VISIONIAS
INSPIRING INNOVATION

January, 2023

Monthly CURRENT AFFAIRS

8468022022 | 9019066066

www.visionias.in

DELHI | JAIPUR | PUNE | HYDERABAD | AHMEDABAD | LUCKNOW | CHANDIGARH | GUWAHATI

"You are as strong as your Foundation"

FOUNDATION COURSE
GENERAL STUDIES
PRELIMS CUM MAINS
2024

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 2024

Live - online / Offline Classes

ONLINE Students

NOTE - Students can watch LIVE video classes of our COURSE on their ONLINE PLATFORM at their homes. The students can ask their doubts and subject queries during the class through LIVE Chat Option. They can also note down their doubts & questions and convey to our classroom mentor at Delhi center and we will respond to the queries through phone/mail.

Scan the QR CODE to download VISION IAS app

DELHI

31 MAR, 9 AM | 17 MAR, 1 PM | 21 FEB, 9 AM | 24 JAN, 1 PM

AHMEDABAD: 16th Feb, 8:30 AM | CHANDIGARH: 19th Jan, 5 PM | PUNE: 21st Jan, 8 AM
JAIPUR: 15th Feb, 7:30 AM & 5 PM | LUCKNOW: 18th Jan, 5 PM | HYDERABAD: 6th Feb, 8 AM

OFFLINE* IN 170+ CITIES

*SUBJECT TO GOVERNMENT REGULATIONS AND SAFETY OF THE STUDENTS

#PrelimsIsComing
ABHYAAS 2023
ALL INDIA PRELIMS
(GS+CSAT) MOCK TEST SERIES

2 APRIL | 23 APRIL | 7 MAY

- All India ranking & detailed comparison with other students
- Vision IAS Post Test Analysis ™ for corrective measures and continuous performance improvement
- Closely aligned to UPSC pattern
- Available in ENGLISH/ हिन्दी

Register @ www.visionias.in/abhyaas

AGARTALA | AGRA | AHMADNAGAR | AHMEDABAD | AIZAWL | AJMER | ALIGARH | ALMORA | ALWAR | AMARAVATI | AMBALA | AMBIKAPUR | AMRAVATI | AMRITSAR | ANANTHAPURU | ASANSOL
AURANGABAD | AYODHYA | BALLIA | BANDA | BAREILLY | BATHINDA | BEGUSARAI | BENGALURU | BHAGALPUR | BHAVNAGAR | BHILAI | BHILWARA | BHOPAL | BHUBANESWAR | BIKANER | BILASPUR
BOKARO | BULANDSHAHR | CHANDIGARH | CHANDRAPUR | CHENNAI | CHHATARPUR | CHITTOOR | COIMBATORE | CUTTACK | DAVANAGERE | DEHRADUN | DELHI-MUKHERJEE NAGAR | DELHI-
RAJINDER NAGAR | DHANBAD | DHARAMSHALA | DHARWAD | DHULE | DIBRUGARH | DIMAPUR | DURGAPUR | ETAWAH | FARIDABAD | FATEHPUR | GANGTOK | GAYA | GHAZIABAD | GORAKHPUR
GR NOIDA | GUNTUR | GURDASPUR | GURUGRAM | GUWAHATI | GWALIOR | HALDWANI | HARIDWAR | HAZARIBAGH | HISAR | HOWRAH | HYDERABAD | IMPHAL | INDORE | ITANAGAR | JABALPUR
JAIPUR | JAISALMER | JALANDHAR | JAMMU | JAMNAGAR | JAMSHEDPUR | JAUNPUR | JHAJJAR | JHANSI | JODHPUR | JORHAT | KAKINADA | KALBURGI | KANNUR | KANPUR | KARIMNAGAR
KARNAL | KASHIPUR | KOCHI | KOHIMA | KOLHAPUR | KOLKATA | KORBA | KOTA | KOTTAYAM | KOZHIKODE | KURNOOL | KURUKSHETRA | LATUR | LUCKNOW | LUDHIANA | MADURAI | MANDI
MANGALURU | MATHURA | MEERUT | MIRZAPUR | MORADABAD | MUMBAI | MUNGER | MUZAFFARPUR | MYSURU | NAGPUR | NALANDA | NASIK | NAVI MUMBAI | NELLORE | NIZAMABAD
NOIDA | ORAI | PALAKKAD | PANAJI | PANIPAT | PATIALA | PATNA | PRAYAGRAJ | PUDUCHERRY | PUNE | PURNIA | RAIPUR | RAJKOT | RANCHI | RATLAM | REWA | ROHTAK | ROORKEE | ROURKELA
RUDRAPUR | SAGAR | SAMBALPUR | SATARA | SAWAI MADHOPUR | SECUNDERABAD | SHILLONG | SHIMLA | SILIGURI | SIWAN | SOLAPUR | SONIPAT | SRINAGAR | SURAT | THANE | THANJAVUR
THIRUVANANTHAPURAM | THRISSUR | TIRUCHIRAPALLI | TIRUNELVELI | TIRUPATI | UDAIPUR | UJJAIN | VADODRA | VARANASI | VELLORE | VIJAYAWADA | VISAKHAPATNAM | WARANGAL

