrine

Nuclear Doctrine encompasses the goals and missions that guide the deployment and use of nuclear weapons.

Do you know? As per, SIPRI Yearbook 2024, **India's arsenal increased from 164 in 2023 to 172**, representing a slight increase that has given it the two-warhead advantage over Pakistan.

Key features of India's nuclear doctrine

- **Building and maintaining a credible minimum deterrent:** Nuclear arsenals will be minimal enough to provide credible deterrence against adversaries.
- **A posture of "No First Use" (NFU):** Nuclear weapons will only be used in retaliation against a nuclear attack on Indian territory or Indian forces anywhere.
- **Mutually Assured Destruction (MAD) on both sides:** Nuclear retaliation to a first strike will be massive and designed to inflict unacceptable damage.
- **Non-use** of nuclear weapons against **non-nuclear weapon states (NNWS)**.
- **Commitment to the goal of a nuclear weapon-free world.** Through global, verifiable and non-discriminatory nuclear disarmament.
- **Governance:** **Nuclear Command Authority (NCA)** comprises a **Political Council and an Executive Council**.
 - **Political Council:** chaired by **Prime Minister**, is the sole body (**civilian political leadership**) which can authorize the use of nuclear weapons for retaliatory attacks.
 - **Executive Council:** chaired by **National Security Advisor**, provides inputs for decision making by NCA and executes the directives given to it by the Political Council.
- **Other aspects of the doctrine**
 - **Option of retaliation with nuclear weapons** in the event of a major chemical or a biological weapons (CBW) strike against India.
 - Continuance of strict controls on export of nuclear and missile related materials and technologies and participation in the Fissile Material Cutoff Treaty (FMCT) negotiations.
 - Moratorium on nuclear tests.



India's present nuclear standing vis-a-vis the global nuclear discourse:

- **Comprehensive Test Ban Treaty (CTBT):** Prohibits all nuclear explosions; **India did not sign** due to lack of time-bound disarmament commitment by nuclear-weapon states.
- **Non-Proliferation Treaty (NPT), 1968:** Aimed at limiting spread of nuclear weapons through three pillars of non-proliferation, disarmament, and peaceful use of nuclear energy.
 - **India did not sign the treaty** due to biases as it divided world into “nuclear haves” and “nuclear have-nots”
- **Treaty on the Prohibition of Nuclear Weapons (TPNW):** **First legally binding** agreement to ban nuclear weapons. **India did not sign** as it does not contribute to customary international law or set new standards.
- **Global Multilateral export control regimes**
 - **India is a part:**
 - ✓ Missile Technology Control Regime or MTCR (India joined in 2016)
 - ✓ Wassenaar Arrangement (India joined in 2017)
 - ✓ Australia Group (India joined in 2018)
 - **India is not a Part: Nuclear Suppliers Group (NSG) 1974** which was established **post-India's 1974 nuclear test** to prevent nuclear exports for weapon-making.

Factors underscoring need for India's nuclear doctrine

Efficacy of No First Use: It remains the **most debated element of India's nuclear doctrine.**

Aspect	Against NFU	In Favour of NFU
Risk of Initial Casualties	Could lead to unacceptably high initial casualties and damage to Indian population, cities, and infrastructure.	Contributes to India's strategic restraint posture and enables civil nuclear cooperation agreements and accommodation in multilateral nuclear export control regimes.
Ballistic Missile Defence (BMD)	An elaborate and costly BMD system required to defend against a first strike.	NFU helps India maintain a defensive and non-escalatory stance.
Effectiveness Against Nuclear neighbours	Ineffective against Pakistan, which is lowering its threshold with Tactical Nuclear Weapons (low-yield weapons to be used in their own territory against Indian forces).	A prudent and non-escalatory approach to managing tensions with China and contributes to regional stability.

How can the present nuclear doctrine be strengthened?

- **Dedicated defence technology programs** on the lines of **Integrated Missile Development Programmes** can be started to ensure capacity building alongside technological developments.
- **Increasing flexibility on 'massive retaliation' commitment:** It can lead to political actors to escalate the nuclear war, thus limiting the retaliatory options.
 - To overcome this, **some ambiguities could be introduced** in the doctrine which enables the country to respond to threats like TNWs without it escalating to a full-fledged war.
- **Synchronizing with evolving Foreign Policy** in light of geopolitical changes.
 - **Periodic review in a constantly evolving geo-strategic world order.** For instance, American and Russian governments review their nuclear policy periodically.
 - The intensification of China-Pakistan relations and their growing nexus with Russia, along with geopolitical instability across the globe demands calibrated review of India's doctrine.
- **Building upon its status of a responsible nuclear power** to emerge as a **potential leader for promoting global nuclear non-proliferation and disarmament.** Following efforts can be made by India in this regard:
 - **Engaging in multilateral discussions** at the UN and other platforms **such as Conference on Disarmament** to voice the security and non-proliferation issues concerning states like itself.
 - **Conducting open and transparent dialogues** on nuclear related issues with neighbouring countries as confidence building measures and convince more countries to adopt NFU.
 - ✓ Presently, **China is the only other nuclear nation in addition to India** that professes to **follow the doctrine of NFU.**

To know more about Nuclear weapons and International nuclear regulations, refer to Article 2.8. Nuclear Weapons Arsenal in July 2024 Monthly Current Affairs Magazine and Article 4.2. Global Nuclear Regulation in November 2023 Monthly Current Affairs Magazine.

4.2. NEWS IN SHORTS

4.2.1. INDIA'S FIRST REUSABLE HYBRID ROCKET NAMED RHUMI-1 LAUNCHED

RHUMI-1, developed by **Tamil Nadu-based startup Space Zone India** in collaboration with Martin Group, was launched from Thiruvudandhai in Chennai.

- It was **launched using mobile launcher** and carried **3 Cube Satellites and 50 PICO Satellites**, which will collect data on global warming and climate change.
 - **Cube satellites** are a class of **nanosatellites**, weighing between 1-10 kg.
 - **Pico satellites** are small satellites that typically weigh between 0.1 and 1 kg.

Features of RHUMI-1

- **Hybrid Rocket Engine:** RHUMI-1 is a **hybrid rocket engine** that uses a **combination of solid and liquid propellants** to improve efficiency and reduce operational costs.
- **Adjustable Launch Angle:** Precise adjustments from **0 to 120 degrees** allow for meticulous **control over its trajectory**.
- **Electrically Triggered Parachute System:** An innovative, **cost-effective, and eco-friendly** descent mechanism ensures **safe recovery of rocket components**.
- **Environment Friendly:** RHUMI is **100% pyrotechnic-free** and 0% TNT.

Reusable Rockets

- Reusable rockets release the payload, **lands back on Earth** and can again be launched with new payload.
- **Benefits**
 - **Cost Savings:** Up to **65% cheaper** than building a new rocket for every launch.
 - **Reduce Space Debris:** By **minimizing discarded rocket components**.
 - **Increased launch frequency:** Lesser turnaround time enables the rocket to be used more frequently.

4.2.2. ASTRA MARK 1 MISSILES

Air Force approves production of 200 Astra Mark 1 missile

About Astra Missiles

- It is a **Beyond Visual Range (BVR) class of Air-to-Air Missile (AAM)** system designed to be mounted on fighter aircraft.
 - The ASTRA Mk-I Weapon System **integrated with SU-30 Mk-I aircraft** is being inducted into the Indian Air Force (IAF).
- It has range from **80 to 110 km**.
- The missile is designed to engage and destroy highly **manoeuvring supersonic aircraft**.
- It is developed by the **Defence Research and Development Organisation** and manufactured by **Bharat Dynamics Limited**.

4.2.3. MAN PORTABLE ANTI-TANK GUIDED MISSILE

Recently, DRDO successfully test-fired indigenously built Man-Portable Anti-Tank Guided Missile (MPATGM).

About MPATGM Weapon System

- It is a **shoulder-launched, portable missile system**, specifically designed to counter enemy tanks and armoured vehicles.
- It consists of **Launcher, Target Acquisition System, and Fire Control Unit**.
- It is equipped with **advanced infrared homing sensors** and **integrated avionics** which makes it versatile in both day and night operations.
- It is equipped with a **high-explosive anti-tank (HEAT) shaped charge warhead**.

4.2.4. GAURAV

Defence Research and Development Organisation (DRDO) carries out successful maiden flight test of **Long Range Glide Bomb 'GAURAV'** from **Su-30 MK-I platform**.

About GAURAV

- An air launched **1,000 kg class glide bomb** capable of hitting targets at long distance.
 - **Glide bomb** after launch steer towards the target **using highly accurate hybrid navigation scheme** with a combination of **Indian Navigation System (INS)** and Global Positioning System (GPS) data.
- Designed and developed indigenously by the **Research Centre Imarat (RCI)**, Hyderabad.

4.2.5. EXERCISES IN NEWS

- **Tarang Shakti:** Indian Air Force (IAF) hosted Phase-I of the **Exercise Tarang Shakti** at Sulur airbase in Tamil Nadu.
 - India's **first multinational** air exercise.
 - Aims to showcase India's defense prowess and provide a platform for participating militaries to **foster interoperability**.
 - IAF announced to conduct it biennially.
- **Udara Shakti:** It is a joint air exercise of **India and Malaysia**.
- **'Parvat Prahaar':** Army is carrying out **'Parvat Prahaar'** exercise in **Ladakh**, focusing on **high-altitude warfare and operations**.
 - It involves various military units and equipment to maintain readiness near the **India-China border**.
- **Mitra Shakti:** It is an **annual military exercise** between **India and Sri Lanka**.
 - Mitra Shakti" aims to **improve the operational proficiency** of both armies by facilitating the exchange of skills, experiences, and best practices.
- **Khaan Quest:** Indian army will participate in the **21st edition of the Multinational military exercise**, which will be conducted at Ulaanbaatar, Mongolia.
- **Maritime Partnership:** Recently Indian Naval Ship Tabar participated in maritime Partnership Exercise (MPX) **between India and Russia**.

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5. ENVIRONMENT

5.1. THE DISASTER MANAGEMENT (AMENDMENT) BILL, 2024

Why in the News?

Recently, the Union Government introduced Disaster Management (Amendment) Bill, 2024 in Lok Sabha to amend **Disaster Management Act, 2005**.

More on the News

- **Disaster Management (DM) Act, 2005** was enacted to provide for effective management of disasters and for matters connected therewith.
- The Bill aims to mainstream **disaster management in development plans**, aligning with recommendations of **15th Finance Commission**.
 - Amendment Bill will bring more clarity and convergence in **roles of authorities and committees**.

Comparisons of Bill and DM Act 2005:

Provisions	DM Act, 2005	DM (Amendment) Bill, 2024
Preparation of DM plans	<ul style="list-style-type: none"> • National Executive Committee and State Executive Committee prepare national and state DM plans, respectively. 	<ul style="list-style-type: none"> • National Disaster Management Authority (NDMA) and State Disaster Management Authority (SDMA) will prepare DM plans.
Functions of NDMA and SDMA at their respective levels	<ul style="list-style-type: none"> • Reviewing DM plans of government departments, • Setting guidelines for preparation of DM plans for authorities below them, and • Recommending provision of funds for disaster mitigation. 	<ul style="list-style-type: none"> • Bill adds new functions for these authorities <ul style="list-style-type: none"> ○ Taking periodic stock of disaster risks. ○ Providing technical assistance to authorities. ○ Recommending guidelines for minimum standards of relief. ○ Preparing national and state disaster databases.
State & Disaster Databases	<ul style="list-style-type: none"> • No Provisions 	<ul style="list-style-type: none"> • Contain information on type & severity of disaster risks, allocation of funds and expenditure, and disaster preparedness and mitigation plans.
Appointments to NDMA:	<ul style="list-style-type: none"> • Act provides that central government will provide NDMA with officers, consultants, and employees, as it considers necessary. 	<ul style="list-style-type: none"> • Bill empowers NDMA to specify the number and category of officers and employees, with previous approval of the central government.
Urban DM Authorities:	<ul style="list-style-type: none"> • No Provisions 	<ul style="list-style-type: none"> • Bill empowers state government to constitute a separate Urban Disaster Management Authority (UDMA) for state capitals and cities with a municipal corporation except for Delhi and Chandigarh.
Formation of State Disaster Response Force:	<ul style="list-style-type: none"> • No Provisions 	<ul style="list-style-type: none"> • Bill empowers state government to constitute a State Disaster Response Force (SDRF). <ul style="list-style-type: none"> ○ State government will define functions of SDRF and prescribe terms of service for its members.
National Crisis Management Committee (NCMC) and the High Level	<ul style="list-style-type: none"> • No provisions 	<ul style="list-style-type: none"> • Bill provides statutory status to NCMC and HLC. • NCMC will function as the nodal body for dealing with major disasters with serious or national ramifications. • HLC will provide financial assistance to state governments during disasters.

Committee (HLC)		<ul style="list-style-type: none"> The NCMC will be led by the Cabinet Secretary, and the HLC by the Minister of department overseeing disaster management.
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Issues with Bill:

- **Lack of financial Devolution:** Urban Local Bodies will find difficult to set up, equip, and run the UDMA's due to financial constraints.
- **Centralization:** Bill grants excessive rulemaking power to Central government through delegated legislation to make rules on specific matters, which could potentially overlap with legislative powers reserved for States.
- **Test of Constitutionality:** Bill is brought under Entry 23 of the Concurrent List of Seventh Schedule which deals with "social security and social insurance, employment and unemployment" as Disaster Management is not mentioned in the Seventh Schedule.
- **Restricted definition of 'disaster':** Bill does not expand the list of notified disasters to include climate-induced disaster such as heatwaves.

Disaster Management Act 2005

- It was enacted in the aftermath of the **devastating 2004 tsunami**.
- **Establishment of Authorities:** Act establishes a three-tier structure for disaster management.
 - **National Disaster Management Authority (NDMA):** Headed by the Prime Minister, responsible for formulating policies, plans, and guidelines for disaster management at the national level.
 - **State Disaster Management Authorities (SDMAs):** Headed by the Chief Ministers, responsible for disaster management at the state level.
 - **District Disaster Management Authorities (DDMAs):** Led by the District Magistrate, responsible for implementing disaster management plans at the district level.
- **Preparation of Disaster Management Plans:** The Act mandates the preparation of disaster management plans at national, state, and district levels.
- **National Disaster Response Force (NDRF):** Establishes NDRF for specialized response to disasters, including search and rescue operations, medical aid, and relief distribution.
- **Funding Mechanisms:** Provides for the creation of the National Disaster Response Fund (NDRF) and State Disaster Response Funds (SDRF) to finance relief and response measures.
- **National Institute of Disaster Management (NIDM):** Act established **NIDM** for disaster-related research, training, awareness, and capacity building.

Conclusion

Bill 2024 aims to strengthen disaster risk reduction and management by introducing new structures like Urban Disaster Management Authorities. However, its success will hinge on overcoming challenges related to coordination, authority, and resource allocation among various levels of government.

5.1.1. TECHNOLOGY IN DISASTER MANAGEMENT & RISK REDUCTION (DMRR)

Why in the news?

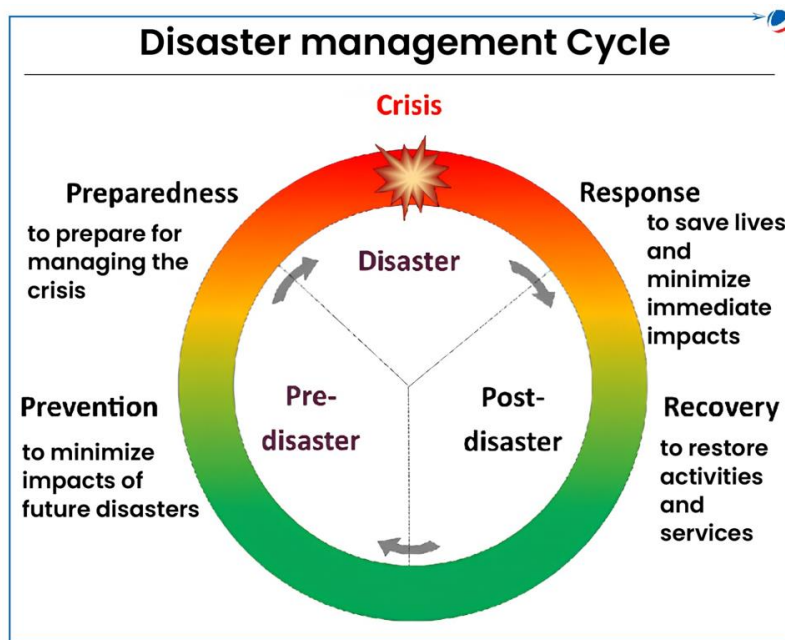
Recently, advancement in geospatial technology based on AI, Machine Learning (ML) and Internet of things (IoT) have been widely used in DMRR.

Use of Technology in Disaster Management Cycle:

It can be used at every stage of the cycle, **from Prevention to preparedness to response to recovery**.

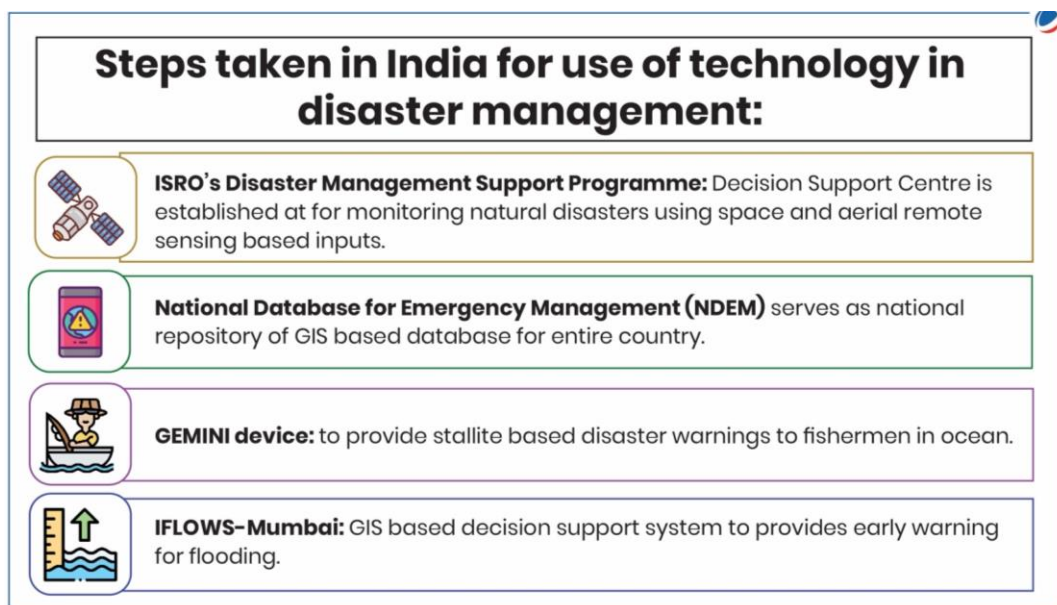
- **Prevention/Mitigation:** Technology plays a crucial role in disaster mitigation by improving predictions and reducing risks. E.g., building hazard maps using **AI**.
- **Preparedness:** Technology can be used to help create and implement emergency plans. It can also be used to monitor potential threats, such as weather patterns that could lead to a natural disaster.
 - **Disaster prediction and early warning systems:** Remote sensing, ML, drones can be used to collect and process data. AI is used for disaster modeling, usually through deep learning. **E.g. Google Disaster Alerts**
 - **Odisha State Disaster Mitigation Authority (OSDMA)** has developed a web based platform called "**SATARK**" to provide warning information for various hazards such as heatwave, lightning, drought and flood monitoring.

- **Event simulation:** Objective is to prepare and train people. Key technologies for event simulation are Augmented Reality (AR) and Virtual Reality (VR). **E.g. Mobile Learning Hub Philippines.**
- **Response:** In an emergency, technology can be used to coordinate and manage the response effort. It can also be used to provide information and assistance to those affected by the disaster.
 - **Disaster detection:** Social media platforms as an important source of information and means of communication during disasters. **E.g. Earthquake detection through X(Formerly twitter).**
 - **Emergency communication:** AI powered chatbots can be powerful tools for managing and communicating with public during disasters. **E.g., Covid-19 chatbots launched by WHO.**
 - **Search and rescue:** Identify people in critical need through satellite imagery or social media posts. **E.g. Use of drones in Wayanad after landslide** for search and rescue mission.
- **Recovery:** Technology can help with the rebuilding process after a disaster. It can be used to assess damage, create reconstruction plans, and coordinate relief efforts.
 - **Disaster relief logistic/resource allocation:** 3D printing is being used to create unique components for machines, ensuring the functionality of critical systems during a disaster.
 - Drones can be used to transport essential goods such as vaccinations or medical supplies.



Challenges with Implementation

- **Technical limitations:** It includes lack of technical knowledge & technical infrastructure and digital divide which can prevent the use of a technology.
- **High cost:** The cost of putting technologies like AI and drones into place and keeping them running can be high.
- **Data requirements:** Data is a critical enabler that determines the level of success. The key dimensions to consider in relation to data are **access, quality, timeliness and relevance.**
 - Ensuring the quality of data is a challenge when it is used for real-time decision-making.
- **Data responsibility and integrity:** Responsible data use and collection, including **privacy and integrity concerns,** are critical because they can have a direct impact on the lives of vulnerable populations.
- **Gender Dimension:** Women's potentially **limited access** (or lack of access) to technology exacerbates concerns like data collection and crisis management.



Way Forward

- **Private sector Participation:** It can play an important role in **bridging the technology gap** and participating in technology-enabled disaster management.
- **Bridging the Digital Divide and Enhancing Technical Capacity:** Skill development for building technical knowledge, skills, and digital literacy of personnel involved in disaster management.
- **Strengthening Community-Based Private Sector Networks:** Further research and incentives can empower community-based private sector networks to support their communities more effectively during disasters, contributing to global resilience and preparedness.

Related News: Parametric Insurance

- Nagaland became the **first Indian state** to adopt the **Disaster Risk Transfer Parametric Insurance Solution (DRTPS)** after signing a MoU with SBI General Insurance.
- **About Parametric Insurance**
 - It is a **type of insurance** that covers **probability/likelihood of a loss-causing event** happening (E.g. **earthquake**) instead of compensating for actual loss incurred from event.
 - ✓ It is an agreement that **offers a pre-specified payment** upon occurrence of a covered event meeting or exceeding a pre-defined intensity threshold, as **measured by an objective value/parameter** (hence name 'parametric insurance').
 - **Covered events:** Could be earthquakes, tropical cyclones, or floods where parameter or index is magnitude, wind speed or water depth respectively.
- **Difference between Traditional insurance and Parametric insurance**
 - **Traditional insurance:** It is best used to protect owned physical property.
 - ✓ After an event, **payments are based on actual loss sustained**, subject to terms and conditions of policy.
 - **Parametric insurance:** Payment is **tied to loss-causing event occurring**, and not the actual loss sustained, resulting in scope of coverage much broader.
 - ✓ It **can be used to increase the amount of coverage** available to certain natural perils (i.e., named windstorm) that are of primary concern to the insured.
- **Advantages of parametric Insurance**
 - **Speed of payout:** Speedy payouts prevent policyholders from having to tap savings or credit to pay their losses
 - **Sense of certainty:** The customer knows the precise amount to be received.
 - **Transparency:** When trigger data is equally available to both the insurer and the policyholder, it reduces the perception of unfairness.

5.2. RENEWABLE ENERGY (RE) IN INDIA

Why in the News?

According to Ministry of New and Renewable Energy, India's renewable energy capacity **grew by 165% in 10 years**, rising from 76.38 Gigawatts (GW) in 2014 to **203.1 GW** in 2024.

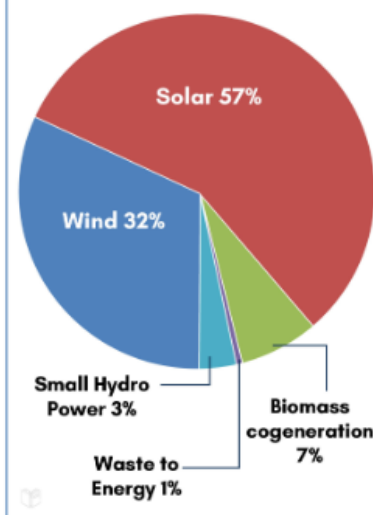
What is Renewable energy (RE)?

- It is energy derived from natural sources that are **replenished at a higher rate than they are consumed**. Renewable energy sources are plentiful and all around us.
- **For Example:** Solar Energy, Wind Energy, Geothermal Energy, Hydro Power, Ocean Energy, Bio Energy.

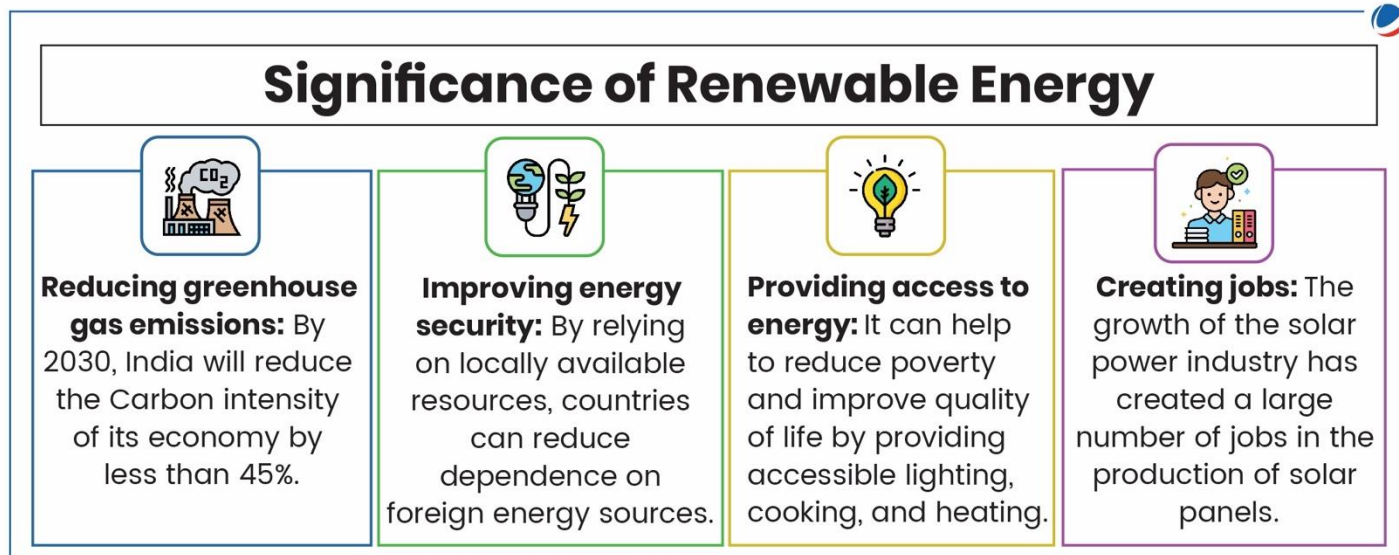
Current Status of RE in India

- The share of **RE** in the total installed generation capacity in the country stands at **43.12%**.
- India ranks **fourth** globally in renewable energy capacity.
 - **4th in Wind Power (46.65 GW) capacity** and **5th in solar photovoltaic power (85.47 GW)**.

India Renewable Energy Mix (May 2024)



- First time crossed **200 GW** capacity from non-fossil fuel sources.
 - It includes Solar power: **85.47 GW**, Large hydro power: **46.93 GW**, Wind power: **46.66 GW**, Biopower: **10.95 GW**, Small hydropower: **5.00 GW**, Waste to Energy: **0.60 GW**.
- **RE targets in India**
 - India aims reaching a non-fossil fuel energy capacity of **500 GW** by 2030.
 - Fulfilling **at least half** of its energy requirements via RE by **2030**.



Overall Challenges faced by RE Sector in India

- **High cost:** The material and natural resource (primarily land) costs to **generate one unit of electricity** are substantially higher for RE compared to the generation of **one unit** of electricity from fossil fuels.
 - The **highly diffused nature of RE** requires elaborate installations such as solar panels and wind turbines.
- **Land acquisition:** For e.g., Identification of land with RE potential, its conversion (if needed), clearance from land ceiling Act, decision on land lease rent, clearance from revenue department, and other such clearances take time.
- **Poor DISCOMS performance:** Since most DISCOMS are bound by **Power Purchase Agreement (PPA)** for thermal power, their capacity to procure solar based power is reduced, thus affecting the overall **Renewable purchase obligations (RPO)** targets.
 - **RPOs** are mechanisms designed to compel power procurers in every state to annually purchase a certain minimum amount of renewable energy.
- **Storage Concern:** Due to **Intermittency** (Renewable sources are not constant, they fluctuate based on weather conditions) and **grid balancing challenge** (sudden surges or drops in renewable energy generation can strain the grid).
- **Environmental:** For e.g., birds and bats can have collisions with wind turbines, especially during migration seasons. Also, large amount of water is needed for hydrogen production.

Challenges in different sub-sectors of RE

Solar	<ul style="list-style-type: none"> • Impact of Heat Wave: According to study, every 1-degree rise in temperature results in a 0.5% drop in the voltage due to solar panel. • Dependency: China dominates the PV module supply chain with a more than 80 % share.
Wind	<ul style="list-style-type: none"> • Skill: Requirement of higher level of technical qualifications and skills to build turbines and construct and maintain wind farms. • Inadequate Transmission Infrastructure: Longer Extra high voltage (EHV) transmission lines are required, which raises construction costs and increases operational losses.
Hydro	<ul style="list-style-type: none"> • Decline in hydro power generation: Due to lower rainfall in the southern region. Also, natural disasters impacting key power stations in the northern and eastern regions. • Socio-Environment: Displacing people, disrupting river ecology, large scale deforestation, loss of aquatic and terrestrial biodiversity, negatively alter food systems etc.

Biomass	<ul style="list-style-type: none"> • Inadequate feedstock supply: Lack of long-term contract with a feedstock supplier. • Limited platforms for biomass trading: At present, biomass trading in the country is fragmented and exists only in a handful of states.
Waste-to-Energy (WTE)	<ul style="list-style-type: none"> • Technological challenge: High percentage of wet solid waste than dry solid waste making it difficult for power generation. • Absence of regulations: particularly the Environmental Impact Assessment (EIA) requirement for WTE plants.

Key Initiatives taken to promote Renewable Energy in India

- **FDI:** Up to 100% FDI is allowed under the automatic route for renewable energy generation.
- **PM Surya Ghar: Muft Bijli Yojana:** Aimed to install rooftop solar plants in one crore households with a total financial outlay of ₹75,021 crore and to be implemented until FY27.
- **Green Energy Corridor (GEC) projects:** Initiated to facilitate renewable power evacuation and reshaping of the grid for future requirements.
- **Solar Parks Scheme:** To provide solar power developers with a **plug and play model**, by facilitating necessary infrastructure along with all statutory clearances.
- **National Green Hydrogen Mission, 2023:** The mission targets to achieve about **5 million metric tonnes (MMT)** of annual Green Hydrogen production capacity by **2030**.

Way forward

- **Increase Energy Storage Capacity:** Energy storage system (e.g. pump-storage hydroelectricity, battery storage etc.) can be used for storing energy available from RE sources to be used at other times of the day.
 - This can bring down the **variability of generation in RE sources**, improving **grid stability**, enabling energy/peak shifting etc.
- **Centre-State Coordination:** The central government needs to work with the state governments to identify exclusive land (for e.g, **RE zones**). Similarly, States need to ensure the '**must run**' status for renewable power feeding into grid is being implemented in true spirit.
 - A '**must run**' status means that the concerned power plant has to supply electricity to the grid under all condition.
- **Financing Innovations:** Streamlining the contracting process (e.g., standardization of contracts), and making available relevant information, expanding the use of **green bonds** etc.
- **Upgrade grid technology:** System operators at all levels (i.e. state, regional and national) should have visibility of the **grid status in neighbouring balancing areas** and also the ability to easily coordinate with them,
 - Centralized **RE forecasting mechanisms** need to be integrated with system operations.
- **Optimise land use:** Promoting the use of wasteland, marginal land, and rooftops for solar projects can reduce competition with agricultural, forest land.



5.3. SEA LEVEL RISE

Why in the News?

'Sea level rise scenarios and inundation maps for selected Indian coastal cities' titled report was published by a Bengaluru-based think tank, the **Centre for Study of Science, Technology and Policy (CSTEP)**.

Key Observation

- **Maximum Seal Level Rise (SLR):** Maximum SLR over the past **three decades (1991–2020)** was observed at the Mumbai station (4.44 cm), followed by Haldia (2.72 cm), Visakhapatnam (2.38 cm), etc.
- **Submergence due to rise in sea levels by 2040:** More than **10% of the land in Mumbai, Yanam, and Thoothukudi**; 5%–10% in Panaji and Chennai; and 1%–5% in Kochi, Mangaluru, Visakhapatnam, Haldia, Udupi, Paradip, and Puri would be **submerged due to rise in sea levels by 2040**.

Do you know  

- > As per the Intergovernmental Panel on Climate Change (IPCC), **global mean sea level rose by 0.20(0.15–0.25) m between 1901 and 2018**.
- > IPCC has projected a global mean SLR of **1.3 to 1.6 m by 2100** under the high-emission scenario.

Factors for Sea Level Rise (SLR)

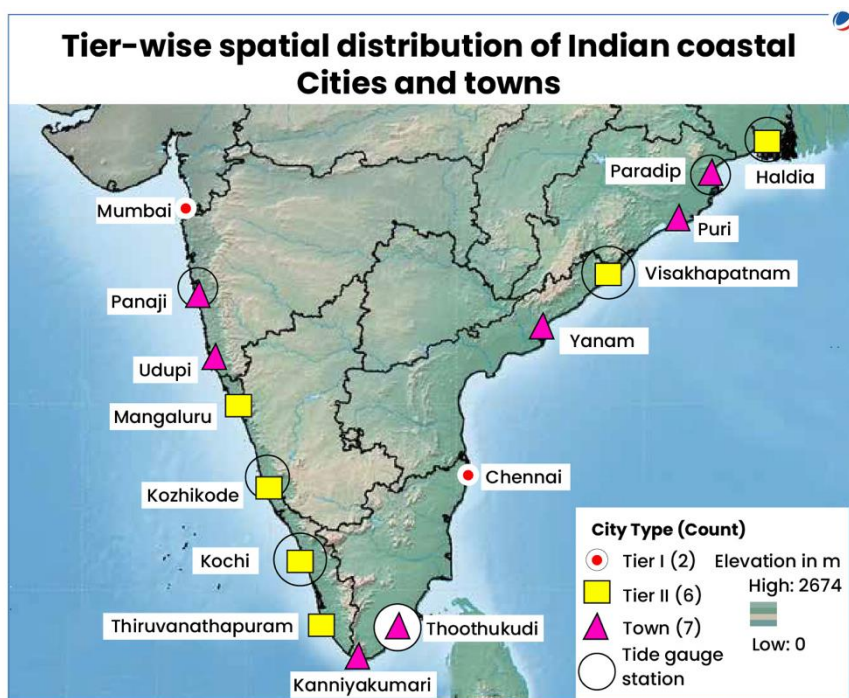
- **Ocean thermal expansion:** Oceans absorb more than 90% of the heat trapped by accumulating greenhouse gases (GHGs), leading to temperatures increase and expansion of water.
- **Ice melting:** The melting of ice from glaciers, ice caps, and ice sheets in Greenland and Antarctica is another cause of SLR.

Impacts of Sea Level Rise

- **Increased coastal erosion:** As the sea level rises, more frequent and extreme coastal floods and storm surges occur, which increase coastal erosion.
 - **For instance,** as per **National Centre for Coastal Research (NCCR)** report around **32 per cent of India's coastline underwent sea erosion between 1990 and 2018.**
- **Coastal inundation and flooding:** Rising sea levels increase the risk of frequent and severe floods and inundation in low-lying coastal regions and islands.
- **Freshwater salinization:** Freshwater sources, such as subterranean aquifers and river deltas, are susceptible to salinization due to SLR.
- **Coastal community displacement:** Low-lying coastal communities are at risk of land flooding due to SLR.
 - **For example,** as around **3.6 million people have been displaced in South Asia over the past decade.** (Internal Displacement Monitoring Centre)
- **Coastal habitat loss:** Sea level rise is especially dangerous for coastal ecosystems, such as mangroves, salt marshes, and coral reefs.
 - **For example,** Coral reefs of the Gulf of Mannar are facing threats.
- **Infrastructure vulnerability:** Higher water levels and more frequent flooding raise the risk of infrastructure disruption and damage, necessitating expensive repairs and modifications.

Steps taken by Government of India

- **Protection and Control of Coastal Erosion in India:** Central Water Commission has published guidelines in **2020** to provide the preliminary design parameters for suitable coastal protection works for different stretches of coastline.
- **Coastal Vulnerability Index (CVI):** Indian National Centre for Ocean Information Services has estimated CVI for the Indian coastline.
 - Which is a cumulative impact of **seven coastal parameters** i.e., shoreline change rate, sea-level change rate, coastal elevation, coastal slope, coastal geomorphology, significant wave height and tidal range.
- **National Disaster Response Fund (NDRF):** Under 15th Finance Commission, **recovery and reconstruction** window of NDRF for Rs. 1000 crore is earmarked for resettlement of displaced people affected by erosion.
- **Coastal Regulation Zone Notification, 2019:** Notified by Ministry of Environment, Forest and Climate Change with a view to conserve and protect coastal stretches, marine areas and to ensure livelihood security to the fisher and other local communities.
- **Mangrove Initiative for Shoreline Habitats and Tangible Incomes (MISHTI):** The plan is to comprehensively explore developing 540 sq. km of mangrove forests across 11 states and 2 union territories over the next 5 years, starting from FY 2023-24.
- **Shelterbelt plantations:** Tightly planted rows of trees on the shoreline play a major role in preventing coastal sea erosion. For example-at coastal district of **Ramanathapura**.



Adaptation strategies for Sea-level rise

- **Build flood barriers to protect infrastructure:**
 - **Ecosystem-based coastal protection:** E.g., **Oyster beds** along the coast can serve as natural breakwaters.
 - **Man Made structures:** E.g., **seawall is a structure made of concrete, masonry or sheet piles.**
- **Conduct sea-level rise and storm surge modelling:** Modelling sea-level rise and storm surge dynamics will better inform the placement and protection of critical infrastructure.
- **Floating Cities:** Development of these cities started in Maldives and South Korean which will be flood proof.
- **Integrated Coastal Zone Management:** Aim to promote security of life and livelihood of coastal communities, protect coastal ecosystems and to promote sustainable development.
- **Push for a Climate Action Plan:** Many cities and states do not have plans to address climate change, which is the primary cause of current sea level rise.

5.4. RIVER LINKING PROJECT

Why in the News?

Maharashtra government has **approved the Wainganga-Nalganga river linking project.**

More about the News

- Under the project, water from **Wainganga (Gosikhurd) river in Godavari basin will be redirected to the Nalganga (Purna Tapi) project** in Buldhana district by constructing 426.52km of link canals.
 - The **National Water Development Agency (NWDA)** presented the detailed project report in **2018.**
 - It will supplement the **National River Linking Project (NRLP).**
- Maharashtra governor also approved the **Nar-Par-Girna Valley Intra-State Link Project.**
 - Nar-Par-Girna Valley link project is an **Intra-State link proposal of Maharashtra State**
 - It aims to divert the **surplus waters from Maharashtra portion of west flowing river basins** i.e. Ambika basin, Auranga basin and Nar-Par basins **to east side i.e. Girna river of Tapi basin.**

Interlinking of Rivers

- National River Linking Project (NRLP) aimed to **link different surplus rivers of country with the deficient rivers** so that the excess water from surplus region could be diverted to deficient region.
- **Background:** The **National Perspective Plan (NPP)** was prepared by the then Ministry of Irrigation (now Ministry of Jal Shakti) in **August 1980.**
 - Under the NPP, the National Water Development Agency (NWDA) has identified **30 links (16 under Peninsular Component & 14 under Himalayan Component)** for preparation of Feasibility Reports.
- In **2021**, Union Cabinet approved the **implementation of Ken Betwa river link - first interlinking of rivers project.**

About Wainganga and Nalganga River

- **Wainganga River**
 - Source: **Mahadeo Hills (Madhya Pradesh)**
 - The river Wainganga after its **confluence with river Wardha is called Pranhita.**
 - The **river Pranhita** with its three principal branches viz. the Penganga, the Wardha and the Wainganga, is the **largest tributary of the river Godavari.**
 - Its riparian States includes Chhattisgarh, Madhya Pradesh, Maharashtra and Telangana.
- **Nalganga** are the **main left bank tributaries of river Purna.**
 - **Purna, is one of the tributaries of Tapi**, joins from the left.

Benefits of Interlinking of Rivers

- **Irrigation Facility:** As per National Perspective Plan, the Interlinking of Rivers Projects aims to benefit 35 million hectares of irrigation (25 million ha from surface waters and 10 million ha by increased use of ground waters).
- **Hydro power Generation:** Help in generation of around 34000 Megawatt of hydro power (National Perspective Plan).
- **Water Security:** Increasing water availability for drinking and industrial purposes.
 - **As per NITI Aayog's Composite Water Management Index** India is undergoing the worst water crisis in its history and nearly 600 million people are facing high to extreme water stress.

- **Inland water ways:** Once canals are built, they will also be used as waterways for navigation, reducing stress on road/rail transport.
- **Tackle droughts and floods:** As per **World Meteorological Organisation**, Economic losses in 2022 due to disasters relating to floods in **India are estimated to be over US\$ 4.2 billion**.
- **Others:** Employment generation, Growth of Service sector, safe drinking water etc.

Challenges of Interlinking of Rivers

- **State Water Dispute:** Interlinking rivers requires consensus among states, which is difficult to achieve.
 - **Example-Cauvery** water dispute between Tamil Nadu and Karnataka.
- **Environmental Impact:** Many experts believe that interlinking of rivers may lead to disturbance of very complex nature cycles that can have far-reaching adverse impact on monsoon cycles and biodiversity.
 - For example, Ken River hosts a unique medicinal fish not found in Betwa. **Diverting Ken's water to Betwa could disrupt local biodiversity**, with unknown impacts on the native fish population.
- **Loss of forests:** The proposed **Daudhan dam for Ken Betwa Link Project**, is expected to put over **10 per cent of the tiger habitat of Panna Tiger Reserve** under water.
- **Social Cost:** The Polavaram Link project, part of the interlinking of Mahanadi-Godavari-Krishna-Pennar-Cauvery-Vaigai rivers, has affected around 1 lakh families, with 80% being tribals.
- **Bilateral Challenges:** Himalayan rivers like the Ganga and Brahmaputra flow across multiple international boundaries.
- **Economic cost:** Like Wainganga-Nalganga river linking project will cost around ₹87,342.86 crore.



Judicial pronouncement in context of Interlinking of rivers

- **In Re: Networking of Rivers (2012):** SC recognised the need for inter-linking of rivers in India and directed the Central Government to constitute a Special Committee for Inter-linking of Rivers which will be responsible for carrying out the inter-linking program.

Government Steps

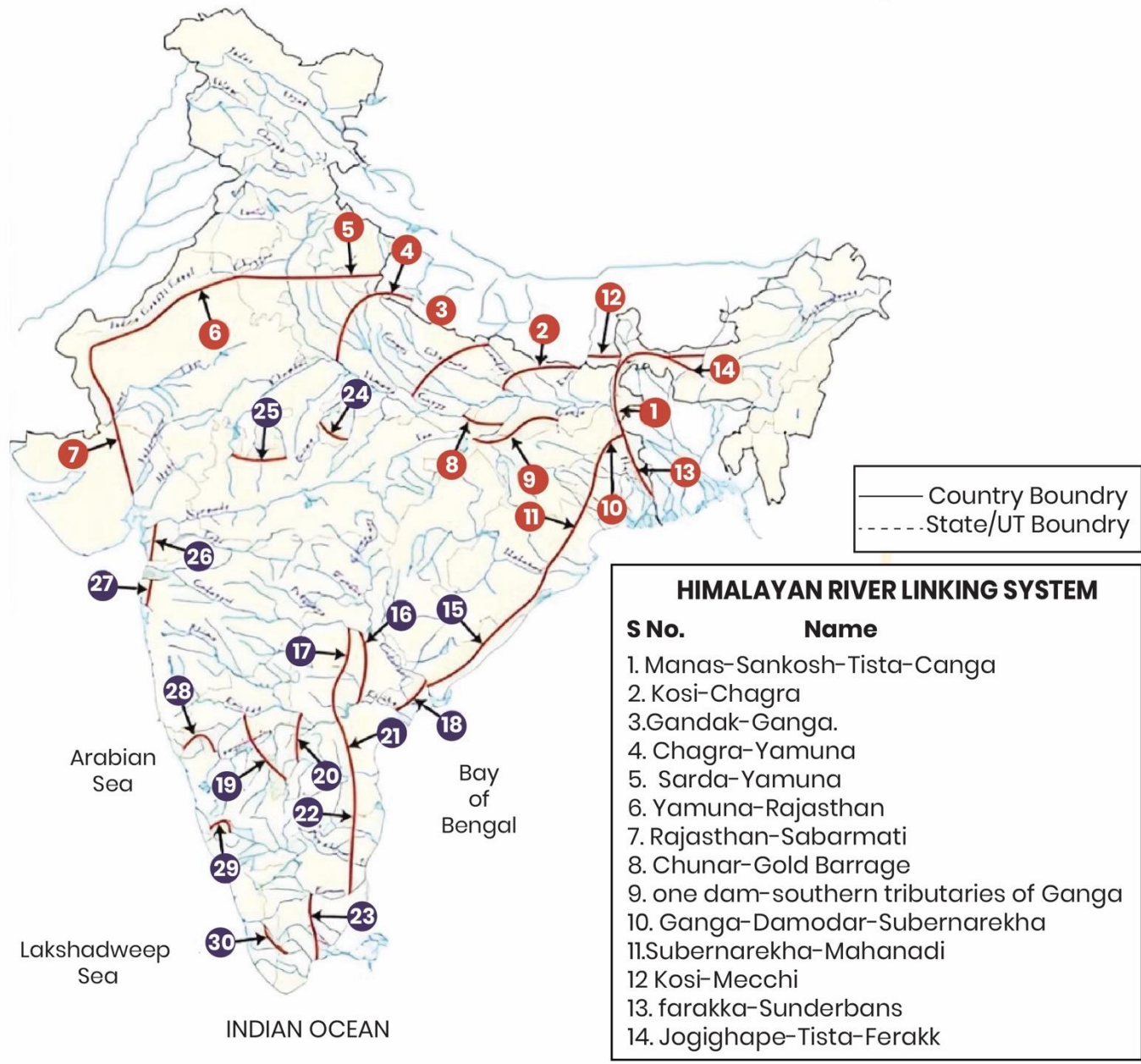
- **Task Force for Interlinking of River:** Ministry of Water Resources, River Development & Ganga Rejuvenation constituted in 2015 to look into the issues relating to Interlinking of Rivers.
- **Special Committee for Interlinking of Rivers:** Constituted in 2014, which formed 3 sub-committees
 - **Sub-Committee-I:** Sub-Committee for Comprehensive Evaluation of various Studies/Reports available on the issues of ILR.
 - **Sub-Committee-II:** Sub-Committee for System Studies for identification of most appropriate alternative plan.
 - **Sub-Committee-III:** Sub-Committee for Restructuring of NWDA
- **Group on Intra-state River Links:** In 2015, a Group on Intra-State River Links was formed to review key issues, define intra-state links, and propose funding strategies for related projects.
- **National Bank for Agriculture and Rural Development (NABARD) Funding:** NABARD provides funding for the Accelerated Area Benefited Programme component of the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) through the Long Term Irrigation Fund.