Table of Contents

1. POLITY AND GOVERNANCE ____ *3*
1.1. Separation of Power ____ **3**
1.2. Federalism: Unique Status of Delhi ____ **5**
1.3. Elections & Technology ____ **7**
1.4. Women in Judiciary ____ **9**
1.5. Aspirational Block Programme (ABP) ____ **10**
1.6. News in Shorts ____ **11**
1.6.1. Public Service Content ____ 11
1.6.2. Rule of Law Index ____ 11
1.6.3. Free Speech of Ministers ____ 12
1.6.4. Electronic Supreme Court Reports (e-SCR) Project ____ 12
1.6.5. Charge Sheets ____ 12
2. INTERNATIONAL RELATIONS ____ *13*
2.1. India and Global South ____ **13**
2.2. India-Egypt ____ **15**
2.3. India-Eurasia ____ **17**
2.4. India-China Trade Relations ____ **19**
2.5. India-United States Trade Relations ____ **20**
2.6. Indian diaspora in Latin America ____ **22**
2.7. India and UN Peacekeeping ____ **24**
2.8. News in Shorts ____ **26**
2.8.1. Asian Pacific Postal Union (APPU) ____ 26
3. ECONOMY ____ *27*
3.1. WTO: New Agreement on Fisheries Subsidies **27**
3.2. Inequality in India ____ **29**
3.3. Scheme for Financial Support to Digital Payments ____ **31**
3.4. State Finances ____ **33**
3.5. Microfinance Sector ____ **36**
3.6. Insolvency and Bankruptcy Code (IBC) ____ **38**
3.7. Loan-Loss Provisions (LLPs) ____ **41**
3.7.1. Securitization of Stressed Assets Framework (SSAF) ____ 43
3.8. Inland Waterways in India ____ **44**
3.9. Technical Textiles ____ **47**
3.10. News in Shorts ____ **49**
3.10.1. Multi-State Cooperative Societies (MSCS) Act, 2002 ____ 49
3.10.2. Global Economic Prospects Report by World Bank ____ 49
3.10.3. World Economic Situation and Prospects 2023 Report ____ 50
3.10.4. World Economic Forum (WEF) releases Global Risk Report 2023 ____ 50
3.10.5. Sovereign Green Bonds (SGrBs) ____ 50
3.10.6. Domestic Systemically Important Banks (D-SIBs) ____ 51
3.10.7. Utkarsh 2.0 ____ 51
3.10.8. T+1 settlement ____ 51
3.10.9. World Employment and Social Outlook: Trends 2023 report ____ 52
3.10.10. Prajjwala Challenge ____ 52
3.10.11. National Single Window System (NSWS) For Vehicle Scrapping ____ 52
3.10.12. Broadcasting Infrastructure and Network Development (BIND) Scheme ____ 53
4. SECURITY ____ *54*
4.1. Police Reforms ____ **54**
4.2. Military Applications of Drones ____ **56**
4.3. Wassenaar Arrangement ____ **58**
4.4. News in Shorts ____ **59**
4.4.1. Agnipath Scheme ____ 59
4.4.2. INS Vagir ____ 59
4.4.3. Prithvi-II ____ 59
4.4.4. Hypersonic Technology Demonstrator Vehicle (HsTDV) ____ 60
4.4.5. Exercise in News ____ 60
4.4.6. Doomsday Clock ____ 60
5. ENVIRONMENT ____ *61*
5.1. Ozone Hole Recovery ____ **61**
5.2. Cloud Forest Assests ____ **63**
5.3. The Wildlife (Protection) Amendment Act, 2022 ____ **65**
5.4. Forest (Conservation) Rules, 2022 ____ **68**
5.5. Human-Wildlife Conflict ____ **70**
5.6. Fly Ash Utilization ____ **72**
5.7. Samudrayaan Mission ____ **74**
5.8. Joshimath Land Subsidence ____ **76**
5.9. Large Dams in India ____ **78**
5.10. International Container Transhipment Port (ICTP) ____ **80**
5.11. News in Shorts ____ **83**
5.11.1. Urban Forestry and Urban Greening in Drylands Report ____ 83
5.11.2. Sustainable Aquaculture in Mangrove Ecosystem (SAIME) Initiative ____ 83
5.11.3. 1st All India Annual States' Ministers Conference ____ 83
5.11.4. Nature Risk Profile (NRP) ____ 84
5.11.5. Wildlife Conservation Bond (WCB) ____ 84
5.11.6. Asian Waterbird Census (AWC) ____ 84
5.11.7. Species in News ____ 85
5.11.8. Neelakurinji (Strobilanthes kunthiana) ____ 85
5.11.9. Ram Setu ____ 85
5.11.10. Munroe Thuruthu Island ____ 85
5.11.11. Dark Sky Reserve ____ 86
5.11.12. Uranium Contamination in Groundwater ____ 86
5.11.13. Lakes in News ____ 86
5.11.14. Hawaii's Kilauea Volcano ____ 86
5.11.15. Standards and Labeling Program (SLP) of Bureau of Energy Efficiency (BEE) ____ 86
5.11.16. Virtual Power Plants (VPPs) ____ 87
5.11.17. Disaster Management Plan (DMP) for Power Sector ____ 87
5.11.18. Global Overturning Circulation (GOC) ____ 87

5.11.19. New Plateau Type Discovered From Maharashtra ____ 87
6. SOCIAL ISSUES ____ 89
6.1. Foreign Higher Educational Institutions (FHEIs) in India ____ 89
6.2. National Digital University (NDU) ____ 92
6.3. Educational Reports in News ____ 94
6.3.1. All India Survey on Higher Education (AISHE) 2020-2021 ____ 94
6.3.2. Annual Status of Education Report (ASER) 2022 94
6.4. Draft National Medical Commission (Amendment) Bill-2022 ____ 94
6.5. Euthanasia ____ 97
6.6. News in Shorts ____ 99
6.6.1. World Social Report 2023: Leaving no one behind in an ageing world ____ 99
7. SCIENCE AND TECHNOLOGY ____ 100
7.1. Fourth Industrial Revolution- Industry 4.0 ____ 100
7.2. Generative Artificial Intelligence (AI) ____ 102
7.3. National Green Hydrogen Mission ____ 104
7.4. Transfat ____ 106
7.5. Neglected Tropical Diseases ____ 108
7.6. News in Shorts ____ 110
7.6.1. Large Hadron Collider ____ 110
7.6.2. SMART Program ____ 111
7.6.3. Digital India Awards (DIA) ____ 111
7.6.4. XR (Extended Reality) Startup Program ____ 111
7.6.5. Quantum Coherence ____ 112
7.6.6. BharOS ____ 112
7.6.7. Solitary Wave (SW) ____ 112
7.6.8. C/2022 E3 (ZTF) Comet ____ 112
7.6.9. RR Lyrae Stars ____ 113
7.6.10. Immune Imprinting ____ 113
8. CULTURE ____ 114
8.1. Monuments of National Importance (MNI) ____ 114
8.2. Charaideo Maidams (Ahom Burial Mounds) ____ 116
8.3. Sammed Shikhar and Shetrunjay Hill ____ 117
8.4. Roots of Democratic Values in India ____ 119
8.5. News in Shorts ____ 120
8.5.1. Excavation at Harappan site in Gujarat ____ 120
8.5.2. Nalanda Mahavihara ____ 121
8.5.3. Harvest Festivals ____ 121
8.5.4. Thullal ____ 122
8.5.5. Padma Awards Presented by the President ____ 122
8.5.6. Param Vir Chakra (PVC) ____ 122
8.5.7. Kehlo India Youth Games (KYIG), 2022 ____ 123
8.5.8. Jeevan Raksha Padak Series of Awards-2022 ____ 123
9. ETHICS ____ 124
9.1. Ethics of Influencer Endorsements ____ 124
10. SCHEMES IN NEWS ____ 126
10.1. PM SVANidhi ____ 126
10.2. Jal Jeevan Mission ____ 127

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.