Conclusion

The ILR project promises to revolutionize water distribution, boosting agriculture, employment, and overall development. By addressing water scarcity and promoting equitable resource allocation, it paves the way for a prosperous, sustainable future for **New India**.



National River Linking Projects



PENINSULAR RIVER LINKING SYSTEM			
S No.	Name	S No.	Name
15.	Mahanadi (Manibhadra)-Godavari (Dowlaiswaram)	23.	Cauvery (Kattalai) Vaigai-Gundar
16.	Godavari Inchampalli-Krishna (Pulichintala)	24.	Ken-Betwa
17.	Godavari (Inchampall)-Krishna (Nagarjunasagar)	25.	Parbati-Kalisindh-Chambal
18.	Godavari (Polavaram)-Krishna (Vijaya)	26.	Par-Tapi Narmada
19.	Krishna (Almatti)-Pens	27.	Damanganga-Pinjal
20.	Krishna Srisailam)-Pennar	28.	Bedti-Vanda
21.	Krishna (Nagarjunasagar)-Pennar (Somasila)	29.	Netravati-Hemavati
22.	Pennar (Somasila)-Cauvery (Grand)	30.	Pamba-Achankovil-Valppar

5.5. NEWS IN SHORTS

5.5.1. STATE ACTION PLAN ON CLIMATE CHANGE (SAPCC)

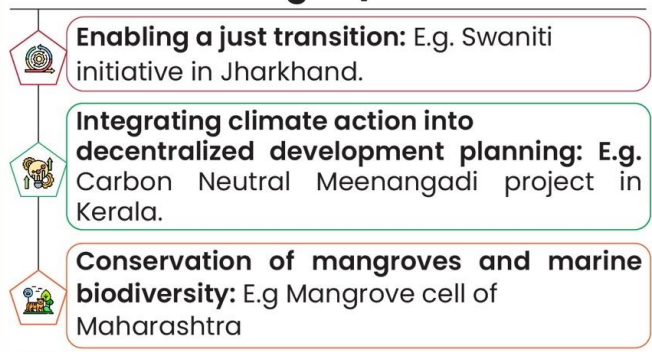
Delhi government will overhaul State Action Plan on Climate Change (SAPCC) originally **adopted in 2019**.

- Delhi's action plan needs revision **amid intensifying extreme weather** (E.g. unprecedented heat waves and record rain this year).

SAPCC

- **States/UTs** prepare respective SAPCC to **address state-specific issues related to climate change** through adaptation & mitigation measures.
 - SAPCCs are **context specific**, considering different ecological, social, and economic **conditions of each State**.
 - SAPCCs are **in line with** National Action Plan on Climate Change (**NAPCC**).
 - ✓ **NAPCC**, released in 2008, outlines a **national strategy for India's climate change** adaptation.
 - ✓ There are **eight National Missions** which form the core of NAPCC.
- **Funding:** Made under **Climate Change Action Plan scheme**.
- **Status:** **34 States / UTs** have so far prepared their SAPCC.

Significance of State level climate strategies/Plans:



Barriers to implementation

- **Lack of leadership and political will** because of SAPCC's top down approach & already existing climate change strategies/plans.
- **Lack of clear actions** (Not specific and clear enough to facilitate implementation)
- **Resource constraints as** State assumed that funding would come from central government/elsewhere.

Way forward

- **International climate finance could** potentially cover additional costs of adaptation.
- **Nominating nodal officers (For addressing institutional bottleneck)** within each key department to act as a focal point for climate change.
- Developing **detailed project reports & Regular updation** of plan.

5.5.2. GROSS ENVIRONMENT PRODUCT INDEX

Uttarakhand has **become the first Indian state to launch** a Gross Environment Product Index (GEPI).

About GEPI:

- GEPI is a **novel method to evaluate ecological development** caused by human interventions.
- **Four pillars of GEPI:** Air, soil, tree and water.
- **Formula:**
 - **GEP index** = (Air- GEP index + Water- GEP index + Soil-GEP index + Forest-GEP index)
- **Significance:**
 - Help assess the **impact of anthropological pressure** on our ecosystem and natural resources.
 - Also calculates what we **put back into the environment**.
 - **Quantifies contributions** of natural ecosystems to the economy and overall welfare.

5.5.3. WORLD BANK RELEASED “THE IMPACT OF CLIMATE CHANGE ON EDUCATION” REPORT

It highlights that climate change intensifies extreme weather, disrupts schooling and causes learning losses and dropouts.

Impact of Climate Change on Education

- **Education Remains Overlooked in Climate Policy Agenda:** In 2020, education accounted for less than 1.3% of climate assistance and was mentioned in less than one in three Nationally Determined Contribution plans.
- **School Closures:** Over 2005-2024, schools were closed in at least 75% of extreme weather events, impacting 5 million people or more.
 - Over 99 % of children across world are exposed to at least one major climate and environmental hazard, shock.
- **Rising temperature negatively impact learning outcomes:** Even an increase of 1°C in outdoor temperature on exam days can result in a substantial decline in test scores.
 - E.g. Students in hottest 10% of Brazilian municipalities, lost about 1% of learning per year due to increasing heat exposure.
- **Increasing food insecurity and economic fragility jeopardize school enrollment:** Up to 170 million people will be at risk of hunger by 2080 due to climate change, affecting student learning.
- **Disproportionate harm:** Climate-related events prevent at least 4 million girls in low- and lower-middle-income countries from completing their education.

Approach to adapt education systems for climate change

- **Education Management for Climate Resilience:** Invest in early warning systems. E.g. InaRISK mobile app enhances disaster knowledge for students and staff in Indonesia.
- **School Infrastructure for Climate Resilience:** Strengthening resilience of existing buildings. E.g. Rwanda’s Project equipping school sites with Retaining walls to mitigate flood- and rainstorm-related landslides.
 - Management of classroom temperatures. E.g. Green Economy Strategy and Implementation Plan (Kenya) promoting bioclimatic design, enhancing student comfort during high temperature.
- **Ensuring Learning Continuity in case of climate shocks:** Keep schools open (as much as possible), strengthen remote learning mechanisms.
 - E.g. Back-to-school campaign (Ghana) resulting in nearly 100% re-enrollment after COVID-19.

5.5.4. CLIMATE FINANCE ACTION FUND (CFAF)

Azerbaijan launches Climate Finance Action Fund in Package of Initiatives for UN Climate Change Conference COP29.

About CFAF

- **Headquarter: Baku, Azerbaijan.**
- Fund will support climate projects in developing countries, meeting next generation of Nationally Determined Contributions (NDCs) to keep 1.5 °C within reach, and addressing the consequences of natural disasters.
- CFAF will be capitalised with contributions from fossil fuel producing countries and companies across oil, gas and coal.
- CFAF will become operational at the conclusion of the initial fundraising round (\$1 billion), and when 10 contributing countries will commit as shareholders.

5.5.5. EU NATURE RESTORATION LAW

Recently, the EU Nature Restoration Law came into force.

About the Law

- **EU’s first continent-wide legislation for nature restoration.**
- **Aim:** Restore 20% of degraded ecosystems by 2030 and all by 2050.
- Requires Member States to prepare National Restoration Plans by 1 September 2026.

- **Prioritizes** conservation of **Natura 2000 network areas**.
 - **Natura 2000** is a network of protected areas in EU.
- **Legally binding targets:**
 - **Restore 30% of terrestrial, coastal, freshwater, drained peatlands**, and marine ecosystems by 2030.
 - **Restore 25,000 km of rivers** to free-flowing status.
 - Plant three billion additional trees by 2030.

5.5.6. AQUATIC DEOXYGENATION

Experts called for “Recognition of Aquatic Deoxygenation(AD) as a New Planetary Boundary”.

- **AD is overall decline in the oxygen content of oceanic and coastal waters** (happens when oxygen consumption is greater than oxygen replenishment).

Status of AD

- **Ocean:** About **2% of oxygen** content in ocean has been **lost since 1960s**.
 - More than 500 low-oxygen sites have been identified in **coastal waters**.
- **Other water bodies: Lakes and reservoirs** have experienced oxygen losses of 5.5 and 18.6 % respectively since 1980.

Reasons underscoring AD

- **Global Warming caused by GHG:** Rise in temperatures decreases solubility of oxygen in water.
 - **Also, warm surface layers in ocean** prevent oxygen from mixing deeper into ocean (leading to **low oxygen level in deep sea waters**)
- **Eutrophication:** Nutrient over enrichment from anthropogenic sources (e.g. agriculture) leads to **algal blooms** and increased **consumption of oxygen**.

Impact on Ecosystems

- **Occurrences of dead zones** and ocean hypoxia effect
- **Habitat compression (reducing quality and quantity of suitable habitat) for fisheries** leads to reduced biomass, species loss.
- **Affects** regulation and modulation of **Earth's climate** (due to production of GHGs by microbotic processes in such regions)
- **Changes in marine food web** due to increased risk of predation, and other factors **e.g. Ocean acidification**.

Planetary boundaries

- Planetary boundaries are a **framework to describe limits to impacts of human activities** on the Earth system.
 - Beyond these limits, environment **may not be able to self-regulate** anymore.
- There are **nine recognized planetary boundaries** such as climate change, ocean acidification, land use change, biodiversity loss etc.

5.5.7. INDIA’S THREE MORE WETLANDS ADDED TO RAMSAR SITES LIST

These wetland include

Wetland	Specifications
Nanjarayan Bird Sanctuary (Tamil Nadu)	<ul style="list-style-type: none"> • Nanjarayan Lake a large shallow wetland named after King Nanjarayan (who restored and repaired it). • It depends on heavy rain water flow from Nallar drainage. • Acts as feeding and nesting habitat for resident and migratory birds; water source for agricultural purpose.
Kazhuveli Bird Sanctuary (Tamil Nadu)	<ul style="list-style-type: none"> • Brackish shallow lake located on Coromandel Coast in North of Pondicherry. • Connected to Bay of Bengal by brackish Uppukalli creek and Yedayanthittu estuary.

	<ul style="list-style-type: none"> • Lies in Central Asian Flyway of migratory species. • Breeding ground for birds, fish; source for aquifer recharge; houses highly degraded mangrove patches containing Avicennia species
Tawa Reservoir (Madhya Pradesh)	<ul style="list-style-type: none"> • Located inside Satpura Tiger Reserve and borders Satpura National Park and Bori Wildlife Sanctuary. • Constructed at confluence of Tawa and Denwa rivers. <ul style="list-style-type: none"> ○ River Tawa (left bank tributary of Narmada River) originates from Mahadeo Hills. ○ Rivers Malanni, Sonbhadra and Nagdwari are major tributaries of reservoir.

About Wetland

- An area of land that is saturated with water.
- **Wetland must meet at least 1 of 9 criteria** like regularly supports 20,000 or more water birds, or conserving biological diversity etc.
- Now, **total Ramsar Sites in India is 85**. **Tamil Nadu** has maximum Ramsar Sites.

5.5.8. “THE STATE OF THE WORLD’S MANGROVES 2024” REPORT

Report was released on World Mangrove Day (observed annually on 26th July) by Global Mangrove Alliance.

Key Highlights of Report

- Southeast Asia has about **one-third of all mangroves globally** (Indonesia alone has 21% of world’s mangroves), followed by **West and Central Africa**.
- **Half of world’s mangrove provinces are considered threatened** (IUCN Red List of Mangrove Ecosystems).
- Mangroves in **Lakshadweep archipelago** and on **coast of Tamilnadu** are **critically endangered**.
- **Drivers of Mangrove Loss:**
 - **Climate change** (sea-level rise, increased storm intensity).
 - Expansion of **industrial shrimp aquaculture** (Andhra Pradesh, West Bengal, Gujarat).
 - **Conversion to oil palm plantations**, rice cultivation (43% loss between 2000- 2020).

To know more about Mangroves, refer to Article 5.3 Mangroves Conservation in May 2024 Monthly Current Affairs Magazine

5.5.9. METHANOTROPHS

Agharkar Research Institute has described India’s first cultures of indigenous methanotrophs named *Methylocucumis oryzae*.

- Name **‘methane eating cucumbers’** has been given to this novel genus.

About Methanotrophs (Methane-utilizing bacteria)

- These bacteria **oxidize methane** and build up their biomass.
- **Habitat:** Wetlands, rice fields, ponds and other water bodies
- **Biofiltering:** These bacteria can **oxidize methane produced** in anaerobic environments.
 - When oxygen is present in soils, **atmospheric methane** is also oxidized.
 - These bacterias are **natural methane mitigating agents**.
- **Significance:** Tackling Global Warming by reducing methane concentration in soil & atmosphere.

5.5.10. CEROPEGIA SHIVRAYIANA

A new flowering plant from *Ceropegia* genus called *Ceropegia Shivrayiana* has been discovered in Vishalgad area of Kolhapur.

- Plant has been **named after Chhatrapati Shivaji Maharaj**.

About *Ceropegia Shivrayiana*

- Rare plant **endemic to India** and has unique, tubular flowers that attract moths.
- **Habitat:** Rocky places & can survive in soil with few nutrients.
- **Family:** Asclepiadaceae family, which includes many medicinal plants.
- **Similarity:** Species is similar to *Ceropegia lawii* Hooker f., but differs in **having a climbing habit**, hairy peduncles etc.
- **Threat:** Habitat loss

5.5.11. NEELAKURINJI

It has been included on the **IUCN (International Union for Conservation of Nature) official Red List of threatened species** under the **Vulnerable category**.

Neelakurinji (*Strobilanthes kunthiana*)

- **About:** Shrub known for massive blooming every 12 years. **Semelparous, i.e.**, single reproductive episode before death.
- **Location:** Shola grasslands of Western Ghats - the Nilgiri hills, Palani hills and the Eravikulam hills of Munnar, also Shevaroy hills in the Eastern Ghats.
 - The name **Nilgiris (blue mountains)** was derived from the colors of these flowers.
- **Major Threats:** Tea and softwood plantations, urbanization, invasion of exotic species like eucalyptus, black wattle, etc.

5.5.12. ASIAN DISASTER PREPAREDNESS CENTRE (ADPC)

India has taken over the Chair of ADPC from **People Republic of China for the year 2024-25**.

About ADPC

- Autonomous International Organization for **cooperation in and implementation of disaster risk reduction and building climate resilience** in Asia and the Pacific region.
- **India and eight neighbouring countries** are the founding members of ADPC.
- It was **established in 1986** as a regional disaster preparedness center (DMC) in **Bangkok, Thailand**.

5.5.13. INTEGRATED FIRE MANAGEMENT (IFM) VOLUNTARY GUIDELINES UPDATES

After 2 decades, FAO updated its IFM voluntary **guidelines for managing wildfire risks**.

- The new guidelines are prepared by **Global Fire Management Hub (GFMH)** which was launched by **FAO and UNEP in 2023**.

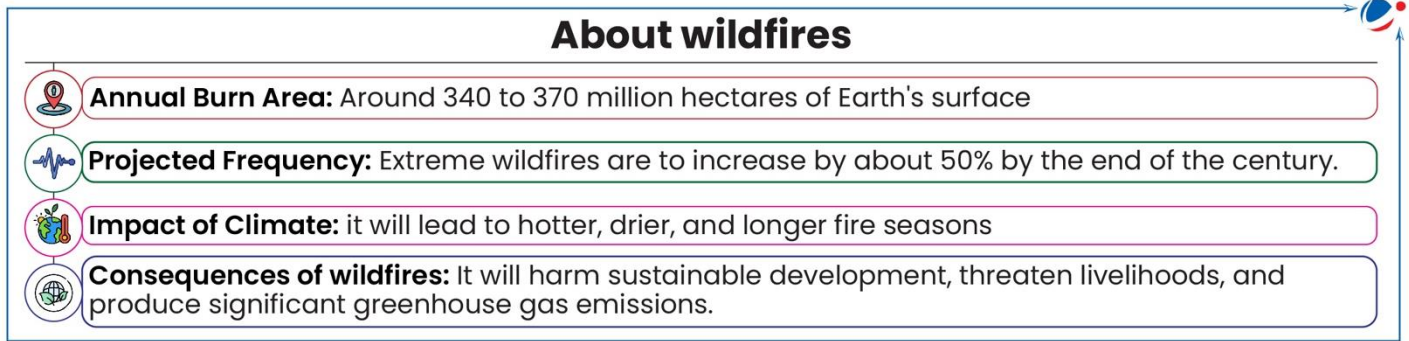
Key Principles of IFM

- **Economic:** Maximize benefits and minimize wildfire losses by implementing an efficient **IFM program**.
- **Environmental:** Consider **interactions between climate change, vegetation, and fire regimes** in fire planning and management.
- **Equity:** Consider the impacts of fire from all **stakeholder perspectives**, including gender, as wildfires can affect them differently.
- **Human health:** Use **early detection and warning systems** to reduce health impacts and adapt fire danger ratings with reliable weather forecasts.

Key Strategic Action of IFM

- **Integrated Fire Management:** Take action **before, during, and after a fire** while avoiding the introduction of invasive species through fire suppression and equipment.
- **Planned fire:** It is a component of wildfire prevention and involves allowing some fires to burn within defined parameters in fire-dependent ecosystems.
- **Fire Awareness Programmes:** Develop programs that respect cultural and social norms, including the use of fire for agriculture, forestry, and traditional purposes.

- **Knowledge transfer:** Collaborate with scientists, Indigenous Peoples, and local experts to enhance policies, regulations, and practices.



5.5.14. SOP FOR GREEN TUG TRANSITION PROGRAM (GTTP) LAUNCHED

Union Minister of Port Shipping and Waterways launched the SOP for GTTP **to drive the transition from conventional fuel-based harbour tugs to greener, more sustainable alternatives** towards Green shipping.

- A **tug** is a particular **class of boat which helps mega-ships enter or leave a port.**

About GTTP

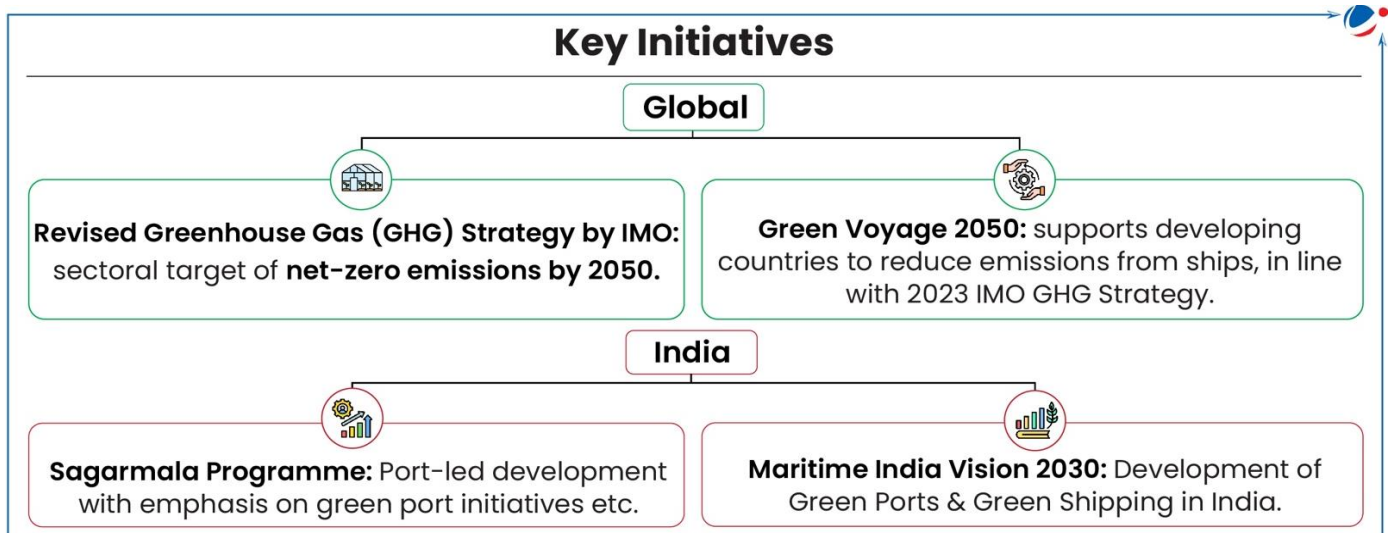
- GTTP, **announced in 2023**, is a key initiative under the **‘Panch Karma Sankalp’** to phase out conventional fuel-based harbour tugs **operating in Indian Major Ports** and replace them with green tugs.
 - **‘Panch Karma Sankalp’** includes 5 major announcements including 30% financial support for the promotion of Green Shipping, Single Window Portal to facilitate and monitor river and sea cruises, etc.

Need of Green Shipping

- Shipping sector accounts for **nearly 3% of world's CO₂ emissions.**
- **For India, GHG emissions from maritime** (excluding military operations) contribute **1% of overall transport sector GHG emissions.**

Challenges in Decarbonization of Shipping

- **High Dependency on fossil Fuels:** About 99% of energy demand from the international shipping sector is met by fossil fuels.
- **Transition cost:** e.g., For use of LNG fuel, it requires extensive retrofits to existing infrastructure as it require storage of fuel at cryogenic temperatures.
- **Others:** Inadequate port facilities resulting in sub-optimal route planning and inefficient fuel consumption, difficulty in enforcing regulations in international waters, etc.



5.5.15. POLAR COUPLED ANALYSIS AND PREDICTION FOR SERVICES (PCAPS)

World Meteorological Organization has launched the **PCAPS project** to improve **weather forecasting in Arctic and Antarctic**.

About PCAPS

- **Objective:** To increase and improve weather, water, ice, and **climate information** about the **Arctic and Antarctic**.
- It will help **develop observation systems** and **Earth system models** and advocate for improved forecasting services.
- PCAPS is part of WMO's **World Weather Research Programme (WWRP)**.

WMO's WWRP

- **Key Objectives:**
 - **Advance research of the earth system** through the science-for-services value cycle approach
 - **Improve the warning process** to account for the evolving nature of extreme weather impacts.

5.5.16. ATMOSPHERIC RIVERS

Scientists warn that **intensification and increased frequency of atmospheric rivers** due to global warming is worsening extreme rainfall events and weather patterns.