1. POLITY AND GOVERNANCE

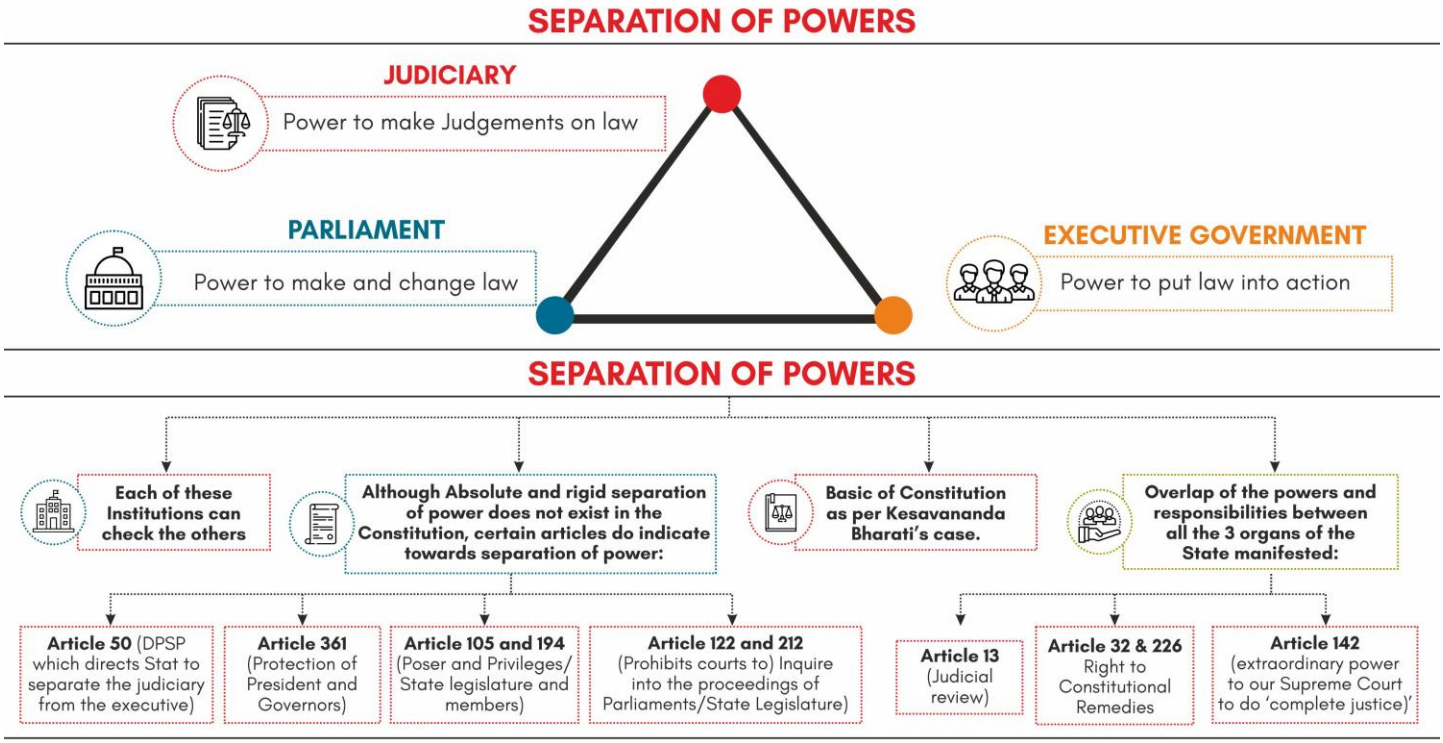
1.1. SEPARATION OF POWER

Why in News?

Recently, demand of executive representation in collegium system had started debate over doctrine of separation of Power in Indian Constitutional setup.

More about News

- Ministry of Law and Justice, in his letter has suggested that **Union government representatives** be included in the SC Collegium and state government representatives in the high court collegium.
- Vice-President also stated that he did not "subscribe" to the landmark ***Kesavananda Bharati*** **judgment of 1973** which had propounded the '**Basic Structure',** upheld judicial review and limited the Parliament's power under Article 368 to amend the Constitution.
- Apex Court bench on delay in appointment of Judges recommended by Collegium, stated that **under Constitution, law declared by the Supreme Court is binding on all.**



Importance of Separation of Power in India

- **Protection of Citizen Rights:** Judiciary being final interpreter of Constitution, protect the **Rights and Liberty of Citizens**.
  - For example-The nine Judge Constitutional Bench of Supreme Court in Justice K. S. Puttaswamy (Retd.) vs Union of India case, unanimously reaffirmed the **right to privacy** as a fundamental right under the Constitution of India.
- **Prevents Abuse of Power:** As powers are distributed among different institutions, these institutions enjoy only limited powers which prevents rise of dictatorship or anarchy and promote constitutional supremacy.

- **Ensure judicial independence:** As the concept of separation of powers helps to strengthen the independence with which the judiciary has to perform its functions.
- **Functional Specialization:** It creates functional specialization among different institutions, ensuring efficiency in the government.
- **Minimizes conflict among government institutions**: There are fairly well-defined boundaries as well as judicial review to deal peacefully with any source of friction between any two organs of government.

Issues in Separation of Power in India

- **Deadlocks between the executive and the judiciary:** The appointment of the CJI and judges of the apex court is governed by a Memorandum of Procedure (MoP), which was issued in 1947 and updated in 1999.
  - **Judiciary stuck down National Judicial Appointments Commission (NJAC) in 2015**.
  - The court told the Centre in 2015 to come up with a **new MoP in order to make the collegium's proceedings transparent**.
  - In 2017, the **MoP was finalised but was not adopted the government said it was reconsidering the issue**.
- **Challenges in Division of function:** This doctrine is based on the assumption that the three functions of the Government are independent and distinguishable from one another.
  - However, in practice, there can be an **overlap in their functions and powers**, leading to conflicts and challenges in adhering to the separation of powers principle.
  - For example, **if the legislature can only legislate, it may face difficulties in punishing someone who commits a breach of its privilege**, as it could be seen as a quasi-judicial function.
- **Leads to encroachment of other organ:** Modern interpretation of the doctrine recognizes incidental functions by one organ without encroaching on essential functions of another.
  - However, there's a risk of encroachment leading to power struggle, undermining the principles of separation of powers.

JUDICIAL PRONOUNCEMENT ON SEPARATION OF POWERS

Kesavananda Bharati and ors v. State of Kerala

Apex court held that the amending power of the Parliament is subject to the **basic features** of the Constitution. So, any amendment violating the basic features will be declared unconstitutional.

I.R. Coelho v. State of Tamil Nadu

Doctrine of basic structure as propounded in the above-mentioned case and the Ninth schedule grant blanket protection to certain legislations from **judicial review** is violative of this doctrine.

Ram Jawaya Kapoor V State of Punjab

The court held that the Indian Constitution has **not indeed recognized the doctrine of separation of powers** in its absolute rigidity but the functions of the different parts or branches of the government have been sufficiently differentiated.

P Kannadasan V State of Tamil Nadu

The court held, "the Constitution has invested the **Constitutional Courts with the power to invalidate laws made by Parliament** and the state legislatures transgressing Constitutional limitations.

Golak Nath v. State of Punjab

It was observed that the three organs of the government are expected to exercise their functions within their limits and keeping in mind certain encroachments assigned by the constitution.

Kartar Singh v. State of Punjab

Court stated, "it's the function of the legislature to make the law, the executive to implement the law and the judiciary to interpret the law within the limits set down by the Constitution."

Affordable And Accessible Justice

What is it?

In **Anita Kushwaha V. Pushpa Sadan (2016)**, the Supreme Court held unambiguously that "life" includes physical as well as bundle of rights that also means right to access justice.

It includes Four Components

Effectiveness of adjudicatory mechanism	Speedy adjudication
Reasonable accessibility in terms of distance	Affordability of the mechanism

What steps can be taken?

- **Standardised and Regulated fees of Lawyers**
- **Establishing National Judicial Infrastructure Corporation (NJIC)**
- **Promoting Alternative dispute resolution (ADR)**
- **Promoting Digital Infrastructure**

What is need of it?

Affordable legal representation
Higher fees of top lawyers of Supreme Court and Higher Court reduces affordability

Addition to the court fees
spend nearly 25 per cent above the court fees.

Lack of awareness
Only 12 lakh persons benefited in around 80% of population under Free legal Aid

Low Budgetary allocation
Average spending on the judiciary was a measly 0.08 percent of GDP between 2011-2016

Way Forward

- **Promote proper checks and balances** between various institutions**.**
- **Timelines:** In **PLR Projects Ltd v. Mahanadi Coalfields Pvt Ltd (2021) case**, Supreme Court stated that recommendations by the Collegium must be cleared by the Centre within 3-4 weeks to avoid any deadlock.
- **Promoting Constitutional supremacy** by focusing welfare of the citizens.

Related News

National Judicial Commission (NJC) Bill 2022

- **Recently,** private member bill National Judicial Commission (NJC) Bill 2022 was introduced in the Rajya Sabha.
- NJC Bill 2022 aims **to regulate the appointment of judges to the High Courts and the Supreme Court** through the National Judicial Commission.
- Bill seeks to regulate the procedure to be followed by the NJC:
  - **for recommending persons for appointment** as the Chief Justice of India and other Judges of the Supreme Court and Chief Justices and other Judges of High Courts
  - **for their transfers** and **to lay down judicial standards** and provide for accountability of Judges,
  - **establish credible and expedient mechanism for investigating** into individual complaints for misbehavior or incapacity of a judge of the Supreme Court or of a High Court
  - **for the presentation of an address by Parliament to the President in relation** to proceeding for removal of a Judge.

1.2. FEDERALISM: UNIQUE STATUS OF DELHI

Why in News?

In recent times tussle is going on between UTs and Centre and due to overlapping of functions affecting routine administrative work in UTs.

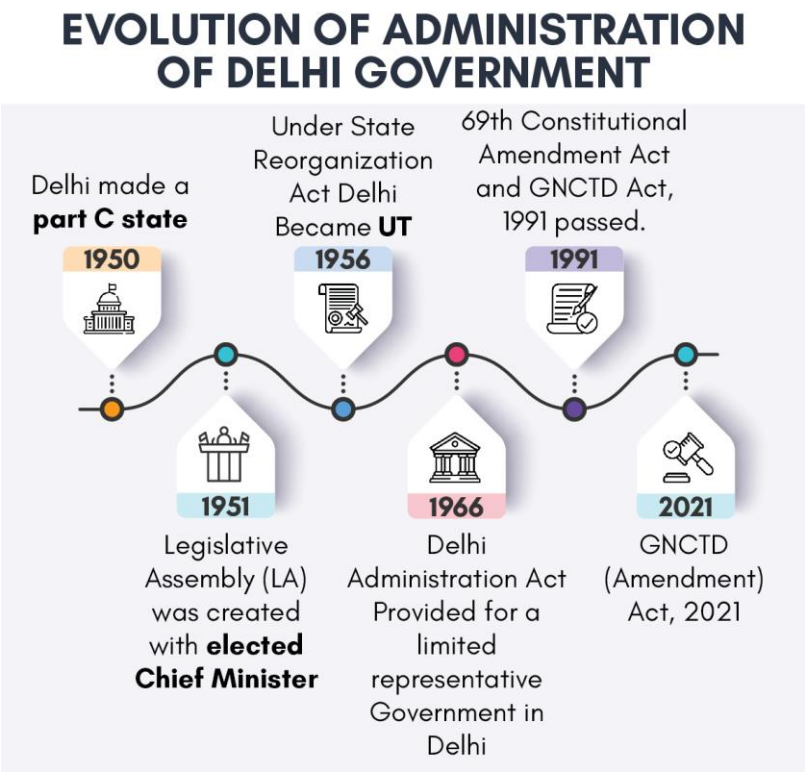
More about News

- In Supreme Court, one case is going on the tussle between the Delhi government and the Centre over administrative control of postings and transfers of **civil servants belonging to All India Services serving in Delhi.**
- The central government stated that a Union Territory is nothing but an extension of the Union (of India).