Atmospheric rivers (AR)

- AR, also called as **'flying rivers'**, are relatively **long, narrow regions** in the atmosphere that **transport most of the water vapour** outside of tropics.
 - An average AR is about **2,000 km long, 500 km wide** and nearly **3 km deep**.
- ARs are a part of larger system of **extratropical cyclones** that transport heat and moisture **from tropics toward the poles**.
 - ARs are typically located within **low-level jet**, an area of strong winds in lower atmosphere.
- They are **largest transport mechanisms of freshwater** on Earth, responsible for **90% of moisture transfer** from tropics to poles.
- While many ARs are weak systems, some **larger and strong ARs** can create **extreme rainfall and floods**, causing mudslides and catastrophic damage.

Climate Change and Atmospheric Rivers

- With temperature increase, **intensity of rain events rises** because of increase in atmosphere's moisture retention capacity.
- By 2100, ARs are predicted to become **more intense** globally and will be much **broader and longer**.
- Intensified ARs can produce **drought like conditions** by removing rainfall from rainfall-dependent regions.

Impact of ARs on India

- **Seven of India's 10 most severe floods** in monsoon seasons between **1985 and 2020** were **associated with ARs**.
- **Increase in extent of fog and haze** in Indo-Gangetic plains (IGP) has been linked to rising pollution and **water vapour** (due to intrusion of ARs).
- **Declining snow albedo** in Hindukush-Karakoram-Himalayan Mountain Range as increased rainfall speeds up snow melting.

5.5.17. INDIAN OCEAN STRUCTURES NAMED ASHOK, CHANDRAGUPT AND KALPATARU

Names of **Ashok Seamount, Chandragupt Ridge and Kalpataru Ridge** in the Indian Ocean have been approved by **IHO and UNESCO's IOC**.

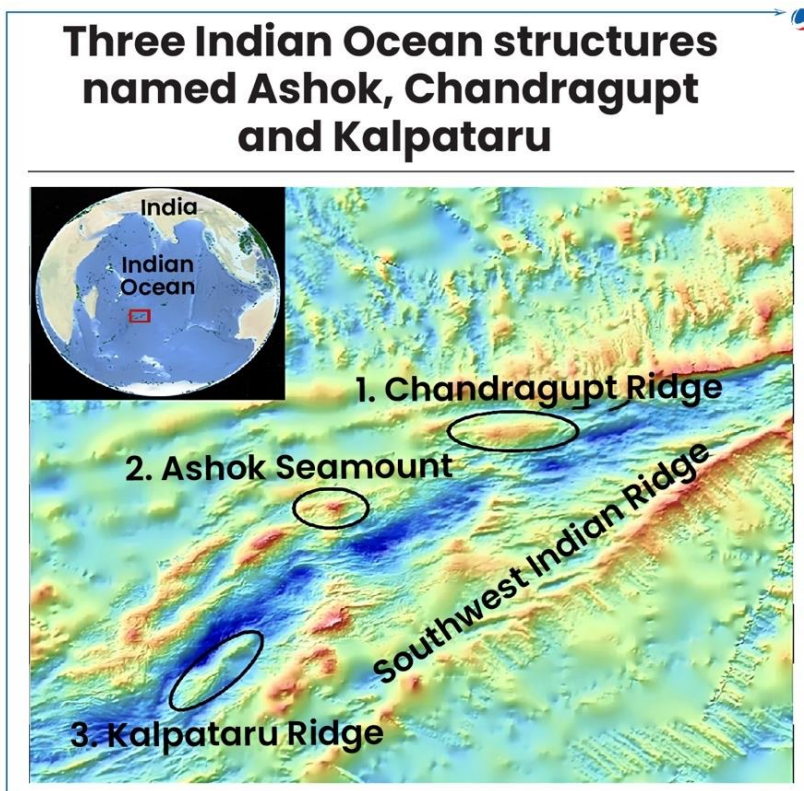
- These structures are **located along Southwest Indian Ridge**.
- They were discovered by **National Centre for Polar and Ocean Research**.

Naming of Undersea Feature

- **Outside Territorial Sea:**
 - **Individuals and agencies can propose** names for unnamed features, following **IHO's 2013 guidelines "Standardization of Undersea Feature Name"**.
 - Before naming of a feature, its **character, extent, and position** must be identified.
 - Proposals are **reviewed by IHO Sub-Committee on Undersea Feature Names (SCUFN)**.
- **Within Territorial Sea:** **National authorities** naming features in their territorial sea should adhere to the same **2013 IHO guidelines**.

About IHO and IOC

- **International Hydrographic Organization (IHO)**
 - Established in **1921**.
 - An **intergovernmental body** (India a member).
 - Enjoys **observer status at the UN**.
 - Recognized as competent **international authority** regarding hydrography and nautical charting.
- **Intergovernmental Oceanographic Commission (IOC)**
 - Established in **1961**.
 - Promotes **international cooperation in marine sciences**.
- **GEBCO:** General Bathymetric Chart of the Oceans (GEBCO) is an IHO & IOC UNESCO joint project to collect **bathymetric data and map the oceans**
 - **GEBCO-SCUFN** maintains and makes available a digital gazetteer of the names, generic feature types, etc.



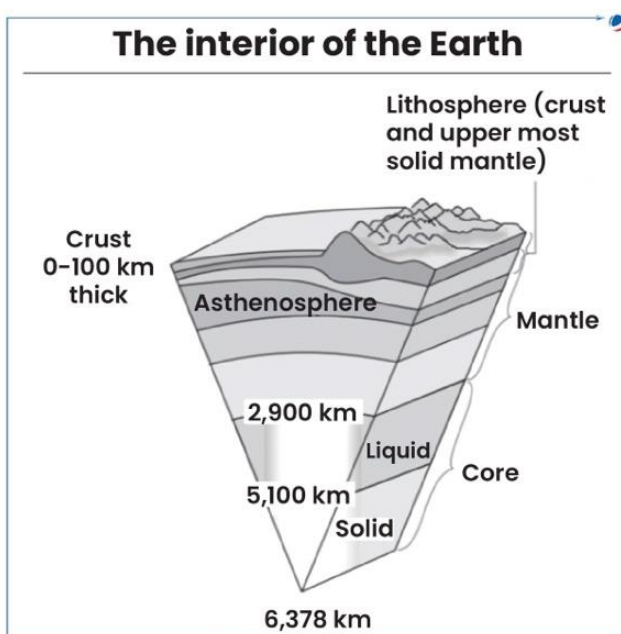
5.5.18. DEEPEST ROCK SAMPLE FROM EARTH'S MANTLE OBTAINED

Scientists on the US vessel **JOIDES Resolution** have drilled around **1.2 Kms meters below the Atlantis Massif**, surpassing the previous drilling depth of 201 meters.



- Mantle **consisting of silicate rock** makes up **over 80% of Earth's volume** is the mid layer of the earth (Refer infographic).
- Mantle rocks are **usually inaccessible, except in areas of seafloor spreading**, where Earth's tectonic plates slowly move apart. For example, the **Atlantis Massif**.
 - **Atlantis Massif** is an **underwater mountain** near the **Mid-Atlantic Ridge**.

Key highlights

- **Programme:** Drilling was done **under International Ocean Discovery Program** (India is a funding partner).
- **Location:** The drilling was done on the **southern side of the Atlantis Massif**, near the **Lost City Hydrothermal Field**.



- **Sample recovered:** The new rock sample contains over 70% rock.
- **Significance:**
 - Samples helps us understand
 - upper mantle's composition
 - chemical reactions between these rock and seawater over a range of temperatures
 - These processes might have played a role in the origin of life on Earth billions of years ago.
 - Also, previous drilling was not deep enough to look for organisms such as heat-loving bacteria that might dwell farther down.

 <p>SMART QUIZ</p>	<p>You can scan this QR code to practice the Smart Quiz of Environment at our open test online platform for testing your understanding and recalling of the concepts.</p>	
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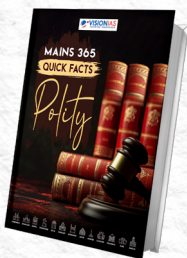


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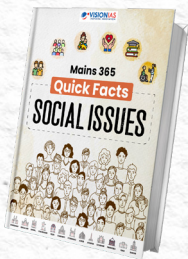
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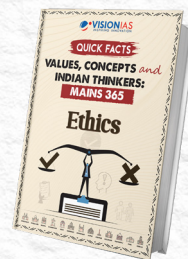
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RANCHI

6. SOCIAL ISSUES

6.1. SAFETY OF HEALTHCARE PROFESSIONAL

Why in the news?

Recently, first meeting of **National Task Force (NTF)** to address Medical Professionals' Safety, constituted by the Supreme Court, **was held**.

More on the news

- The NTF was constituted following the murder of postgraduate doctor at RG Kar Medical College Hospital (Kolkata).
- NTF mandated to **formulate effective recommendations to remedy the issues of safety, working conditions** and well-being of medical professionals and other related matters.
- **Four thematic sub-groups were formed** under the NTF that will look into:
 - **strengthening of infrastructure in medical institutions,**
 - **strengthening of security systems,**
 - **revamping of working conditions, and**
 - **the legal framework across the states.**

About Healthcare Professionals

- Healthcare Professional includes a **scientist, therapist or other professional** who studies, advises, researches, supervises or **provides preventive, curative, rehabilitative,** therapeutic or promotional health services (As per NCAHP Act 2021).
- **Health and law and order are State subject.**
 - Therefore, it is **primary responsibility of State government** or Union Territory administration to take note of events and eventualities and prevent violence.
 - **Private sector also provides** majority of **secondary, tertiary, and quaternary care institutions** with a major concentration in metros, tier-I, and tier-II cities.
- **According to the WHO:**
 - Health workers are at high risk of violence all over the world.
 - ✓ **Between 8% and 38% of health workers suffer physical violence** while other face verbal aggression.
 - **Most violence is perpetrated by patients and visitors.**
 - ✓ Also, in disaster and conflict situations, health workers may become the targets of collective or political violence.

Other Initiatives taken to ensure Safety of Healthcare Professional

India:

- **Centre**
 - **Epidemic Diseases (Amendment) Act, 2020:** It provides that **acts of violence against healthcare personnel** during an Epidemic situation are considered **cognisable and non-bailable offences**.
 - **Prevention of Violence Against Healthcare Professionals and Clinical Establishments Bill, 2022.**
 - **Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act 2013:** It applies to hospitals and nursing homes (including private health providers).
- **State**
 - **Karnataka Medical Registration and Certain Other Law (Amendment) Act, 2024**
 - **Kerala Healthcare Service Persons and Healthcare Service Institutions (Prevention of Violence and Damage to Property) Amendment Act, 2023.**

Global:

- **Framework guidelines for addressing workplace violence in health sector by ILO and WHO.**
- **Zero-tolerance policy on Violence:** Enforced by UK's National Health Service, supported by a dedicated security team and a comprehensive reporting system.
- **Safety measures like security personnel, panic buttons, and mandatory de-escalation training** introduced in Australian hospitals.

Challenges associated with Safety of Healthcare Professional

- **Inadequate security provisions:** There is lack of security personnel in medical care units in government run hospital.
 - One-third of doctors in India feel unsafe during night shifts (survey by Indian Medical Association (IMA)).
- **Poor Infrastructure:**
 - **Lack of properly functioning CCTV cameras** to monitor entry and exit to hospital and to control access to sensitive areas.
 - **Inadequate resting spaces** for medical professionals who are posted for night-duties. For instance, One-third of available duty rooms did not have an attached bathroom (IMA survey).
 - **Either inadequate or no transportation facilities for safe commute** to hostels or places of stay for medical professionals.
 - **Lack of screening arms and weapons equipment** at the entrance of hospitals.
- **Long Working hours:** Interns, residents and senior residents are made to perform 36 hour shifts in conditions where basic needs of sanitation, nutrition, hygiene, safety, etc. are lacking.
- **Easy Access:** Unrestricted access to patients and their attenders to most of the places within hospital and doctors resting rooms.
- **Health Hazards:** Healthcare Professionals are prone to exposure to hazardous substances, viruses etc. E.g. nearly 1,600 doctors succumbed to COVID in India.
 - **Only 14 have set up state councils** and even these councils are not functioning properly.

Way ahead

- **State Responsibility:** State governments must **establish mechanisms to prevent violence against doctors**, including **imposing penalties and setting up helplines** for immediate assistance.
- **Mandatory Institutional Reporting:** If any violence occurs against a healthcare worker while on duty, the head of the institution is required to **file an institutional FIR within six hours of the incident.** (MoH&FW)
- **Infrastructural development:** It includes CCTV cameras installation at all entrance and exit point of hospitals, use of bio-metric and facial recognition to access sensitive areas, transport provision from 10 pm to 6 am, etc.
- **Employees Safety Committees** (composed of doctors, interns, residents and nurses): It should be constituted at every medical establishment to conduct **quarterly audits on institutional safety measures.**
- **Ensuring due security in medical establishments: Employees Safety Committees** (composed of doctors, interns, nurses, etc.) at every medical establishment to conduct **quarterly audits on institutional safety measures.**
 - Effective crowd managed by training of security personnel at hospitals.

WHO Recommendations

- **Develop and implement national programmes for occupational health** for health workers in line with national occupational health and safety policies.
- **Appoint responsible officers with authority** for occupational health and safety for health workers at both the national and facility levels.
- **Promote a culture of zero tolerance** to violence against health workers.
- **Establish a 'blame-free' and just working culture** through open communication and including legal and administrative protection from punitive action on reporting adverse safety events.
- **Establish policies to ensure appropriate and fair duration of deployments**, rest break and minimizing the administrative burden on health workers.

6.2. MENTAL HEALTH OF STUDENTS

Why in the News?

National Task Force for Mental Health and Wellbeing of Medical Students submitted its report in response to alarming incidents of suicides by medical students in last five years.

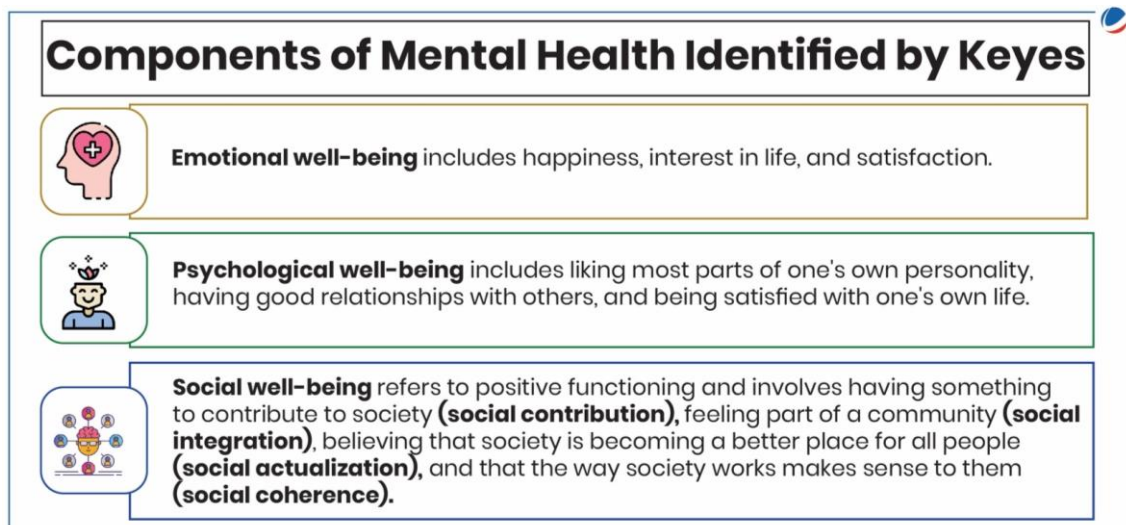
More on news:

- Report emphasizes the **high prevalence of depression** among Indian medical students.
- The Commission's online survey showed that a **whopping 27.8 per cent of undergraduate students had mental-health conditions** and 31.3 per cent of postgraduate students had suicidal thoughts.

- A study by the **National Institute of Mental Health and Neurosciences (NIMHANS)** found that **23 percent of school children** in India have mental health problems.
- **National Mental Health Survey (2015–2016)** reported a **7% prevalence of psychiatric disorders** in **13–17 years** and was nearly equal among both the genders.
- A study conducted by **schizophrenia research foundation (SCARF) in Chennai** found that over **30% of students** suffer from **anxiety and depression**.

What is mental health?

- It is a “**state of well-being** in which every **individual realizes his or her own potential**, can **cope** with the **normal stresses of life**, can work productively and fruitfully, and is able to **make a contribution** to her or his community.”
(WHO)



- Mental health is **best understood as a resource**, one that allows **individuals to recognize and understand their skills** and potential that they may use to pursue their passions and dreams within sport.

Factors contributing to mental health problems among students:

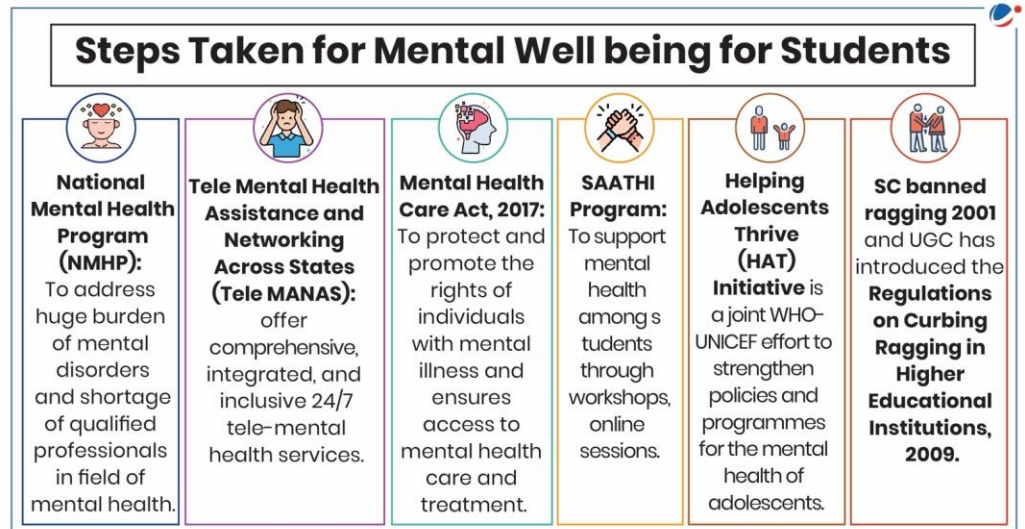
- **Immediate Triggers/Precipitating Factors:**
 - Immediate triggers for mental health crises among students include **financial loss, sudden grief, mental health deterioration**, and adverse life events such as failing exams or public humiliation **E.g. Suicides in IITs**.
 - **Influence of Social Media:** A 2018 **British study tied social media** use to decreased, disrupted, and delayed sleep, which is associated with depression, memory loss, and poor academic performance.
- **Social isolation and loneliness: dysfunctional family dynamics**, hormonal changes and issues gender identity during teenage.
 - Intense combination of **relentless academic pressure, financial sacrifice, and high parental expectations** are also key factors behind students suicide in places like Kota.
- **Predisposing Biological Factors:**
 - **Genetic predispositions**, such as alterations in **gene expression and family history of suicide**, can increase suicide risk by affecting brain function and behavior.
 - Certain personality traits like impulsivity, along with **disabilities and major physical illnesses**, may also elevate risk by contributing to feelings of isolation, stress, and depression.
- **Stigmatisation:** Because of stigma against seeking mental health care issues are not identified at the initial stage.

Issues with handling mental care in India:

- **Fragmented approach:** Insufficient Integration into Primary Healthcare results in a fragmented approach to mental healthcare
- **Geographical disparities in Infrastructure and Resources:** Rural & remote areas, often lack necessary infrastructure
- **Shortage of Mental Health Professionals:** Only **0.75 psychiatrists/lakh population** in India (**Economic Survey 2023-24**).
- **Lack of Awareness and Stigma** leads to discrimination, social isolation, and prejudice against individuals seeking help.

Way-forward

- **Implement Regular Training Programs:** Conduct regular training sessions for faculty to identify and support students at risk.
- **Counseling Services:** A 24/7 Support System should be implemented across schools and colleges. This can be done quickly by implementing **TeleMANAS initiative** using the toll-free number (14416) in all colleges.
- **Early detection and treatment:** Sensitization of front-line health workers and teachers to mental health challenges to identify at-risk individuals at an early stage.
 - **Children and adolescents** require special attention considering that around half of all mental health disorders start by the age of fourteen years.
- **Policy reforms and resource allocation:** By Allocating Adequate Resources, Prioritizing Mental Health in the Healthcare Agenda and adopt an integrated approach that addresses mental health's biological, psychological, and social determinants.
- **Digital Detox Programs:** Encouraging students to **balance digital activities with physical exercise**, hobbies, and offline social interactions can help mitigate the negative impacts of excessive digital use.
- **Practicing self-awareness:** Students can improve mental well-being by practicing self-awareness, mindfulness, and regular exercise, while also maintaining healthy sleep and eating habits to reduce anxiety and build emotional resilience.



Scan the QR code to know more about **Suicide problem in India.**

Weekly Focus #110: Suicides: An Emerging Social Problem in India



6.3. NEWS IN SHORTS

6.3.1. UNESCO RELEASED 'SPORT AND GENDER EQUALITY GAME PLAN'

Released just before the Olympic Games, it highlights **persistent gender gap in sports** and provides **guidance for gender-transformative sport policies** and programmes.

Key Observations

- **Sexual Abuse:** 21% of women athletes (and 11% of men) reported experiencing at least one form of sexual abuse as a child in sport.
- **High Dropout in Sports:** 49% of girls drop out of sports during adolescence – 6 times higher compared to boys.
 - **Factors for high attrition** include lack of women role models, concerns around safety, lack of confidence and negative body image.
- **Pay gap in professional sports:** It is evident from absence of women in the list of 50 highest paid athletes in the world.

India's Initiatives to Promote Women in Sports



Khelo India Scheme (Sports for Women component)



ASMITA (Achieving Sports Milestone by Inspiring Women through Action) Portal giving identity to women athletes.



Khelo India Dus ka Dum: Sports competition conducted on **International Women's Day 2023.**

- **Lack of women’s leadership:** In 2023, only 30% of the world’s largest sports federations were chaired by women.

Four Actions Suggested by Game Plan

- Harness the power of sports to **change attitudes** through sport media coverage and tackle root causes of gender inequalities.
- **Champion gender equality** in sport leadership, governance and decision-making.
- **Develop capacity and soft and hard infrastructure** through gender-responsive budgeting and closing funding gaps.
- Commit to ending all forms of **gender-based violence in sport**.

6.3.2. NIRF RANKING 2024

Ministry of Education released the 9th edition of National Institutional Ranking Framework (NIRF) 2024

About NIRF

- **Launched in 2015**
- It outlines a methodology to rank educational institutions across the country.
- **Five parameters:** Teaching, Learning and Resources, Research and Professional Practices, Graduation Outcomes, Outreach and Inclusivity, and Perception.
- **Implementing Agency:** National Board of Accreditation (NBA) in collaboration with the INFLIBNET Centre in Gandhinagar
- **New addition for ranking:** Open Universities, State Public Universities and Skill Universities.
- **IIT Madras** is best education institution in country for sixth time (Since 2019), followed by IISC Bangalore.

6.3.3. ADOLESCENTS IN INDIA

“Economic Case for Investment in the Well-being of Adolescents in India” Report released by Ministry of Health & family welfare.

- The report provides insights into interventions where investments on adolescents will yield high returns.

Key Highlights

- India has **largest adolescents (aged 10-19) population** (253 million) in world.
- **Adolescent mortality rate fell by >50%** & adolescent fertility rate declined by 83% (2000-2019).
- Young people **completing secondary school** has more than doubled from 22% (2005) to >50% (2020).
- **22.7% rise in fatal road accidents** for adolescents under 18 has been observed (2021- 2022).
- Suggested Interventions are expected to **boost Indian economy by 10.1% of annual GDP**.