Present Status of Delhi as UT

- The **69th Amendment of the Constitution in 1991** gave the National Capital of Delhi special status with its own democratically elected government and legislative assembly.
  - Insertion of **new Articles 239AA and 239AB** after Article 239A of the Constitution.
  - The Legislative Assembly shall have power to enumerate anything in the **State List or in the Concurrent List** in so far as any such matter is applicable to Union territories.
    - ✓ Except matters with respect to Entries 1, 2 and 18 of the State List and Entries 64, 65 and 66 of that List in so far as they relate to the said Entries 1, 2 and 18.
  - Provided that **in the case of difference of opinion between the Lieutenant Governor (L-G) and his Ministers on any matter**, the Lieutenant Governor shall refer it to the President for decision and act according to the decision given thereon by the President.
  - **Public order, Police and Land** in the NCT of Delhi fall within the domain of Union Government.
- **Government of National Capital Territory of Delhi (Amendment) Act (GNCTD) 2021**
  - The term "**government**" in any law made by the Legislative Assembly shall mean the L-G.
  - The **L-G's opinion** shall be obtained before the government takes any executive action based on decisions taken by the Cabinet or any individual ministers.

- The L-G will not assent to and pass on to the President for consideration any Bill which "incidentally covers any of the matters **which falls outside the purview of the powers conferred on the Legislative Assembly**".



Issues with current setup

- **Against the privilege of legislature:** Framing the rules to conduct its proceedings is thus a part of the privilege each house of a legislature enjoys.
- **No accountability of L-G action:** No rule shall be made by the assembly to conduct inquiries in relation to administrative decisions. Executive accountability is the essence of the parliamentary system of government, which is a part of the **basic structure** of the constitution.
- **Undermining the elected government:** The L-G, who will be the government, is under no obligation to implement any law passed by the assembly or carry out the directions of the house as he is not responsible to the assembly.
- **Concentration of Power:** As stated in GNCTD Act, The term "government" in any law made by the Legislative Assembly shall mean the L-G.
    - **Article 239AB provides for president's rule in Delhi** when the administration of the territory cannot be carried on in accordance with the provisions of Article 239AA. President's rule is imposed on a report from the LG. If the LG IS THE GOVERNMENT, will she or he have to make a report against themselves.
- **Against Co-operative Federalism:** The Act not only negates cooperative federalism but also upturns the fundamental principles laid down by the **Supreme Court in Government of NCT Delhi vs Union of India case (2018).**
- **Control over Services Department**: Governance has always been a contentious issue since Delhi is not a full state and the Services department comes under the L-G.

Difference between LG power in Delhi and Puducherry

- The LG of Delhi enjoys greater powers than the LG of Puducherry.
    - The LG of Delhi has "**Executive Functions**" that allow him to exercise his powers in matters connected to "**public order, police and land** "in consultation with the Chief Minister, if it is so provided under any order issued by the President under **Article 239** of the Constitution".
- LG of Delhi is also guided by the **GNCTD (Amendment) Act 2021**, and the Transaction of Business of the Government of National Capital Territory of Delhi Rules, 1993, the LG of Puducherry is guided mostly by the Government of Union Territories Act, 1963.
- **Articles 239 and 239AA** of the Constitution, as well as the **GNCTD (Amendment) Act 2021**, clearly underline that Delhi is a UT, where the Centre has a much more prominent role than in Puducherry.

Way forward

- **Collaborative structure:** The apex court had rightly concluded that the scheme set out in the Constitution and the Government of National Capital Territory of Delhi Act, 1991, envisages a collaborative structure that can be worked only through constitutional trust.
- **Adopting Fine mixed Balance:** Considering special status of the Delhi and fundamental concerns as Delhi being the National Capital.
- **Reducing politicization:** Not politicizing **i**ssue as a struggle for power between two political parties as it is ultimately an attack on the ideals of **representative governance**.
- **Clear interpretation:** A clear interpretation of the existing laws, in the larger interest of representative democracy, would suffice, as has been established.

To know more about Federalism, please refer to our following Weekly Focus Document.

Sui Generis Indian Federalism: Evolving Dynamics and Emerging Concerns	The founding fathers of the Indian Constitution envisioned a unique federal structure to serve distinctive needs of the diverse nation. A well-designed and well-functioning system of federal governance, by virtue of its manifold benefits, plays a key role in promoting the stability and prosperity of any nation. However, the working of the Indian federation during the past decades clearly depicts friction in the relations between the Centre and the States. Cataloguing the evolving nature and significance of India's federal structure, this document highlights emerging threats and changes impacting it. Moving forward, it prescribes manoeuvres to strengthen the fabric of Indian Federalism which preserves its unique characteristics.	