Issues faced by Adolescents

- **Health:** Unplanned pregnancies, malnutrition, mental disorders (**depression and anxiety**).
- **Education and Employment:** Stagnant learning, Unemployment (due to emerging technologies e.g. AI).
- **Child marriage:** Although, girls getting married before 18 has declined by over half (2006-2024), **1 in 3 of world’s child bride live in India**.
- **Violence and injury:** Prevalence of road accidents, self-harm & suicide.

Interventions required

- Schools in **underserved areas, improved pedagogy, and merit based scholarships** for better learning outcomes
- Prevention of **cyber bullying, interpersonal violence** and prevention and treatment of **common mental disorders for improved adolescent health**.
- Impart **life skills and transfer payments to girls**, changes in cultural and social norms to curb child marriage
- **Graduated licensed schemes** to curb injury to adolescents.



6.3.4. MODEL FOSTER CARE GUIDELINES, 2024

Ministry of Women and Child Development released Model Foster Care Guidelines (MFCG), 2024

- These guidelines are in succession of MFCG 2016 and are based on provisions in Juvenile Justice (Care and Protection of Children) (JJ) Act, 2015 and JJ Model Rules, 2016, Adoption Regulations, 2022 and Mission Vatsalya Scheme.
- **Foster care** is the placement of a child in the domestic environment of a family, other than the child's biological family.
 - Such family is selected and approved by the **Child Welfare Committee** for providing foster care.

Key provisions in Revised Guidelines

- **Children eligible for foster care:** Children above 6 years age living in childcare institutions or community including hard-to-place children, children having special needs and children having **unfit guardians**.
- **Eligibility to Foster: Any person, irrespective of marital status,** and whether or not they have a biological son/daughter to foster a child. (**Only married couple were eligible under MFCG 2016**).
 - Allows single females to foster and adopt a child of any gender, however, **single males can only do so for male children**.
 - Spouse/couple shall have a **stable marital relationship of 2 years**.
- **Foster Adoption:** Allows the foster parent, who is already fostering the child for **minimum 2 years** (as opposed to 5 years earlier), to adopt the same child.

Child Adoption Framework in India

Central Adoption Resource Authority (CARA): **nodal body for adoption of Indian children** and regulates in-country and inter-country adoptions. It is a **statutory body** of MWCD, established under **JJ Act 2015**.

CARA primarily deals with **adoption of orphan, abandoned and surrendered children** through its associated /recognised adoption agencies.

6.3.5. BAGLESS DAYS

Union Ministry of Education announced **guidelines for implementation of bagless days for students of Classes 6 to 8**.

- Previously, **National Education Policy 2020** recommended that all students will participate in a **10-day bagless period sometime during Grades 6-8** where they **intern with local vocational experts** such as carpenters, gardeners, potters, artists, etc.

About Guidelines

- **Objectives:** To build observation-based learning capacity, develop understanding of connectedness of community and interdependence, to promote dignity of labour through hands on activity, etc.
- **Activities covered:** Visit and survey of vegetable markets, charity visits, survey and report writing on pet care, doodling, etc.

6.3.6. HABITAT RIGHTS FOR JUANGA TRIBE

District Level Committee approved Habitat Rights for Juangs of Keonjhar, a PVTG in Odisha.

- Other tribes such as **Jaungs of Jajpur, Paudi Bhuyans of Deogarh** in odisha and **Bharia PVTG in Madhya Pradesh and Kamar PVTG and Baiga PVTG in Chhattisgarh** have habitat rights.

Habitat Rights

- It was introduced under the **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006** also known as the **Forest Rights Act (FRA)**.
- **FRA defines 'habitat'** as the 'area comprising the **customary habitat and such other habitats in reserved and protected forests** of primitive tribal groups and **pre-agricultural communities**, and other forest dwelling STs'.
- **Habitat Rights** are accorded after a **sequence of consultation** with the community members, traditional leaders, women leaders, district and forest administration, etc.

- **Significance for PVTGs:** Concerned rights over their **customary territory of habitation, socio-cultural practices, intellectual knowledge, traditional knowledge, and conservation of their natural and cultural heritage.**

About PVTGs

- Government has recognised **75 PVTGs** spread across **18 states and one UT** based on the recommendations of the **Dhebar Committee (1960-61)**.
 - **Odisha houses 13 PVTGs**-highest among all the states and UT
- The **criteria** for identifying PVTG are: **Pre-agricultural level of technology, low level of literacy, Economic backwardness, and declining or stagnant population.**

Juang Tribe, Odisha

- **Native:** Hills of Keonjhar, Pallahara in Anugul and the plains of Dhenkanal, they are divided as Hill (Thaniya) and Plain (Bhagudia) Juang.
- **History:** Originally known as **Patuas** because of their traditional attire of **leaf skirts**.
- **Occupation:** Originally practitioners of **shifting cultivation** or toila chasa, with some now moving to settled agriculture.
 - Skilled in the making of **decorative combs and tobacco cases.**



SMART QUIZ

You can scan this QR code to practice the Smart Quiz of Social Issues & Social Schemes at our open test online platform for testing your understanding and recalling of the concepts.



PERSONALITY DEVELOPMENT PROGRAMME

CIVIL SERVICES EXAMINATION - 2024

Starts: **15 OCTOBER**



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interview@visionias.in

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7. SCIENCE AND TECHNOLOGY

7.1. BIOE3 POLICY (BIOTECHNOLOGY FOR ECONOMY, ENVIRONMENT AND EMPLOYMENT)

Why in the News?

Recently, the Union Cabinet has approved **BioE3 (Biotechnology for Economy, Environment and Employment) Policy** for “Fostering High-Performance Biomanufacturing”.

More on the News

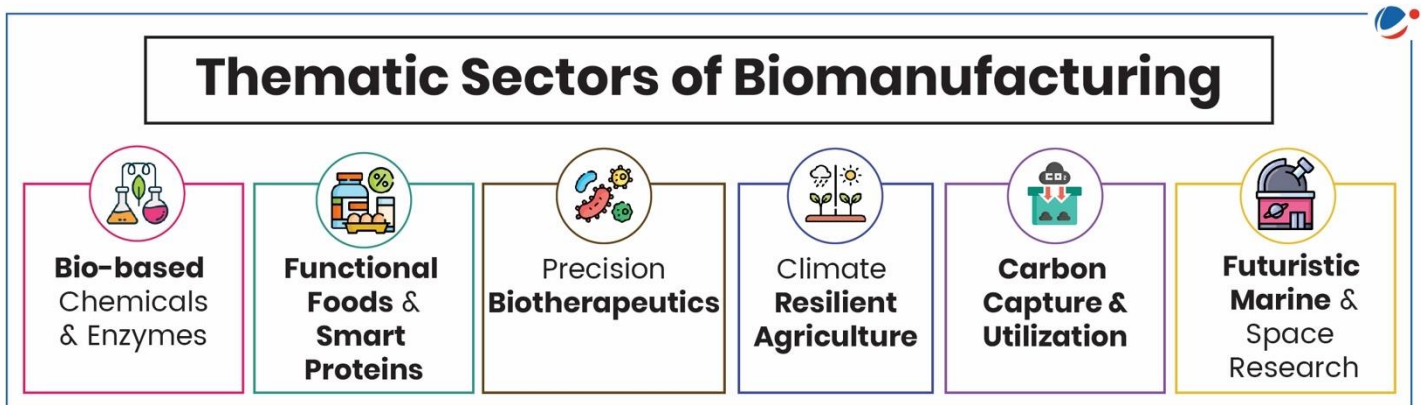
- **BioE3 Policy** will scale up efforts in **high-performance biomanufacturing** with a stated ambition of achieving a **US \$300 billion** bioeconomy by 2030.
 - Bioeconomy has grown from US \$10 billion in 2014 to over **US \$130 billion in 2024**.
- The Policy will steer India on the path of accelerated ‘**Green Growth**’ by promoting ‘**Circular Bioeconomy**’.
- According to FAO, **Bioeconomy** is “the production, use and conservation of biological resources, including related knowledge, science, technology, and innovation to provide information, products, processes and services to all economic sectors.”
 - **Examples:** Sustainable agriculture, sustainable fishing, forestry and aquaculture, food and feed manufacturing, Bio-based products (e.g., bioplastics, biodegradable clothing).

Know the term

- **Biomanufacturing** refers to the use of engineered microbial, plant, and animal (including human) cells with increasing precision and control to produce commercially important products on scale.

About BioE3 Policy (Biotechnology for Economy, Environment and Employment)

- **Aim:** To set forth a framework that ensures the adoption of **cutting-edge advanced technologies**, align innovative research aimed at revolutionizing biomanufacturing processes.
- **Implementation:** **Department of Biotechnology (DBT)**.
- **Salient Features:**
 - It includes innovation-driven support to **R&D** and entrepreneurship across **thematic sectors**.
 - Through this Policy, the government will delineate an ambitious vision to achieve technology leadership and tackle major challenges with focused mission in **six thematic sectors**:



- The research and translational activities under these verticals will be catalyzed by:
 - **Bio-Artificial Intelligence (AI) Hubs: Integrating AI** with biological data like genomics, proteomics, and medical imaging will enhance understanding of biological systems, improve disease diagnosis and treatment.
 - ✓ These hubs in **agriculture sector** can provide data analytics to improve farming practices.
 - **Biomanufacturing Hubs:** These hubs will comprise common usage of **pilot and pre-commercial manufacturing facilities** for researchers, startups and SMEs to support early-stage manufacturing.
 - **Regulations and Global Standards:** This Policy will enhance **inter-ministerial co-ordination** to ensure seamless integration of biosafety and biosecurity considerations.

- **Data Governance Framework:** Through this framework discoveries, inventions, and other knowledge arising thereof, will be **made freely available to the wider scientific community**, while allowing for protection of intellectual property.

Need for BioE3 Policy

- **Sustainability:** Need for innovation in biotransformation of **chemical processes** is critical for achieving sustainability goals.
 - This policy will play a catalytic role in sustainable bio-based production of high-value specialty **chemicals, enzymes and biopolymers**.
- **Cater Nutrition Challenge:** There is a growing demand for food as India will likely comprise of around **1.67 billion citizens** in 2050 for whom adequate and nutritional food intake would be a key concern.
 - The Policy will facilitate production of smart proteins and functional foods with low carbon footprint using **synthetic biology, and metabolic engineering tools**.
- **Growth of Cell and Gene therapy:** By 2027, the cell and gene therapy market are forecasted to be over \$22 billion (~₹1846 billion).
 - This Policy will intensify engagement of India in futuristic biotherapeutics technologies and personalized medicine such as **cell and gene therapy, mRNA therapeutics, and monoclonal antibodies**.
- **Food security:** Need to promote **soil microbiome-based research** in India including soil microbiome/genome analysis, selection process for superior microbial phenotypes etc.
 - This Policy will enable fundamental goal of food security through innovations for **climate smart agriculture** for production of improved crop varieties.
- **Climate Change Mitigation:** India aiming for **45% reduction** in emission intensity by **2030** and is taking steps towards achieving **Net Zero by 2070**.
 - The Policy will facilitate to have focus on **achieving de-carbonization** through microbial conversion of captured **CO2** into industrially relevant compounds.
- **Space-Missions:** Need for development of safe, nutritious meals for future long-duration space missions, considering the challenges in product quality & safety, shelf life, and packaging waste.
 - **Microbial biomanufacturing** has the potential to provide integrated solutions for remote or austere locations.
- **Skill Gaps:** There is a shortage of trained professionals with expertise in cutting-edge areas like synthetic biology, bioinformatics, and bioprocess engineering.
 - **Bio-hubs** under policy will act as **training centres** to ensure generation of **skilled manpower** in the evolving field of biomanufacturing.

Other Initiatives taken to boost Bio-Economy



National Mission on Bioeconomy, 2016: By the Institute of Bio-resources and Sustainable Development (IBSD) to boost rural economy by utilising bio-resources.



National BioPharma Mission, 2017: It is an industry-Academia Collaborative Mission for accelerating biopharmaceutical development in the country.



National Biotechnology Development Strategy 2015–2020: With an aim of establishing India as a world class bio manufacturing hub.



National Policy on Biofuels, 2018: Aims to promote the production of biofuels from the domestic feedstock, allowing the end-products to be brought into the value chain as green energy.

Way forward

- **Adopt circular bioeconomy:** The principles of the circular economy (reuse, repair and recycle) are a fundamental part of the bioeconomy. Through reuse, repair and recycling, the total amount of waste and its impact can be reduced.
- **Learning from the USA:** Like the \$2 billion investment made for startups in USA for transitioning into large-scale manufacturing.
- **Single window clearance:** Implement a single window clearance system for all selected Biomanufacturers.
- **STEM talent:** Retain 25% of global Science, technology, engineering, and mathematics (STEM) talent within India for sustained growth.
- **International Collaborations:** Many nations like the USA, Japan, Australia, Finland and European countries, have put forward their policies, strategies and roadmaps to set up a robust framework for biomanufacturing.

7.2. NATIONAL SPACE DAY

Why in the News?

India celebrates its Maiden National Space Day (NSD) on 23rd August, 2024 to commemorate the historic landing of Chandrayaan-3 on the Moon.

About National Space Day

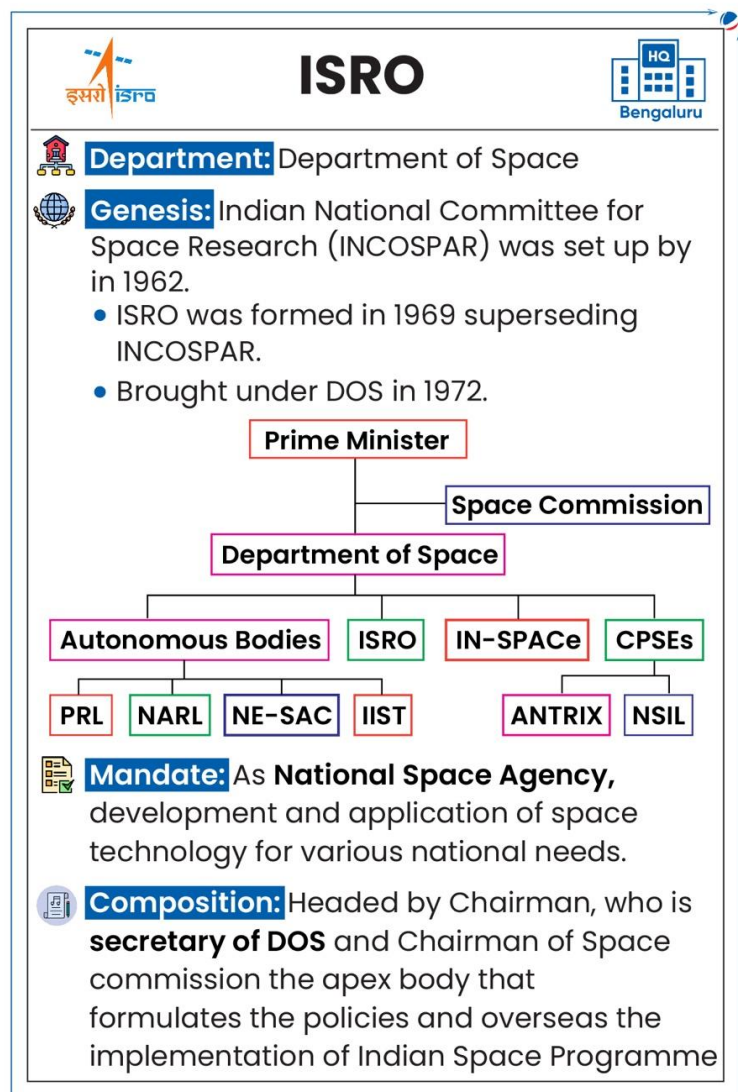
- Chandrayaan-3 mission accomplished safe and soft-landing of **Vikram Lander** on the lunar surface on August 23, 2023.
 - With this, India became the **fourth country to land** on the moon and first to land near the southern polar region of the moon.
- The soft-landing was followed by successful deployment of **Pragyan Rover**. The landing site was named as '**Shiv Shakti**' point (Statio Shiv Shakti).
- **Theme:** Touching Lives while Touching the Moon: India's Space Saga.

India's Space Saga

- **Aryabhata** was **India's first satellite**, launched in 1975, carried scientific instruments to study the Earth's atmosphere and radiation belts.
- The space agency has executed **123** spacecraft missions and **95** launch missions (as of January 2024).
- **International partnerships** signify a new chapter of **India's prominent role in the global space arena**. E.g. Artemis Accord.
- India is the **8th largest space economy** (in terms of funding) in the world.

How has ISRO achieved so many achievements despite having less resources?

- **Visionary leader:** **Vikram Sarabhai** also Known as the "**Father of Indian Space Program**" laid the foundation of ISRO.
 - He emphasised on **bottom-up approach to larger initiatives**.
- **Cost Effective Missions:** ISRO has made effort to simplify the system, miniature the complex big system, strict quality control and maximise output from a product.



- More than 30% of the sub-systems that went into Chandrayaan-1 were used in other operations.
- **Indigenous Technology Development:** ISRO has reduced imports and tried to indigenise critical components as much as possible.
 - E.g. Polar Satellite Launch Vehicle (PSLV)
- **Partnerships and Collaboration:** Aryabhata was launched by Soviet Kosmos-3M rocket.
 - Recent examples include **NASA-ISRO SAR Mission (NISAR)**, Astronauts of Gaganyaan are being trained in Russia, etc.
- **Engaging Private Players:** ISRO has promoted engagement of local industry for designing, manufacturing and testing of critical components and systems.
 - E.g. Many products of **Chandrayaan-3** were supplied by local Industry.

Why is India, being a developing country, investing in space missions?

- **National Security through Self-reliance:** E.g., **NavIC (Navigation with Indian Constellation)**, India's regional navigation system.
 - It will reduce dependence over **US's Global Positioning System (GPS)**.
 - Robust satellite system is helping in **monitoring borders, tracking military movements, and gather intelligence**.
- **Socio-economic Benefits:** India has developed its satellite capabilities for **mapping and surveying crops** and damage from **natural disasters** and **erosion**.
 - It also used satellite communication to bring **telemedicine** and **telecommunication** to remote rural areas.
- **Space Diplomacy:** E.g., South Asia Satellite Project (See related article).
- **Scientific research:** **Chandrayaan-3** performed experiments using the instruments on **Vikram and Pragyaan**.
- **Revenue Generation:** Indian space sector generated \$ 60 billion revenue in the last ten years (2014-2023) against an investment of \$ 13 billion.
- **Multiplier Effect:** For every dollar produced by the space sector, there was a multiplier effect of \$2.54 to the Indian economy.

Key Future Missions	
Mission	Detail
Chandrayaan-4	● It will bring rock and soil samples back to the Earth.
Gaganyaan Mission	● Envisages demonstration of human spaceflight capability by launching crew of 3 members to an orbit of 400 km for a 3 days mission and bring them back safely to earth.
Venus Orbiter Mission (Shukrayaan)	● An orbiter mission to study the atmosphere of Venus .
Mars Orbiter Mission 2 (Mangalyaan 2)	● India's second interplanetary mission to Mars is primarily an orbiter mission.
Lunar Polar Exploration Mission	● A concept mission in collaboration with JAXA to explore the Moon's South Pole region .
Bharatiya Antariksha Station (2028–2035)	● A planned space station that would weigh 20 tonnes and maintain an orbit approximately 400 kilometres above Earth, where astronauts could stay for 15–20 days.

Conclusion

The success of ISRO has set up an example in front other countries as well as well as for different organisations in India that team effort and planning will yield results in positive way. Indian Space Policy-2023 will facilitate further integration of Private sector, paving path for new milestone.

Related News

Space Diplomacy

- India and Nepal signed MoU to provide grant assistance for the launch of Nepal's Munal Satellite
 - This collaboration highlights the **growing role of space technology in diplomacy**.
 - The satellite will use **NewSpace India Limited's (NSIL) Polar Satellite Launch Vehicle**.

- **About Space Diplomacy**
 - It involves leveraging space science and technology to achieve foreign policy goals and strengthen national space capabilities.
 - **Significance for space diplomacy for India**
 - ✓ **Global south cooperation:** India is investing in building resources and building consensus on common space tech for space exploration.
 - ✓ **National Security:** E.g., The India-US space situational awareness agreement can provide access to the U.S. radar and sensor network to mitigate risk to India's space assets.
 - ✓ **International cooperation and Capacity building:** to utilise space resources for the expanding population.
 - E.g., **UNISpace Nanosatellite Assembly & Training by ISRO' (UNNATI)** makes an effort to educate Foreign Engineers/Scientists in space sciences.
 - ✓ **Conflict free space:** India is committed to using outer space for peaceful purposes and keeping it conflict-free.
 - **Challenges:** lack of private participation, few missions for deep space exploration, lack of multilateral space partnerships, etc.

Scan the QR code to know more about **India's space exploration.**

Weekly Focus #37: Space Exploration: Changing dynamics & pathway to the future



7.3. FIXED DOSE COMBINATION DRUGS

Why in the News?

The **Ministry of Health and Family Welfare** prohibited the manufacture, sale or distribution of 156 **fixed-dose combination (FDC)** medicines.

More about the News

- Ministry has banned FDCs in accordance with the power enshrined under **the Drugs and Cosmetics Act 1940.**
 - Earlier in 2023, Ministry banned **14 FDCs.**
- Banned FDCs **posed risk to human beings** whereas safer alternatives to the said drug are available.
 - The expert committee appointed by the central government and the **Drugs Technical Advisory Board (DTAB)**, recommended that there is no **therapeutic justification** for the **ingredients** contained in the banned FDCs.
- Banned **FDCs include** antibiotics, painkillers, and multivitamins such as Aceclofenac and Paracetamol.

What are Fixed Dose Combinations (FDCs) Drugs?

- **Definition:** FDCs refer to **products containing two or more active ingredients** also referred as cocktail drugs used for a particular indication(s) (as per **Drugs & Cosmetics Rule 1945**).
 - **Active Ingredient** is the biologically active component of a drug product (tablet, capsule, cream, injectable) that produces the intended effects.
- **As per the Drugs and Cosmetics Act 1940**, the FDCs are considered as New Drugs and the **Central Drugs Standard Control Organization (CDSCO)** issues approval.
- Mostly FDCs are in **combinations of cough, cold, and fever preparations; antimicrobials; vitamins and minerals** etc.

Rationale for Usage of FDCs	Issues associated with FDCs
<ul style="list-style-type: none"> • Enhanced efficacy: Achieves better therapeutic outcomes than using them individually. • Cost-effectiveness: More affordable than purchasing individual medications separately. • Reduced pill burden: Taking fewer pills can improve convenience and patient compliance. 	<ul style="list-style-type: none"> • Lack of individual dose flexibility: FDCs offer a fixed dose of each component, which may not be suitable for all patients. • Unapproved and Banned FDCs: The easy access to untested and unlicensed FDCs in countries like India

- They have a **pharmacokinetic** advantage.
 - **Pharmacokinetics** is defined as the study of absorption, distribution, metabolism, and excretion of drugs by the body

creates a potentially hazardous situation for public health.

- **Increased risk of Anti-microbial Resistance (AMR):** due to potential overuse.
- **Ethical concern:** India imposed ban on certain FDCs, however, there is no ban on same drugs being exported to African or SAARC countries (Lancet, 2016)

Impact of Ban of FDCs



Pharmaceutical Industry-

Revenue loss, increases compliance cost as they may have to conduct research, etc.



Public Health: It will improve as people will shift toward better alternatives, etc.



Healthcare System:

Disruption in availability of medicines, etc.

Issues in Regulation of FDCs in India

- **Reformulation of Drugs:** To **evade the drugs price control**, some companies **reformulate** the individual drugs into an FDC.
- **Compromised quality:** New FDCs after **4 years** can be produced by other manufactures by getting license from State Licensing Authorities (SLAs) without checking laxity with regard to **pharmacological studies**.
- **Approval Process:** The Parliamentary Standing Committee on Health and Family Welfare in its 59th report pointed out that some SLAs have been issuing manufacturing licenses for FDCs without prior clearance CDSCO.
- **Other:**
 - **Adverse drug reaction reporting system** is poor in India.
 - **Lack of Data** as India **does not have the exact database** of currently available FDCs in the market, their sales turnover and use pattern.

Steps taken by India for regulation of FDCs

- **Drugs & Cosmetics (Amendment) Act, 2008** provide stringent penalties for manufacturer of spurious and adulterated drugs and certain offences have also been made **cognizable** and **non-bailable**.
- **Testing capacities of Central Drugs Testing Laboratories** under **CDSCO** are being constantly strengthened to expedite testing of drug samples in the country.
- **Drugs and Cosmetics Rules 1945 amended in 2017:** Providing that applicant shall submit the result of **bioequivalence** study along with the application for grant of manufacturing License of oral dosage form of drugs.

Suggestions to improve regulation of FDCs

- **Need periodic surveys:** Drug manufacturers and wholesale and retail outlets periodic surveys can be conducted to get a measure of the existing problem of sector.
- **National Drug Authority (NDA):** Establishing this body to ensure quality of drugs by an Act of Parliament as envisaged by **Hathi committee** and as well as in Drug Policy of 1994.
- **Strong punitive action:** As suggested by **Mashelkar Committee** (for regulatory infrastructure and problem of spurious/substandard drugs) against those involved in drug-related cases of corruption will act as deterrence for others.
 - Like for manufacture or sale of spurious drug punishment should change from **life imprisonment to death penalty** as recommended by Committee.
- **Multistep approach:** To curb the irrational use of FDC in India, multistep approach involving all stakeholders, for example, consumers, physicians, regulatory authority, industry, and the academicians, is needed.

7.4. A1 AND A2 MILK

Why in the News?

Recently, the **Food Safety and Standards Authority of India (FSSAI)** withdraw its direction to **Food Business Operators (FBOs)** to not market their milk and milk products in the name of **A1** and **A2**.

More about the News

- Earlier, FSSAI stated that **standards of milk** as specified in **Food Safety and Standards (Food Product Standards and Food Additives) Regulations, 2011** do not mention/ recognize any differentiation of milk on the basis of A1 and A2 types.
 - Food Safety and Standards (Food Product Standards and Food Additives) Regulations, 2011 has been enacted under the **Food Safety and Standards Act 2006**.

Know the term

- **Mutation:** It is a change in the DNA sequence of an organism.
- Mutations can result from errors in **DNA replication** during **cell division**, exposure.

Basis of the Classification

- A1 and A2 are genetic variants of **Beta (β)-casein protein**. **Casein** (make 80 % of milk protein) is one of the two types of protein found in milk. The other one is **Whey**.
 - Differentiation in both is linked to difference in structure of **amino acid** sequence.
 - Also, A1 evolved from A2 through **natural mutation**.
- **Regular milk** contains both A1 and A2 beta-casein, while **A2 milk** is unique in that it contains only the A2 variant.
 - Studies of the **National Bureau of Animal Genetic Resources (NBAGR)** have confirmed that **indigenous cows** and **buffaloes** produce **A2 milk**.

Comparison between A1 and A2 Milk		
Parameters	A1 Milk	A2 Milk
Nutrition	<ul style="list-style-type: none"> • Higher fat content and calorie count. 	<ul style="list-style-type: none"> • Higher protein content.
Health benefits	<ul style="list-style-type: none"> • Contains histidine (essential amino acids). <ul style="list-style-type: none"> ○ Histidine is used by body to produce histamine (enables the body to regulate its reaction to inflammation and allergies). • As per studies, A1 milk cannot be digested well by some people and A2 is a better alternative for them. 	<ul style="list-style-type: none"> • Contains proline (a non-essential amino acid). <ul style="list-style-type: none"> ○ It is an essential component of collagen and important for proper functioning of joints and tendons.
Source	<ul style="list-style-type: none"> • Found predominantly in cow breeds that originated in northern Europe e.g. Holstein, Friesian, Ayrshire, and British Shorthorn. 	<ul style="list-style-type: none"> • Present in milk from breeds native to Channel Islands and southern France, including Guernsey, Jersey, Charolais, and Limousin cows.

About Proteins

- These are large molecules made of **amino acids**. It is of two types-
 - **Essential amino acids:** Cannot be made by the body. As a result, they must come from food.
 - **Nonessential amino acids:** Can be synthesized in the body
- Proteins are the main **structural constituents of the cells and tissues of the body**. Muscles and organs are largely made of proteins
- **Proteins in Key Food Items**
 - **Egg:** Ovalbumin, ovotransferrin, ovomucoid, ovomucin etc.
 - **Fish:** Myosin, tropomyosin and actomyocin
 - **Lentil:** Globulin, Albumin, etc.
 - **Soybeans:** Glycinin, Beta-conglycinin
 - **Almonds:** Amandin

7.5. DIRECTED ENERGY WEAPONS

Why in the news?

Recently, significant investments have been made by India in the field of Directed Energy Weapons.

About Directed Energy Weapons (DEWs)

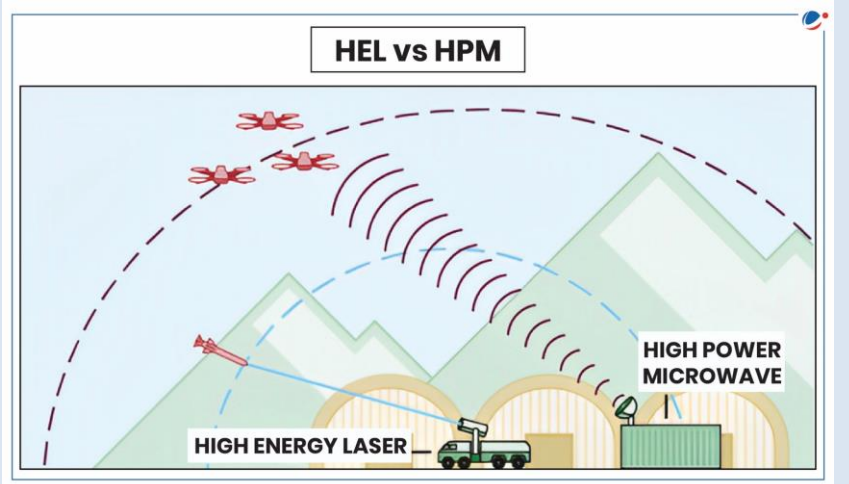
- **DEWs** are ranged weapons that **use concentrated energy** from **electromagnetic** or **particle technology**, rather than **kinetic energy**, to incapacitate, damage, disable or destroy enemy equipment, facilities, and/or personnel.
- **DEWs expand the range of electronic warfare.**
 - **Electronic warfare** includes any strategic use of the **electromagnetic spectrum** against an enemy in a military conflict.
- **How do DEWs Work?**
 - DEWs **emit electromagnetic energy at the speed of light**, using different regions of the electromagnetic spectrum to **penetrate various materials based on their wavelength**.
 - Their **power output is significantly higher than everyday devices (like household microwaves)**, enabling them to disrupt or destroy targets effectively.
- **Applications of DEWs**
 - **Military Defense:** To intercept and destroy incoming missiles, neutralize drones, and disable enemy electronics.
 - **Law Enforcement and Border Security:** Non-lethal DEWs **e.g. microwaves or lasers** can be used for crowd control and border security.
 - **Space Operations:** To protect satellites from debris and anti-satellite weapons.

Know the term

- **Electromagnetic spectrum:** The classification of electromagnetic waves (EWs) **according to frequency** is the **electromagnetic spectrum**.
- EWs include visible light waves, X-rays, gamma rays, radio waves, microwaves, ultraviolet and infrared waves.

Types of Directed Energy Weapons

- **High Energy Lasers (HEL):** Use highly concentrated light to destroy targets.
 - HELs with a power of 100 kW can engage smaller targets like Unmanned Aerial Systems (UAS), while 1 MW lasers could neutralize ballistic and hypersonic missiles.
 - **Employed for fast-moving individual targets** at a greater range
- **High Power Microwaves (HPMs):** Emit high-frequency electromagnetic waves to damage electronic systems and incapacitate personnel
 - **Employed for widespread targets** (Shorter range than HEL)
- **Millimeter waves:** Use wavelengths between 1 and 10 millimeters. Applications include non-lethal military applications like crowd control.
- **Particle Beam Weapons:** Use accelerated particles (**protons or electrons**) to inflict damage.



Advantages of DEWs

- **Cost efficiency per shot:** Compared to traditional munitions, DEWs are potentially less costly per shot than missiles.
 - E.g., **Britain's DEW 'DragonFire' laser**, which was successfully test fired recently, is reportedly able to shoot down enemy aircrafts/missiles at a per-shot cost of less than £10.
- **Rapid response time:** The speed of light in a laser beam enables near-instantaneous reach to a target, a critical factor in countering fast-moving threats.
 - It **eliminates the need for calculating intercept courses** as required for interceptor missiles,

- **Logistical efficiency:** They **eliminate the need for traditional (physical) ammunition and mechanical loading**, relying instead on a power source, which can simplify supply chains.
- **Precision:** Light and other forms of directed energy are **unaffected by gravity, wind, or Coriolis force**, allowing for **highly accurate targeting**.
- **Stealth:** Many DEWs **operate silently and invisibly**, especially those outside the visible spectrum, making them difficult to detect.
- **Countering Low-cost drones and rockets:** DEWs can target large volumes of cheap unmanned systems and munitions, which can overwhelm current air and missile defences.

Challenges of DEWs

- **Technological limitations:** DEWs are generally less effective the farther they are from the target, and atmospheric conditions and cooling requirements can limit their effectiveness.
 - **E.g., fog and storms can reduce laser beam range and quality.**
- **Battlefield use:** Decisions about how and when to use DEWs may be challenging.
 - E.g., wider beam DEWs such as high-power microwave or millimeter wave weapons, affect all assets in an area, whether friend or foe.
- **Ethical and health concerns:** Uncertainty around DEWs' long-term health effects on people (either intentionally or unintentionally exposed to directed energy) has raised ethical questions about their use.
- **Arms race:** Development of DEWs by one government can trigger an arms competition among other nations, escalating tensions.
- **Other concerns:**
 - Currently, DEWs are **comparatively large and need substantial energy** for their operation.
 - **High costs** associated with the research and development of DEWs.
 - Need for HELs to have a **clear line of sight to the target**.
 - **Reflective materials and other countermeasures** can be employed to mitigate the effectiveness of DEWs.

Steps taken by India for DEWs

- **Directionally Unrestricted Ray-Gun Array (DURGA)-II Project:** Initiated by Defence Research Development Organization (DRDO) to build 100-kilowatt lightweight DEW.
- **2kW DEW System: Developed by Bharat electronic limited** for countering new threats like drones and Unmanned Aerial Systems.
- **Laser Science and Technology Centre (LASTEC):** Laboratory of DRDO developing direct energy weapons, called **project Tri-Netra**.
- **Kilo Ampere Linear Injector (KALI):** It is a linear electron accelerator for targeting long-range missiles being developed by DRDO and the Bhabha Atomic Research Centre (BARC) .

Examples of DEWs across the globe

- **USA:** HEL with Integrated Optical-Dazzler and Surveillance (HELIOS), High Energy Laser Weapon System (HELWS), Tactical High Power Microwave Operational Responder (THOR) etc.
- **United Kingdom:** **DragonFire** laser directed energy weapon (LDEW)
- **Israel:** **'Iron Beam'**, a laser-based interception system.
- **Russia, France, Germany, China etc.** are also reportedly among countries which have programmes to develop DEWs or Laser DEWs.

Conclusion

Given the persistent threat posed by its neighbours, particularly China and its vast technological prowess, India's defence needs to be prepared to deal with the inevitable threat posed by both autonomous and hypersonic weapons, with DEWs as a potential solution.

7.6. NEWS IN SHORTS

7.6.1. ISRO LAUNCHES EARTH OBSERVATION SATELLITE EOS-08

Satellite has been launched under **SSLV-D3/EOS-08 mission** by the Small **Satellite Launch Vehicle (SSLV)-D3** from Satish Dhawan Space Centre, Sriharikota.

- Mission configuration is set to operate in circular Low **Earth Orbit** at an **altitude of 475 km** (inclination of 37.4°), with a **mission life of 1 year**.
- SR-0 DEMOSAT was also onboard which was **developed by Space Kidz India**.

Objectives of EOS-08 mission:

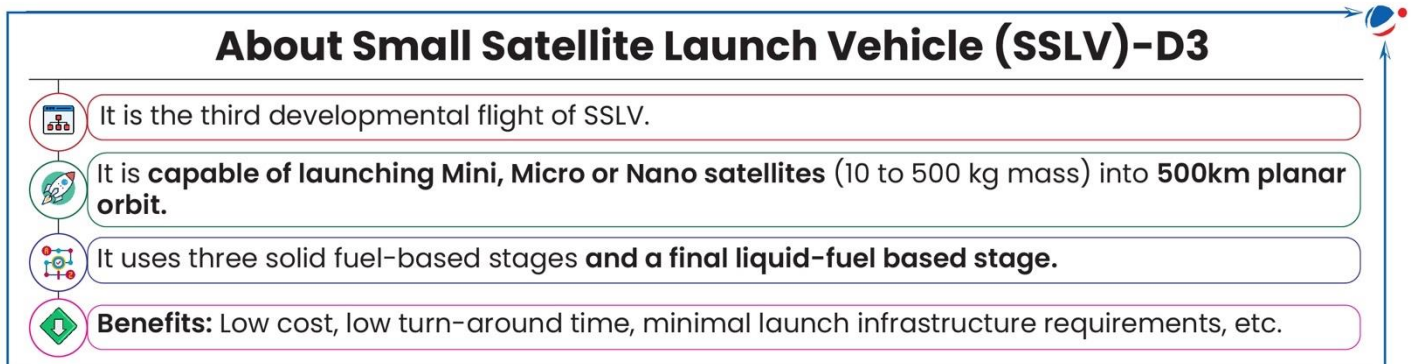
- Designing and **developing a microsatellite**,
- Creating payload instruments compatible with the **microsatellite bus**,
- **Incorporating new technologies** required for future operational satellites.

Payloads of EOS-08 Mission:

- **Electro Optical Infrared Payload (EOIR) payload:** To take images in Mid-Wave & Long Wave Infrared band for applications like Disaster Monitoring, Environmental Monitoring etc.
- **Global Navigation Satellite System- Reflectometry payload (GNSS-R) payload:** Uses **remote sensing** for measuring ocean winds, soil moisture, Himalayan cryosphere, etc,
- **SiC UV Dosimeter:** Monitor UV irradiance at Gaganyaan mission's crew module viewport, serving as a high-dose alarm sensor for astronaut safety.

About Earth observatory satellites (EOS)

- EOS or Earth remote sensing satellites are designed for Earth observation (EO) from orbit.
 - EO refers to **collecting information** about activities on Earth, both natural and artificial, including **physical, chemical, biological and human systems**.
- **Applications:** Used in Early warning systems, environmental impact monitoring etc.



7.6.2. AXIOM MISSION 4 (AX-4)

India selected **Shubhanshu Shukla and Prasanth Balakrishnan Nair** (Group Captains in the IAF) for Axiom-4 mission.

- They will **train in U.S.** and experience gained during the mission will be **beneficial for human space programme**.

Axiom Mission 4 (Ax-4)

- It is the fourth **private astronaut mission of NASA and a private US company Axiom Space**.
- It is expected to **dock with the International Space Station (ISS)** for fourteen days.
- Axiom Space has contracted **SpaceX as a launch provider**.

7.6.3. LADAKH AS MARTIAN/LUNAR ANALOGUE

Scientists identify Ladakh as potential site for Martian or Lunar analogue research station

- An analogue research station is a place that has **physical similarities to a planet or planetary body or extreme space environments**.
- Presently, there are **33 analogue research stations** with none being in Indian sub-continent.
 - These include BIOS-3 (Russia), HERA and Biosphere 2 (USA), Mars One (Netherlands) and D-MARS (Israel).

Need for Analogue sites

- **Field testing** for new technologies, robotic equipment, vehicles, power generation, infrastructure etc. which are crucial for **prolonged space missions**.
- **Study or simulate human habitats in such environment and associated behavioural effects** – such as isolation and confinement, team dynamics, menu fatigue etc.
 - Simulation tests are **essential** as these are meant to be **stand-alone units** capable of handling all contingencies.

Why is Ladakh ideal as Martian/Lunar Analogue?

- **Geomorphological similarities to an early Mars and Moon:**
 - **Dry, cold, arid desert**, with abundant rocky ground.
 - **Vast flat land devoid of vegetation, dunes**, and drainage networks.
 - Segregated **ground ice and permafrost**, and rock glaciers.
- **Geochemical similarities to Martian surface:** Volcanic rocks, saline lakes, and hydrothermal systems.
- **Exobiological similarities:** Permafrost (evidence of water in past), increased UV and cosmic radiation flux, reduced atmospheric pressure, hot springs (rich in boron) and sufficient isolation.

Ladakh as Astronomical Hub of India

Indian Astronomical Observatory (IAO): Located in Hanle, Ladakh, with an optical infrared telescope.

Astro Tourism: E.g. Hanley Dark Sky Reserve (HDSR).

Host to various Space Programmes: NASA's Spaceward Bound India Programme 2016, Field validations of ExoMars 2020 HABIT Instrument etc.

7.6.4. TECHNOLOGICAL DOPING

Recently some experts have raised concern of Technological doping.

About Technological doping:

- Technology doping is the practice of gaining a **competitive advantage using sports equipment**.
- **E.g. Speedo LZR Racer swimsuits** of 2008 Olympic (Later banned)
- **Regulation:** World Anti-Doping Agency (WADA) considers prohibiting technologies if they are “performance-enhancing” or “being against the spirit of the sport”.

7.6.5. ANTIMATTER

Recently Scientists spotted heaviest **antimatter nucleus** in a particle accelerator Relativistic Heavy Ion Collider.

- It is called **antihyper hydrogen-4** (Made up of **antiproton**, two **antineutrons** and **antihyperon**)

Antimatter

- Antimatter particles **share the same mass** as their matter counterparts, but qualities such as electric charge are **opposite**.
 - E.g. A positively charged **positron** is an antiparticle to a **negatively charged electron**.
- **Antimatter particles** corresponding to **electrons, protons, and neutrons** are called **positrons, antiprotons, and antineutrons**.
- **Matter and antimatter particles** are always produced as a pair and if come in contact annihilate **one another** (leaving **pure energy**).

7.6.6. THORIUM MOLTEN SALT NUCLEAR PLANT

World's first thorium molten salt nuclear power station will be launched in Gobi Desert by China in 2025.

Instead of Uranium, this nuclear power station uses **thorium as fuel**.

- Its reactor **does not need water** for cooling because it **utilizes liquid salt or carbon dioxide** to transfer heat and make electricity.
- Unlike the water-cooling model, this design **significantly reduces the chances of meltdowns**.

Thorium as a Fuel

- Thorium, a **naturally occurring element with radioactivity**, is found at trace levels in soil, rocks, water, plants and animals.
- Due to its physical characteristics, thorium **cannot be used directly to produce nuclear energy**. It has to be first converted to **U-233 in a nuclear reactor**.

Significance of Thorium based reactors

- **Abundant Supply** unlike Uranium. In India, **Kerala and Odisha** have rich reserves of **monazite**, which contains **about 8 – 10% thorium**.
 - Monazite is also prominent in **Andhra Pradesh, Tamil Nadu, West Bengal and Jharkhand**.
- **Chemically safe**, due to higher melting point, better thermal conductivity, better fuel performance characteristics, chemical inertness and stability.
- **Environmentally safe**, generates lesser toxic and short-lived radioactive wastes.

Role of Thorium in India's Nuclear Programme

- **Third stage of India's nuclear power program** envisages **large scale power production from thorium**.
 - First stage involves use of **natural Uranium** in Pressurised Heavy Water Reactors (PWRs), while second stage involves use of **Plutonium** in Fast Breeder Reactors.
- India has **well established the processes** for producing thorium from monazite.
 - **Advanced Heavy Water Reactor**, currently under development with BARC, would serve as a **technology demonstrator for thorium fuel cycle**.

7.6.7. PLANT GENOME EDITING TOOL 'ISDRA2TNPB'

ICAR recently developed a **miniature plant genome editing tool 'ISDRA2TNPB'**

- **'ISDra2TnpB'** is being seen as a next-generation tool for genome editing in plants that can **overcome the limitations of Cas9 and Cas12 of CRISPR**.
- **CRISPR** allows **precise genome editing** but has limitations due to the size of commonly used proteins **Cas9 and Cas12** (consisting of 1,000–1,350 amino acids).
 - The large size poses challenges for **effective delivery inside cells**, especially through viral vectors.
- **TnpB** proteins are considered the **evolutionary ancestors of Cas12 nucleases** and consist of only around **350–500 amino acids**.

About Genome editing tool ISDra2TnpB

- It is derived from bacteria called **Deinococcus radiodurans** (it can survive extreme environmental conditions).
- It belongs to a family of **transposons or jumping genes** that can move **within the genome, targeting specific DNA sequences** with the help of RNA.

Significance

- **TnpB can target unique regions in the genome that Cas9 cannot**.
- It **facilitates the creation of fusion proteins**, broadening the scope of genome engineering applications.
 - A fusion protein (chimeric protein) is created by joining two or more genes that originally coded for separate proteins.
- It was **effective on both types of flowering plants** monocots (like rice, which have one seed leaf) and dicots (like *Arabidopsis*).

Note: Kindly refer News Today document of 9th & 10th June to know more about 'CRISPR' gene editing.

7.6.8. WHO DECLARED MPOX PHEIC

WHO declared Monkeypox outbreak a **Public Health Emergency of International Concern (PHEIC)**.

- Decision came on advice from **International Health Regulations (IHR) Emergency Committee**.
- Following an **Mpox outbreak in Democratic Republic of Congo (DRC) and outside Africa**, it was declared as global PHEIC for **second time in two years**.

About Mpox

- **Viral illness** caused by **monkeypox virus**, a species of **genus Orthopoxvirus**.
- **First detected** in **humans** in **1970** in **DRC**.
- **Spreads via close contact** and tends to cause flu-like symptoms and pus-filled skin lesion.
- Occurs mostly in **central and western Africa**, and **affected primarily (but not only) gay, bisexual etc.**
- **Vaccines and therapeutics** developed for **smallpox** and approved for use in some countries **can be used for mpox** in some circumstances.