1.3. ELECTIONS & TECHNOLOGY

Why in News?

Recently, Election Commission of India (ECI) hosted the 2nd International Conference on the theme '**Use of Technology and Elections Integrity**' at New Delhi.

More About News

- ECI is leading the Cohort on Elections Integrity which was established as a **follow up to the 'Summit for Democracy'.**
  - 'Summit for Democracy', was an **initiative of US President** and hosted in December 2021.
- **As part of the 'Summit for Democracy' Year of Action, India**, through the ECI, is leading the 'Democracy Cohort on

About Elections & Technology

- The **introduction of information and communications technologies (ICT)** into the electoral process is generating both interest and concern among voters, as well as practitioners, across the globe.
- Most electoral management bodies (EMBs) around the world **use new technologies with the aim of improving the electoral process.**

ICT ACTIVITIES MAY BE CLASSIFIED AS FOLLOW AT VARIOUS LEVELS

Pre-Election activities

- **Electoral Rolls Management System:**
  - **Automating ECI field functions** through standardized application and data formats.
  - **Digitization of Electoral Rolls and Electors Photo Identification Card (EPIC).**
- **Drafting of Polling Personnel/ Party, Randomization of EVMs and Micro Observers**

Election Day Activities

- **Communication Plan for Election Tracking (ComET)**
  - **Implemented to computerize communication details** of all the polling stations of the country.
  - **ComET was first implemented in Madhya Pradesh** during 2008 State Assembly Elections.
- **Web casting/ Video streaming of Poll Proceedings from Polling stations.**
  - **During the Lok Sabha elections 2009 for the first time Tamil Nadu did the Live-Recording.**

Post -Election

- **Results/ Trends dissemination:**
  - **Dissemination of election results to the stake holders across the globe** can be done using standardized and optimized reports for maximum throughput.

Other activities related to Elections

- **Use of technology in other activities such as** Design and hosting of CEO website, Hosting of Electoral Rolls, Website for redressal of Public Grievances, Customized Web Portal, etc.

Election Integrity' in sharing its knowledge, technical expertise, and experiences with other democracies around the world.

- ECI, as its lead, has proposed to also provide training and capacity building programmes to Election Management Bodies (EMBs) across the world and **provide technical consultancy as per needs of other EMBs.**

Significance of Technology in Elections

- **Reduced electoral fraud:** Technology provides an enabling environment for the release of results to the public, earlier and in a more detailed form.
  - This transparency **deters fraudulent activities, ensuring a fair and democratic election process.**
- **Help to improve the accuracy of voters' register**: For example in Brazil, electronic voter registration system was created to prevent voters from registering in more than one local registry.
- **Improve the accessibility:** For example India introduced Electronically Transmitted Postal Ballot System (ETPBS), which is the one-way electronic transmission of the Postal ballots to the Service Voters.
  - This has made voting **more accessible to service voters who may not be physically present in their registered constituency.**
- **Improve Efficiency:** Efficiency gains in election office management processes through technology improve services for all voters which includes the coordination of employees activities in election offices, etc**.**
- **Improve the voting percentage:** Internet is especially useful for voter outreach especially for younger voters who receive the majority of their information on line.
- **Disseminate election-related information:** Agencies can disseminate information through Web sites, eNewsletters, social media, podcasts, etc.

Challenges in use of technology in elections

- **Use of Deep Fake:** This disruptive elements attempt to alter public perception and mislead the user by repetitively presenting the deep fakes as fact.
  - Example –Former Chief Election Commissioner, T S Krishnamurthy deep fake video circulated on EVM hacking just before the election.
- **Voters Manipulation**: For example **Cambridge Analytica** worked for Donald Trump's presidential campaign in 2016 and gained access to the personal information from millions of Facebook accounts for the purposes of voter profiling and targeting.
- **Cybersecurity risks**: Cybersecurity risks pose a significant threat to the electoral process. **For example**, allegations of Russian interference in the 2016 USA elections through hacking into computers that contain vote data.
- **Universality accessible of technologies:** Technologies are universally accessible at low or no cost.
  - That means that these tools could be **employed and manipulated by anyone within or outside the country to target protected groups** and undermine the sanctity of the democracy.
- **Lack of awareness of Voters:** Voters have very little control over how they have been profiled by social media and how that impact the content they see on their feeds, or how what they see compares with other users.