About PHEIC

- **As per IHR (2005), an outbreak qualifies as a PHEIC if it is unusual or unexpected; it has potential for international spread; and may require an immediate international action.**
 - **IHR, 2005** is a **binding international legal agreement** involving 196 countries across globe, including all Member States of WHO.
- PHEIC represents the **highest level of alert issued by WHO** under IHR.
 - Since 2009, **WHO has declared seven international public health emergencies**, including H1N1 influenza pandemic in 2009, polio outbreak in 2014, Ebola outbreak (West Africa) in 2014 & 2019, Zika epidemic in 2016, Ebola outbreak (Congo) in 2019, COVID-19 in 2020 and Mpox in 2022 & 2024.

7.6.9. DENGUE

Indigenous tetravalent dengue vaccine, DengiAll has proceeded toward its **phase-3 clinical trials**.

- Trial would be conducted with collaboration of **Indian Council of Medical Research** and **Panacea Biotec**.

Dengue (Break-Bone Fever)

- **Viral infection** that transmits with bite of an **infected female Aedes mosquitoes** (also responsible for chikungunya, Zika).
- Dengue is **found in tropical and sub-tropical climates worldwide**, mostly in urban and semi-urban areas.
- It can escalate to **severe conditions like dengue hemorrhagic fever and dengue shock syndrome** in adults.
- Currently, there is no **antiviral treatment or licensed vaccine** against dengue in India.

7.9.10. SEROSURVEY

Indian Council of Medical Research (ICMR) has been conducting serosurvey since last year to determine exposure to Mpox among India's high-risk population.

About Serosurvey

- It is the **collection and testing of blood** (or proxy specimen such as oral fluid) **from a specimen of a defined population over a specified period of time**.
- **Objective:** To **estimate prevalence of IgG antibodies against an infectious pathogen** as an indicator of exposure to a pathogen.
- **Significance:** Can be used to estimate prevalence of infection, immunity gap, key parameters for infectious disease modeling, etc.

7.6.11. HAYFLICK LIMIT

Leonard Hayflick passed away recently.

- He introduced the 'Hayflick limit' that fundamentally changed the understanding of aging.

About Hayflick limit

- It is the number of times a **cell population can divide** until it attains a cell **cycle arrest**.
- It **depends on the length of chromosomal telomeres**, which decreases in standard cells with every cell division.
 - The telomere is the **region of repetitive DNA sequences at the end of a chromosome**.
- The "Hayflick limit", is **around 125 years for humans**.
- Beyond this, no amount of diet, exercise, or genetic tweaking against diseases can extend the human lifespan.

7.6.12. BIOSURFACTANTS

Researchers highlight that biosurfactants can be produced using **green substrates from agro-industrial waste**.

Surfactants

- A **surfactant (surface-active agent)** is a substance that, when added to a liquid, reduces its **surface tension**, thereby **increasing its spreading and wetting properties**. E.g., Detergent.

About Biosurfactants

- They are **active compounds** that are produced at **microbial cell surface** or **excreted**, and **reduce surface and interfacial tension**.
- Produced by **bacteria, yeasts, and filamentous fungi**.
- **Microbial surfactants advantages over synthetic ones:**
 - **Low toxicity and high biodegradability**.
 - **Remain active at extreme pH and salinity**.

Application of Bio surfactants:

- **Environmental bioremediation:** Used to clean up oil spills, remove heavy metal contaminants, and treat wastewater.
- **Agriculture:** Used to improve soil quality, manage plant diseases, and increase the concentration of trace elements in the soil.
- **Pharmaceutical industries:** Used in antimicrobial, anti-adhesive, antiviral & anticancer pharmaceuticals



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8. CULTURE

8.1. HINDUSTAN REPUBLICAN ASSOCIATION (HRA)

Why in the News?

The Government of Uttar Pradesh inaugurated year-long celebrations on August 9 to mark **centenary of the ‘Kakori train action of the Hindustan Republican Association (HRA)**.

More on the News

- The ‘Kakori Train Action’ centenary festival will be **celebrated** to mark the **100th anniversary of the 1925 Kakori Train Action**.
- As part of the celebrations, the ‘**Kakori Shaurya Gatha Express**’ train will travel through various cities in the state to educate youths and school children about the Kakori saga.

About Kakori Train Action

- **Execution:** On August 9, 1925, revolutionaries from the HRA looted a British treasury train near Kakori, Uttar Pradesh. **No innocent passenger was harmed.**
- **Objective:** To rob the train carrying the British Indian Government treasury to fund revolutionary activities.
- **Key Figures:** Ram Prasad Bismil, Ashfaqullah Khan, and Thakur Roshan Singh, Rajendra Lahiri and Sachindra Bakshi, among others.
- **Kakori Conspiracy Case**
 - Death sentences for **Bismil, Ashfaqullah Khan, Rajendra Nath Lahiri, and Thakur Roshan Singh.**
 - Others received **long-term imprisonment including deportation to the Cellular Jail.**

About Hindustan Republican Association (HRA)

- **Genesis:** HRA was formed in **1924**, as a **radical revolutionary organization**.
- **Objective:** To establish a Federated Republic of the United States of India by an organised and armed revolution.
- **Founding members:** Ram Prasad Bismil, Ashfaqulla Khan, Sachindra Nath Bakshi, Sachindranath Sanyal, and Jogesh Chandra Chatterjee.
- **Ideologies of HRA:**
 - **Socialism:** The association envisaged that the “basic principle of the republic shall be universal suffrage and the abolition of all systems which make any kind of exploitation of man by man possible.”
 - ✓ In **1928, Bhagat Singh, Sukhdev, Shiv Verma, Chandra Shekhar Azad and Vijay Kumar Sinha** took on the task of reorganizing the HRA and included **socialism as a key goal**.
 - ✓ Thus, the HRA was renamed **the Hindustan Socialist Republican Association (HSRA)**.
 - **Armed overthrow of the imperialist government:** The manifesto categorically declared that the foreigners “have no justification to rule over India except the justification of the sword, and therefore the revolutionary party has taken to the sword”.
- **Key Publications:**
 - **The Revolutionary**, written by Ram Prasad Bismil under the pen name of Vijay Kumar, with the assistance of **Sachindra Nath Sanyal**.
 - **Philosophy of the Bomb:** It was composed by **Bhagwati Charan Vohra**. It argued that the revolutionaries didn’t use force for injustice, but to fight for national rights, even if it meant making the ultimate sacrifice.
 - ✓ It is seen as response to the condescension shown by the Indian National Congress to the revolutionary party’s attempt at blowing off the Viceregal Special train in December 1929 and the article **Cult of the Bomb by Gandhi ji**.



Factors that led to the establishment of HRA



Economic miseries after World War I



Disillusion about British promises following Rowlatt Bill and Defence of India Act



Jallianwala Bagh massacre (1919)



Sudden Suspension of Non-Cooperation Movement following Chauri Chaura incident



Bolshevik revolution exposed revolutionaries to socialist thought

Key Revolutionary Activities of HRA or HSRA

- **Avenging death of Lala Lajpat Rai (1928):** Lala Lajpat Rai succumbed to injuries of Lathi charge carried out by police during anti-Simon Commission demonstration in Lahore.
 - The Chief police executive, J.P. Saunders, was killed by **Rajguru, Bhagat Singh and Chandra Shekhar Azad**.
- **Assembly Bomb Explosion (1929):** Bhagat Singh along with B.K. Dutt, threw bombs in the Central Legislative Assembly. The court convicted them of **waging war against the state**, sentencing them to life imprisonment.
 - However, **Bhagat Singh** was taken to Lahore to **stand trial in the Lahore Conspiracy Case** for the killing of J P Saunders.

Lahore Conspiracy Case Utilised for National Cause by revolutionaries

- Revolutionaries used the **courtroom to effectively counter the government's false portrayal** of their actions.
- They also organized **hunger strikes** to demand **better conditions and rights for political prisoners**, who were being treated like ordinary criminals by the British.
- **Jatin Das died** on September 13, 1929, **after 63 days of hunger strike**, sparking outrage across India.
- Ultimately, **Bhagat Singh, Sukhdev, and Rajguru were executed on March 23, 1931**.

8.2. NEWS IN SHORTS

8.2.1. GALLANTRY AWARDS

President has approved 103 Gallantry awards to Armed Forces and Central Armed Police Forces personnel on Independence Day 2024.

About Gallantry Awards

- **Order of precedence of awards:** Param Vir Chakra, Ashoka Chakra, Mahavir Chakra, Kirti Chakra, Vir Chakra and Shaurya Chakra.
- **Announced twice in a year** - first on occasion of Republic Day and then on occasion of Independence Day.
- **Wartime Gallantry Awards i.e. Param Vir Chakra, Maha Vir Chakra and Vir Chakra** instituted in 1950.
- **Ashoka Chakra Class-I, Class-II and Class-III** were instituted in 1952. Later renamed as **Ashoka Chakra, Kirti Chakra and Shaurya Chakra** respectively in 1967.
 - These are **Peacetime Gallantry Awards**.

8.2.2. NATIONAL FILM AWARDS



70th National Film Awards for the year 2022 have been announced.

About National Film Awards

- Established in **1954** and were **initially called 'State Awards'**.
- **2 President's Gold Medals, 2 certificates of merit, and 12 silver medals for regional films** were presented in the earlier years.
- Awards have been **administered by the Directorate of Film Festivals since 1973**.
- Awards are given in **3 categories: Feature Films, Non-Feature Films, and Best Writing in Cinema**.
- **Most Film Friendly State award** is also given, along with the National Film Awards, to a **State of India that has been helpful in furthering the growth of the film industry**.


8.2.3. ERRATA

- In the **June 2024 Monthly Current Affairs magazine**,
 - In **Article 8.1. 'Devi Ahilyabai Holkar'** it was incorrectly mentioned that 'Tukoji Rao Holkar' was 'her adopted son'. The correct information is **'Tukoji Rao Holkar' was adopted son of 'Malhar Rao Holkar'**.
 - In **Article 8.2. 'Nalanda University'** it was incorrectly mentioned that 'the project involves 17 participating countries'. The correct information is **'along with India, the project involves 17 participating countries'**.

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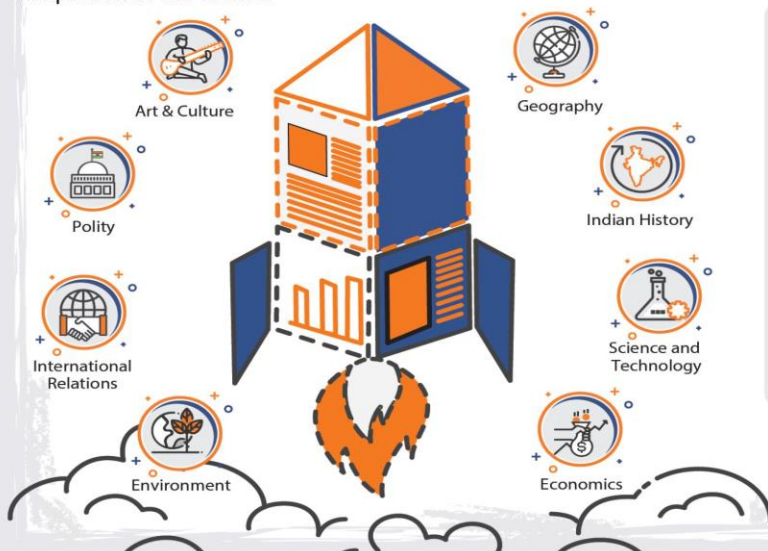
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9. ETHICS





9.1. EMOTIONAL INTELLIGENCE

Introduction

Traditionally, education was focussed mainly on development of **cognitive skills and intelligence** is seen as the **primary driver of educational achievement**. However, a **recent study** suggests that **non-cognitive skills and Emotional Intelligence (EI)** is as crucial in shaping a student's academic journey as brain intelligence.

About Emotional Intelligence

- It is defined as the ability to **recognize, understand, manage, and influence your own emotions and the emotions of others**.
- The term was first coined in 1990 by researchers **John Mayer and Peter Salovey** but was later popularized by **psychologist Daniel Goleman**.
- A high EI aids in **strengthening interpersonal skills**, especially related to **conflict management and communication** and a **holistic personality development** by developing non-cognitive skills.
 - E.g. non-cognitive skills such as **grit, perseverance, academic interest, and the value attributed to learning etc.**

Features of Emotional Intelligence (Daniel Goleman's Model)		
	 Recognition	 Regulation
 Personal Competence	Self-Awareness <ul style="list-style-type: none"> • Self-confidence • Understanding own strengths and weaknesses • Understanding impact of your behaviour on others • Understanding impact of other's behaviour on your emotional state 	Self-Management <ul style="list-style-type: none"> • Emotional regulation: keep a check on disruptive emotions • Acting in congruence of your values. • Open to change: adaptability • Goal-orientation irrespective of hurdles.
 Social Competence	Social Awareness <ul style="list-style-type: none"> • Understanding social situations. • Empathetic orientation • Active listening 	Social Management <ul style="list-style-type: none"> • Team management • Conflict resolution • Sensitive and empathetic interpersonal relations and communication.

Difference between EQ and IQ

Emotional Quotient (EQ)	Intelligence Quotient (IQ)
<ul style="list-style-type: none"> • It consists of identifying, perceiving, and regulating emotions through five domains: self-awareness, self-regulation, empathy, and social skills. • E.g. staying calm in stressful situations and making objective decisions 	<ul style="list-style-type: none"> • It consists of logical reasoning, cognitive functions, memory, word comprehension, maths skills, abstract and spatial thinking, mental agility. • E.g. Good scores in academics
<ul style="list-style-type: none"> • It is subject to environmental and social influences so can be actively trained and developed over time. 	<ul style="list-style-type: none"> • Considered a stable trait influenced by genetics.
<ul style="list-style-type: none"> • No universally standardized test. Testing may involve ability tests and self-reported analyses of a person's own typical behaviour. 	<ul style="list-style-type: none"> • Assessed through standardized intelligence tests (IQ tests), by comparison with average performance in the age group.
<ul style="list-style-type: none"> • A pivotal role in general well-being, promoting a person's mental health and quality of relationships. Can lead to interpersonal success even if IQ is average. 	<ul style="list-style-type: none"> • Can contribute to greater academic achievement and job performance.

Importance of EI in education

- **Enhanced Academic Performance:** Emotionally intelligent students can better **manage stress, setbacks, and persevere through challenges**.

- They exhibit **improved focus and problem-solving abilities**, enabling them to engage more effectively in the **learning process**.
- **Positive mental health:** Emotionally intelligent students are more likely to exhibit **higher self-esteem, lower levels of anxiety and depression, and better overall mental well-being**.
- **Developing Empathy and Compassion:** By understanding and recognizing emotions in themselves and others, students can develop empathy and compassion towards peers.
 - It helps in creation of a **supportive and inclusive learning environment, where students feel valued and understood**.
 - **E.g. students taught gender-sensitivity, sharing through experiential learning**.
- **Nurturing Relationships through Effective Communication:** EI equips students with the skills necessary to communicate their thoughts, needs, and emotions effectively. **E.g. through debate and elocution competitions**
 - They learn to **listen actively, respond empathetically, and resolve conflicts constructively**. These skills contribute to **positive relationships with peers, teachers, and other members**.
 - **E.g. learning to accept own mistakes**.
- **Ensure Success in the long-term:** EI is highly **valued by employers and organizations as it helps to manage emotions, collaborate effectively, and exhibit strong interpersonal skills which are critical in the workplace**.
 - **E.g. coordination with colleagues, handling work pressures**.
- **Effective Leadership and Decision-making:** Students with EI **understand their strengths and weaknesses, possess self-confidence, and can motivate and inspire others**.

Ways to inculcate Emotional intelligence

- **Social-emotional learning (SEL) programs:** Designed to teach students the skills they need to **manage their emotions, set and achieve positive goals, feel and show empathy, establish and maintain positive relationships, and make responsible decisions**.
 - **E.g. Prerana Experiential Learning School in Vadnagar, Gujarat** which is a one-week residential program providing **experiential and inspirational learning**.
- **Collaborative Learning:** **Group projects, peer tutoring, and team-based activities** encourage students to **work together, share ideas, and develop social skills** aids in improving **teamwork, communication, and conflict resolution skills**.
 - **E.g. Happiness Curriculum, Delhi**.
- **Reflection and self-awareness practices:** **Meditation, journaling** helps students develop **self-awareness and self-regulation**.
- **Empowering Teachers and Staff:** EI helps teachers in **recognizing and responding to emotional needs, creating emotionally safe classrooms, implementing restorative practices instead of punitive measures etc.**
- **Involving Parents and the Community:** To holistically foster EI with practices at home and society.
- **Feedback system:** Measuring the impact steps taken through **Student Surveys, impact on academic performance, and behavioural indicators like peer relationships, discipline referrals etc.**
- **National Education Policy, 2020** emphasises on developing **creative potential** of each individual by focussing on **social, ethical and emotional** dispositions along with foundational and cognitive capabilities.
 - **E.g. multi-disciplinary education** with freedom to choose subjects, professional academic and career counselling etc.

Application of Emotional Intelligence for administrative practices

- **Self-assessment and Self-awareness:** Helps in **understanding one's strengths and weaknesses, effective emotional management**.
 - This allows them to remain **calm under pressure and respond strategically rather than react impulsively**.
- **Effective conflict resolution:** EI aids in giving a **holistic and objective view** of a situation which helps in effective conflict resolution through **empathetic communication and interpersonal skills**.
 - **E.g. social awareness develops a sensitive approach when handling issues like communal riots etc.**
- **Address the conflict of interest:** Administrators face various conflicts of interest and EI helps in **decision-making by guiding conscientious actions**.
- **Anticipating needs and providing support:** EI helps in building a **leadership which is inclusive and considerate**. It helps in **upholding team spirit** and improves **efficiency and coordination** of the team.
 - **E.g. finding mutually beneficial solutions rather than imposing decisions from above**.

- **Building environment of trust:** Colleagues as well as citizens feel being heard and supported due to **social management skills** that EI develops.
 - E.g. **IAS Faiz Ahmed Mumtaz** using **education and libraries** to transform the **cybercrime hub, Jamtara**.

Check your ethical aptitude

You are the Principal of a District School. During regular inspection, you notice that there is an informal segregation of students on caste lines. Students have formed peer groups with similar caste students and tend to fight often, reinforcing caste discrimination in informal settings. On discussion with the teachers, this observation is confirmed. The students come from nearby villages where caste discrimination is prevalent in social settings.

1. What steps will you take to improve the situation. Give reasons for the same.
2. What is Emotional intelligence? Can it be learnt? If yes, how?

9.2. SOCIAL INFLUENCE AND PERSUASION IN TIMES OF SOCIAL MEDIA AND INFLUENCERS

Introduction

The digital world has witnessed exponential rise of “social media influencers who become famous through their digital content on social media. These influencers are increasingly playing a significant role in shaping our opinions, consumer’s interests and purchasing decisions and influence our notion of fashion, health, and music.

What is Social Influence and Persuasion?

- **Social influence** is the process by which individuals adapt their opinion, revise their beliefs, or change their behaviour as a result of social interactions with others.
 - An influencer is a person who has an audience that they entertain through a channel and who uses blogs, posts, tweets, and other methods on social media to impact the audience. Social media influencers are influential individuals who engage a large following to boost online engagement for endorsed products or services, often using a trusted audience.
 - **Features:** based on broader social norms, often unintentional and implicit, non-verbal, based on power, status, reputation, resources
 - **Major types:-**
 - ✓ **Conformity:** - Behaviour change designed to match the actions of others. E.g. selecting clothes to match what other people are wearing.
 - ✓ **Compliance:** - Behaviour change that occurs as a result of direct request. E.g. a child cleaning up his/her room as per parent’s request.
 - ✓ **Obedience:** - Change in behaviour in response to a direct order from an authority figure. E.g. signing of a letter when asked by a teacher
- **Persuasion** on the other hand refers to efforts to change another person's beliefs, attitude, behaviour or preferences in receivers conforming to intentional efforts by a communicator.
 - **Features:** mostly intentional, explicit and verbal, based on ideas of perceived friendship through similarities in language and interests
 - **Principles:** reciprocity, consistency, social proof, authority, liking, scarcity, and unity.
 - **Techniques used:** eye-catching photos and videos, interesting stories, social proof, and the promotion of positive social norms.

Stakeholders	Role/Interests
Citizens	virtual social connectivity, quality digital services, entertainment, self-expression, data protection and privacy, job opportunities(e.g. content creation)
Society	Social cohesion, Democratic public discourse, addressing of misinformation and disinformation
Market	Fair competition, economic growth by digital economy, data-driven business insights
Government	protect consumer interests without hindering creativity and business, level playing field, maintaining national security, addressing misinformation and disinformation
Social Media	Quality service delivery, Increased customer base, user engagement and retention
Influencers	creative freedom, monetization of personal brand, manage public image and reputation, , leveraging partnerships with advertisers and brands

How Social Media and influencers are ushering progressive Social Influence and Persuasion?

- **Progressive social norms:** Influencers through social media share uplifting and empowering content and also amplifies voice of marginalized communities. E.g. Black Lives Matter, Me-too Campaign
- **Influencers as a new marketing channel:** They enhance brand credibility, help in purchase intention through collaborations and cross-promotion.
- **Promoting Inclusivity and Diversity:** Influencers often champion inclusivity by representing diverse communities and challenging stereotypes
- **Democratisation of information:** E.g. news in regional languages, updates on twitter by government officials and leaders.
 - **Karnataka Digital Advertising Guidelines – 2024 and Uttar Pradesh Digital Media Policy 2024** allows for advertisement to social media influencers to disseminate information of government policies and schemes.

Harmful impact of Social Media and influencers

- **Spread of Misinformation and Disinformation:** Influencers intentionally/unintentionally often spread misinformation. This may hampers the decision making process and has negative impact on democratic processes such as elections.
- **Mental Health Issues:** Self comparisons with unrealistic beauty standards, distorted view of reality contributes to mental health issues such as depression and anxiety.
 - Moreover, **culture of Instagram and Youtube reels** are leading to decreased attention span and productivity contributing leading to **less self-esteem**.
- **Impact on children:** Social media addiction, especially among teens, hinders productivity, physical health, and interpersonal relationship development.
- **Radicalisation:** Extremists often use social media platforms as **weapons of mass persuasions** to propagate radical ideologies among vulnerable individuals. **E.g. online radicalisation by Islamic State.**
- **Threat to Branding:** Influencers can use fear appeals and misleading content to sell irrelevant or defective products, posing a threat to reputable brands, potentially causing negative customer attitudes and severe reputational damage.

Psychological Constructs Used by Digital Influencers

- **Reciprocal Relationship and Reciprocity Bias:** We feel need to respond to influencers by giving them likes, follows, share in response to their services.
- **Authority Bias:** It is tendency to trust individuals based on live results or testimonies.
- **Familiarity Effect and Repetition Bias:** Consistent social media posts make us value familiar information more over novelty.
- **Social proof:** People often mimic others behaviour thinking that if everyone is using a product, it must have merit.
- **Halo Effect:** A person with one favourable trait is considered valuable as a whole. E.g. we may unconsciously assume that an attractive influencer have other positive attributes of intelligence and sincerity.
- **Scarcity Heuristic:** In the event of scarcity, people are more likely to make immediate purchases, sign up, or tune in.
- **Social Connection and Cultural Conformity:** we feel secure knowing we are doing/buying something popular and liked by many.

Steps to be taken

- **Digital influencer marketing guidelines:** Proper endorsement guidelines in the form of “**Endorsement Know-Hows**” should be prescribed for influencers requiring clear, prominent, and hard-to-miss disclosures including terms such as "advertisement," "sponsored," "collaboration," or "paid promotion."
- **Increased Awareness and Education:** The psychological tactics used by influencers should be made aware to the consumers to take informed decisions.
 - The question of “**whether influencers are truly experts?**” should be raised through a critical thinking process.
- **Anti-Radicalisation Narratives:** Strategies to challenge extremist narratives include producing counter-contents, blocking or censoring extremist content, controlling information flow, and manipulating search engine results to control radicalization and extremism.
- **Limited Screen time for Children and Teenagers:** E.g. Swedish health authorities have issued new recommendations to restrict screen time for children and adolescents.

India's Rules and Responsibilities

- **The Central Consumer Protection Authority (CCPA)** issued Guidelines for prevention of Misleading Advertisements and Endorsements for Misleading Advertisements.
- **The Department of Consumer Affairs, under the Ministry of Consumer Affairs, Food and Public Distribution,** has released guidelines for celebrities, influencers and virtual influencers in the field of health and wellness.
- **Securities and Exchange Board of India (SEBI)** has brought in new norms to regulate financial influencers or "finfluencers" which prevents its regulated entities from partnering with unregistered individuals.
- **Advertising Standards Council Of India** has issued "guidelines for influencer advertising in digital media"
- **Ministry of Information and Broadcasting** had cautioned social media influencers against endorsing offshore online betting and gambling platforms

In recent years, the exponential growth of social media platforms has led to the emergence of a new category of public figures known as "social media influencers." These individuals have gained significant followings through their digital content on platforms such as YouTube, Instagram, and Facebook. Their influence extends to shaping public opinions, consumer interests, and purchasing decisions across various domains including fashion, health, and music. In light of the above:

- a) Analyze the positive and negative impacts of social media influencers on society. (150 words)
- b) Discuss the ethical considerations that should guide the regulation of social media influencers. (150 words)

Scan the QR code to know more about the **impact of Social media on society.**

Weekly Focus #22: Social Media and Society



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10. SCHEMES IN NEWS

10.1. AGRISURE (AGRI FUND FOR START-UPS & RURAL ENTERPRISES) SCHEME

Why in the News?

Recently, Minister for Agriculture and Farmers Welfare and Rural Development launched the AgriSURE (Agri Fund for Start-ups & Rural Enterprises) Scheme.

Objective	Features
<ul style="list-style-type: none"> • To attract more investment in the agri and rural start-up ecosystem by making contribution to various Alternative Investment Funds (AIFs). • To provide liquidity to existing Agri & Agri-tech start-ups that are unable to upscale their business due to dearth of access to various kinds of financing like equity, debt instruments, etc. • Encourage young entrepreneurs to take high-risk, while engaging in high-impact activities in agriculture and Agri-tech. • To give a boost to opportunities for profitable forward and backward linkage systems making farm produce value chain system stronger and bring in new entrepreneurs into field of agri-business. • To enlist more players in the farm related ecosystem for enabling Farmer Producer Organizations (FPOs)/ Farmer Producer Companies (FPCs)/Primary Cooperative Societies to access latest automated farm processes and machinery through Agri tech Start-ups. • To create additional employment opportunities for the technically qualified rural and urban youth to look up to agriculture as a business opportunity. 	<ul style="list-style-type: none"> • Background: It was announced in Budget 2022-23 • Aim: To support innovative, technology driven, high-risk, high-impact activities in agriculture and allied areas • Sponsoring agencies : Government of India and NABARD • Total Corpus: ₹750 crore (Fund is registered as a Category-II Alternative Investment Fund with SEBI.) <div data-bbox="565 667 1507 1184" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">Structure and Management of the AgriSure Fund</p> <p style="text-align: right;">(Photo Source: NABARD)</p> </div> <ul style="list-style-type: none"> • The Fund has two schemes <ul style="list-style-type: none"> ○ AgriSURE – FoF Scheme: <ul style="list-style-type: none"> ✓ Aim:-funding support to Category I and Category II AIFs that make onward investments in Start-ups. It will invest in SEBI-registered sector agnostic, sector-specific and debt AIFs ✓ Corpus:- : ₹450 crore ✓ Maximum investment in a single AIF: 5% of the corpus of AIF or ₹25 crore, whichever is lower. ○ AgriSURE – Direct Scheme: <ul style="list-style-type: none"> ✓ Aim: direct equity investment in early-stage Start-ups that are recognized by the Department for Promotion of Industry and Internal Trade (DPIIT) and are incorporated in India. ✓ Corpus: ₹300 crore ✓ Maximum investment in a single Start-up: ₹25 crore subject to AIF Regulations. • Duration of Fund: 10 years from date of inception, extendable by two years • Target Beneficiaries <ul style="list-style-type: none"> ○ Support about 85 Start-ups by the end of the Fund life ○ Start-ups working in agriculture and rural development include but are not limited to:-

<ul style="list-style-type: none"> • Retain existing rural youth in agriculture and encourage younger generation to take to agriculture by providing newer technologies, techniques and equipment's at their doorsteps from time to time. 	<ul style="list-style-type: none"> ✓ Agri-tech, food processing, animal husbandry, fisheries, supply chain management, farm mechanisation, biotechnology, waste management, renewable energy, agri value chain including primary cooperative societies development, support for FPOs, technology support at farm level and climate change.
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10.2. PM KUSUM

Why in the News?

As per Ministry, total numbers of farmers benefited in the country through the **Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) scheme** as on 30.06.2024 is around 4.1 Lakhs.

Objectives	Salient features
<ul style="list-style-type: none"> • Incorporating renewable energy in farmers' irrigation practices. • Replacing high cost diesel with less expensive solar energy. • Reducing the agriculture electricity subsidy burden on States and improving the financial health of DISCOMS • Helping farmers gain access to solar water-pumps at subsidized rates. • Giving farmers an avenue to utilize their barren land through setting up of solar power plants for energy generation. 	<ul style="list-style-type: none"> • Ministry: Ministry of New and Renewable Energy • Launch year: 2019 • Target: Add Solar capacity of about 34,800 MW by March 2026 • Type: central sector scheme • Eligibility: <ul style="list-style-type: none"> ○ An individual farmer. ○ A group of farmers. ○ Farmer producer organization. ○ Panchayat. ○ Co-operatives. ○ Water User Associations. <p>Three Components</p> <ul style="list-style-type: none"> • Component A: Setting up of 10,000 MW of Decentralized Ground/ Stilt Mounted Grid Connected Solar or other Renewable Energy based Power Plants by the farmers on their land. <ul style="list-style-type: none"> ○ Farmers can install Renewable Energy Power Plants (500 kW to 2 MW) on their own land, either individually or with groups/cooperatives. <ul style="list-style-type: none"> ✓ Solar panels can be installed on cultivable land with crops grown below. ○ DISCOMS will purchase solar power at a feed-in-tariff (FiT) set by the State Electricity Regulatory Commission (SERC). ○ Procurement Based Incentive (PBI) @ 40 paise/kWh or Rs. 6.60 lakhs/MW/year, whichever is less, will be provided for the first five years by MNRE to DISCOMs, for buying the power from farmers/developers ○ The project site should be within 5 km of the nearest sub-station. • Component B: Installation of 14 Lakh Stand-alone Solar Agriculture Pumps. <ul style="list-style-type: none"> ○ Individual farmers will be supported to install standalone solar Agriculture pumps of capacity up to 15 HP in off-grid areas, where grid supply is not available. ○ Centre and state to share 30% of pump cost each; farmer to provide the remaining 40% (can access bank loan for up to 30% of the cost). <ul style="list-style-type: none"> ✓ In NER/Hilly Region and Islands, CFA of 50%, State Government subsidy 30%, Remaining 20% by the farmer ✓ In case the State Government is not in a position to give its share of subsidy of 30%, farmers can still set up solar pumps with only Central Financial Assistance. • Component C: Solarisation of 35 Lakh Grid Connected Agriculture Pumps including Feeder Level Solarization. <ul style="list-style-type: none"> ○ Individual Pump Solarisation (IPS)

- ✓ **Individual farmers having grid connected agriculture pump will be supported to solarise pumps.** Solar PV capacity up to two times of pump capacity in kW is allowed under the scheme
- ✓ The farmer will be able to use the generated solar power to meet the irrigation needs and the **excess solar power will be sold to DISCOMs.**
- ✓ Centre and state to share 30% of pump cost each; farmer to provide the remaining 40% (can access bank loan for up to 30% of the cost).
- **Feeder Level Solarisation (FLS)**
 - ✓ Instead of the individual solar pumps the states can solarize the agriculture feeders.
 - ✓ **Where agriculture feeders are not separated,** loan for feeder separation may be taken from NABARD or PFC/REC.
 - Further, assistance for feeder separation may be availed from the Revamped Distribution Sector Scheme (RDSS) of the Ministry of Power. However, mixed can also be solarised.
 - ✓ CFA of 30% on the cost of installation of solar power plant (up to Rs 1.05 Cr/MW for General States and Rs 1.75 Cr/MW for NER/Hilly Region and Islands) will be provided.
 - ✓ However, in the NER/Hilly Region and Islands 50% subsidy is available.

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11. PLACES IN NEWS

India

Madhya Pradesh

- **Tawa Reservoir** (wetland) added to Ramsar Sites List.
- **SJVN Limited** has successfully commissioned the 90 MW **Omkareshwar Floating Solar Project** at Khandwa.

Gujarat

- Under the Sagarmala programme, Centre is developing the **National Maritime Heritage Complex (NMHC)**, at Lothal, Gujarat.
- Unit 4 of Indigenous 700 MWe Kakrapar Nuclear Power Plant (KAPP 4) started working at full capacity

Karnataka

- **Atomic Minerals Directorate for Exploration and Research** has established 1,600 tonnes of Lithium resources in **Mandya district**.

Assam

- Oil and gas exploration likely to threaten **Hoolock Gibbon** habitat.

Tripura

- Ministry of External Affairs denied that floods in eastern districts of Bangladesh were caused due to opening of **Dumbur dam** on Gumti river.

Bihar

- Researchers have discovered anti-diabetic medicinal herb **Gurmar** on Gaya's **Brahmayoni Hill**.

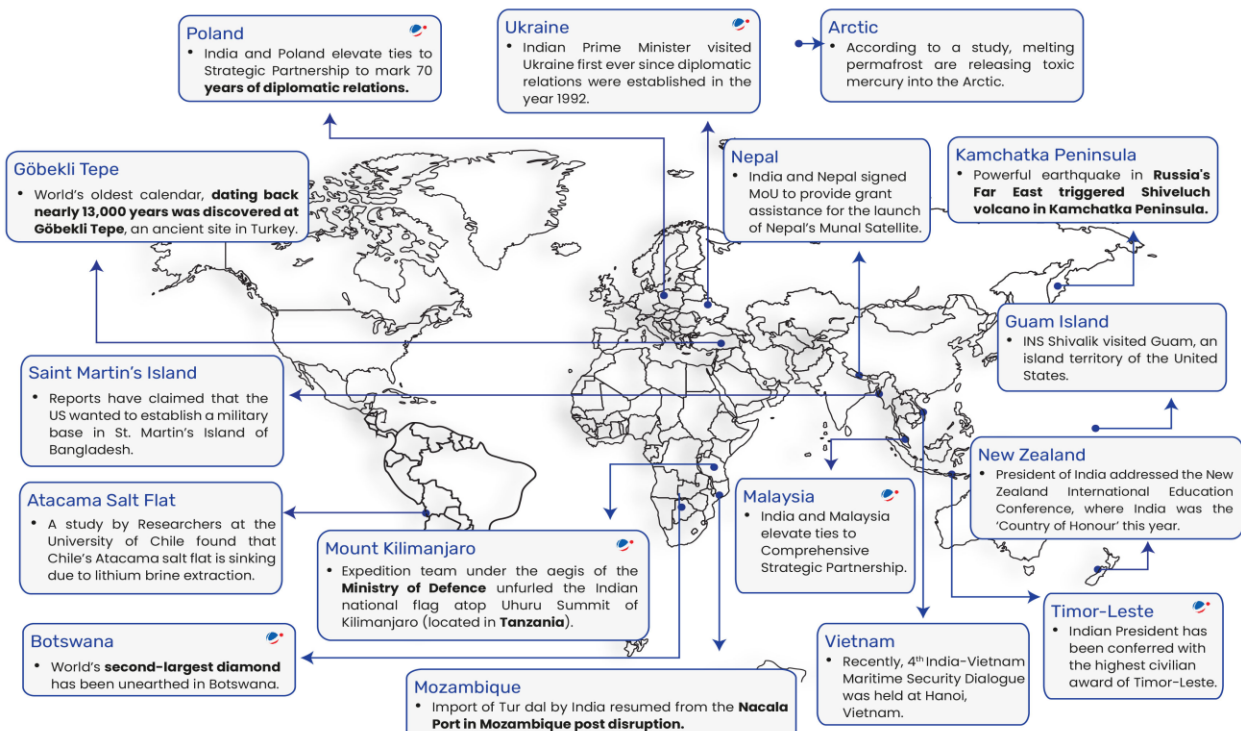
Chhattisgarh

- Chhattisgarh approved a proposal to **notify Guru Ghasidas Tamor Pingla Tiger Reserve**.

Tamil Nadu

- **Nanjayan Bird Sanctuary** (wetland) added to Ramsar Sites List.
- **Kazhuveli Bird Sanctuary** (wetland) added to Ramsar Sites List.
- **Terracotta pipelines** unearthed at Keeladi in Sivaganga district.

WORLD



12. PERSONALITIES IN NEWS

Personality	About	Ethical Values exhibited by the Personality
 <p>Sidhu Murmu</p>	<p>Recently, Sidhu Murmu and his brother Kanhu Murmu were remembered on their death anniversary.</p> <p>About Sidhu Murmu</p> <ul style="list-style-type: none"> • Sidhu Murmu along with Kanhu Murmu were Santhal (A tribe) leaders. • Contribution <ul style="list-style-type: none"> ▸ Santhal Revolt(1855-56): Considered as first peasant movement, was led by Sidhu and Kanhu along with Chand and Bairab <ul style="list-style-type: none"> ▸ Revolt was aimed to get rid of oppressive 'Dikus'(Outsiders viz. Britishers, Money lenders) ▸ Santhal Parganas Tenancy Act: Passed after the revolt made transfer of land from Santhals to outsiders illegal. • Achievement: <ul style="list-style-type: none"> ▸ Hul Diwas(30th June) is celebrated in Jharkhand to remember the sacrifice of Sidhu-Kanhu. 	<p>Bravery and Justice</p> <ul style="list-style-type: none"> • He risked his life for the freedom and dignity of his people. • His commitment to ensuring fairness is evident in his fight to protect the land rights of the Santhals.
 <p>Raghoji Bhangre</p>	<p>Ministry of tribal affairs recently paid homage to Raghoji Bhangre.</p> <p>About Raghoji Bhangre</p> <ul style="list-style-type: none"> • Tribal revolutionary leader, born in Devgaon of Ahmednagar District (Maharashtra) in Koli Community. • His father Ramji Rao Bhangre is famous for Koli rising (1822 - 29) against money lenders and British rule. <ul style="list-style-type: none"> ▸ Ramji Rao Bhangre was subsequently hanged in Cellular Jail. <p>Key Contributions:</p> <ul style="list-style-type: none"> • Bhangre led the Koli community against exploitative moneylenders and colonial rule. • He was eventually captured in 1847 by Lt. Gell at Pandharpur and later hanged. 	<p>Resistance and Courage</p> <ul style="list-style-type: none"> • Showed staunch opposition to colonial oppression by leading a campaign against exploitative moneylenders and British rule, standing up for the rights of his community. • Embodied bravery by continuing the fight against British exploitation despite the imminent danger, ultimately sacrificing his life for his cause.



Great social reformer from Kerala Shree Narayan Guru was remembered on his 170th Birth Anniversary.

About Shri Narayan Guru

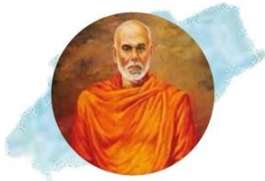
- Born in **Chempazhanthy** (near present-day Thiruvananthapuram) in **Ezhava family**.
- He was a saint, seer, philosopher, poet, and social reformer who **led movement against caste system and its consequences**.

Key Contributions

- Advocated for **social equality**, emphasizing the principle of **"One caste, One Religion, One God for all human beings."**
- **Aravipuram Movement (1888)**: He installed the Siva idol at Aravipuram.
 - It serves as a symbol of resistance against social injustice, as traditional norms restricted temple entry to higher castes.
- **Shree Narayan Dharma Pratipalana (SNDM) Yogam** was founded under his guidance by Dr. Palpu Padmnabhan.
- **Literary works**: Advaita Deepika, Atmavilasam, Daiva Dasakam, Brahmavidya Panchakam, etc.

Egalitarianism and Pluralism

- He was the champion of the rights of lower caste oppressed in the twentieth century Kerala. He overturned the social system of entire Kerala, while following simple means of ethical writings and social mobilization.
- He played a significant role in reforming the society by asserting his pluralist view with equality and liberty.



Shree Narayan Guru



About Lokmanya Bal Gangadhar Tilak

- Born at Ratnagiri in Maharashtra.
- He was a scholar, philosopher, nationalist etc.

Key Contributions/Work

- Advocated for **Swaraj (self-rule)** and was one of the first leaders to demand **complete independence** from British rule.
- Bal Gangadhar Tilak had **established the Home Rule League in April 1916** at Belagavi.
 - Annie Beasant had also launched a Home Rule League, the two Leagues never merged.
- Founded two newspapers: **"Kesari"** (in Marathi) and **"The Mahratta"** (in English).
- He composed the 'Gita Rahasya'

Patriotism and resilience

- His whole life revolves around the cause for self-determination and independence of India as a nation.
- He was imprisoned many times for his political writings but it did not affect his political views and he continued to write for political cause.



Lokmanya Bal Gangadhar Tilak





Eminent revolutionary leader and freedom fighter Madame Bhikaji Cama was remembered on her death anniversary (Aug 13).

About Madame Bhikaji Cama

- She was a revolutionary icon hailing from **Navsari district of the present-day state of Gujarat.**
- Known as the **“Mother of the Indian Revolution”**, she was an **ardent advocate of Indian freedom abroad.**

Key Contributions

- Started **Paris edition of Bande Mataram** to circulate information about the freedom movement and garnered support nationally and internationally.
- **In 1905**, she co-founded **Paris Indian Society**, also known as **Bharat Mandal.**
- On **August 22, 1907**, she became **the first person to hoist Indian flag on foreign soil in Stuttgart (Germany).**
 - Flag she unfurled was **co-designed by Cama and Shyamji Krishna Varma.**

Patriotic and Indomitable spirit

- Bhikaji was a nationalist at heart and believed that the Britishers had ruthlessly exploited India for their own profit.
- Unshaken by the difficulties thrown by British government, she continued to maintain active contacts with Indian, Irish, and Egyptian revolutionaries as well as with French Socialists and Russian leadership for the cause of freedom struggle



Madame Bhikaji Cama



Prime Minister paid homage to Sri Aurobindo on his Birth Anniversary.

About Shri Aurobindo Ghose

- Born in Kolkata, **West Bengal.**
- He was an **Indian nationalist, poet, philosopher, and yogi.**

His Contributions:

- He was one of the founders of **youth club Anushilan Samiti.**
- Was arrested in connection with the **Alipore Bomb Case (1908).**
- Associated himself with journals like **Jugantar, Bande Mataram, and Karmayogi.**
- Established **Sri Aurobindo Ashram in Pondicherry** in 1926.
- Emphasized on the concept of **spiritual nationalism** & conceptualized Integral Yoga system.

Rationalism and determination

- His philosophy is based on facts, experience and personal realisations and spirituality was inseparably united with reason.
- He spent his life working towards the cause of India's freedom, and for further evolution of life on earth.



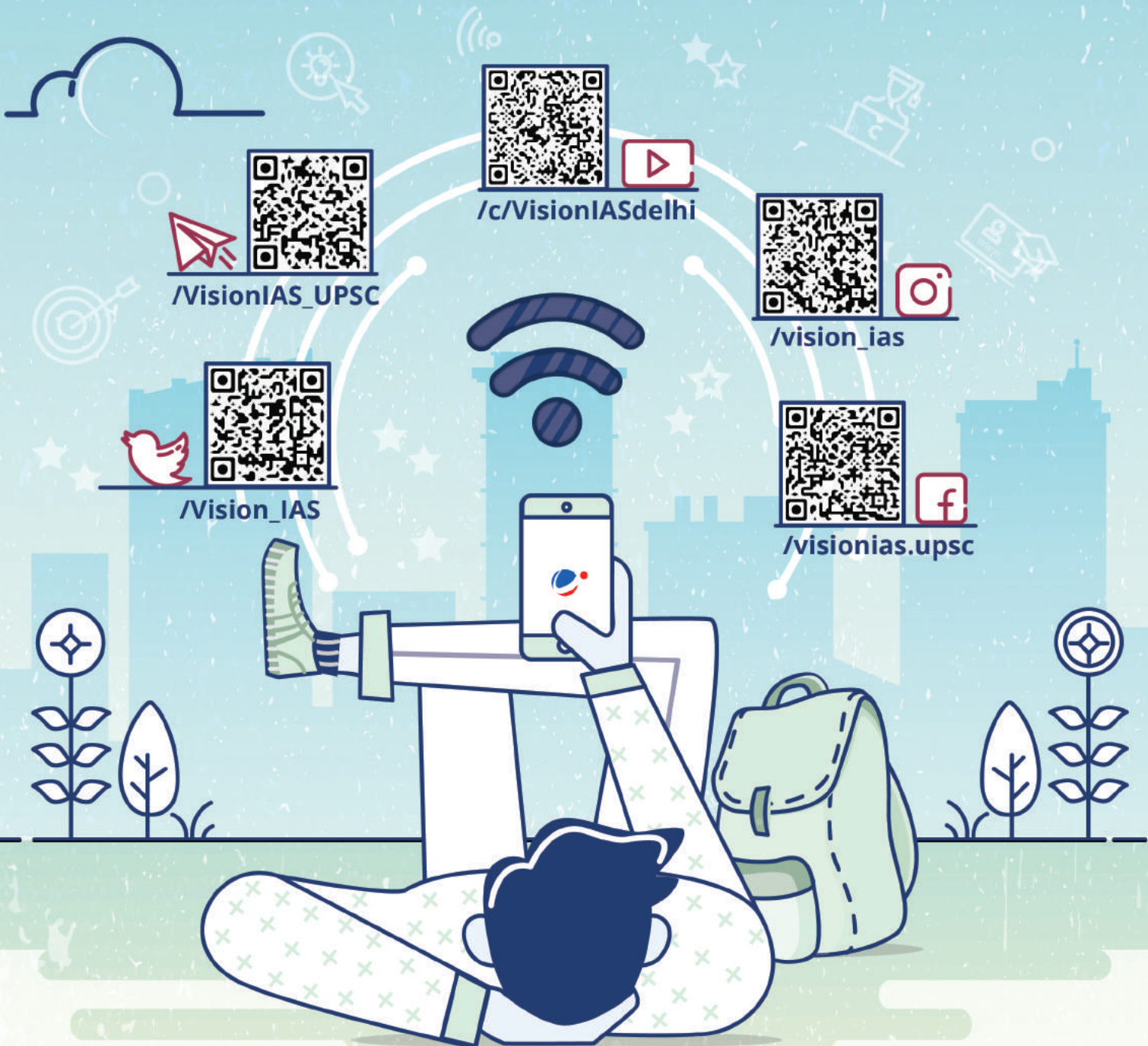
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79

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9
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Prajapati**

39
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