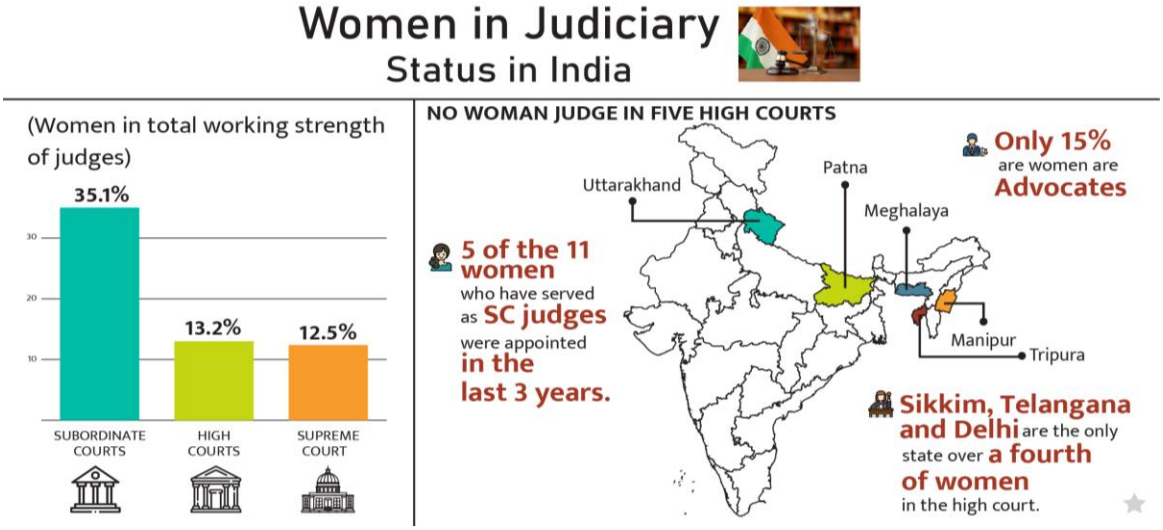
Way Forward

- **Voter Protections in the Online Space:** Data localization helps to extend voter protections to the online space. By requiring that voter data be stored within the country, it becomes more difficult for foreign actors to interfere in the electoral process.
- **Accountability mechanisms for big tech companies**: Regulators should order them to stop sharing data with their parent companies, as has been done in countries like the UK.
- **Recognition and Punishment of Cyber Interference: Domestic law** needs to recognize and punish cyber interference in elections.
  - This will deter malicious actors from attempting to interfere in the electoral process and help ensure fair and free elections.
- **Dedicated cybersecurity unit in Election conducting institution:** They should establish dedicated cybersecurity units to protect against cyber threats. These units should train officers and political staffers in basic cyber hygiene, such as updating passwords and recognizing phishing attempts.

1.4. WOMEN IN JUDICIARY

Why in News?

Recently, the Supreme Court had an all-woman bench which was only the third time in its history.



More about News

- **Only three times (2013, 2018, 2022) in history of the Supreme Court** all women benches were formed.
- This third all women benches **heard transfer petitions involving matrimonial disputes and bail matters.**
- **Supreme court** currently has only **3 women judges,** and the country will get its first woman Chief Justice only in 2027.

Significance of Women in Judiciary

- **Diversity**: There is a need to bring diversity in judiciary especially in the case women representation.
  - This makes the gender perspective relevant because **women judges bring a different set of experiences and influences** which then shape their thinking and is reflected in their reasoning in the judgments.
- **Building Public Trust:** Women judges can help enhance the legitimacy of courts and increase public trust in the judiciary.
  - This sends a powerful signal that the courts are open and accessible to those seeking justice.
- **Modernization and reforms:** Changing the long-established demographics of a court can make the institution more amenable to consider itself in a new light, and potentially lead to further modernization and reform.
- **Visibility of Women:** Women in the judiciary bring with them more visibility and create a sense of belongingness among the women and other gender.
  - This can help ensure that the justice system is more inclusive and representative of society as a whole.

Reasons for Low Representation in Women Judiciary

- **Social Factors**: The long and inflexible work hours in law, combined with familial responsibilities, force many women to drop out of practice and they fail to meet the requirement of continuous practice.
  - **The most formative and determinative years of a woman's career** are also the best years for raising a family.
  - Some give up practice altogether, **others opt for part-time or more stable options**.
  - The system **loses out not just on diversity, but the ability and quality** that these women could bring to the law and to justice delivery.
- **Eligibility criteria for entrance exams**: A major barrier to women's recruitment as district judges is the eligibility criteria to take the entrance exams.
  - Lawyers need to have **7 years of continuous legal practice and be in the age bracket of 35-45.**
- **Gender disparity in the judiciary**: Except for 1 woman judge till now, no woman judge has made it to the SC collegium of top three judges that oversees appointments in HCs.
  - There is also **low elevation of women advocates from Bar to the Bench.**

Way Forward

- **Conducive workplace** when men at all levels will participate as important stakeholders in ensuring conducive conditions for women in the workplace and women's problems be treated as all gender problems.

- **Judicial benches** must encourage young female lawyers' participation in the court to break the myth or perception against female lawyers abilities and capabilities.
- **Affirmative action at the bar** by ensuring more women as senior advocates as it improves more women lawyers participation.
- **Reservation in the higher judiciary** up to 50% as suggested by the ex-CJI.
- **Higher rate of promotion** of women judges from Lower courts to higher courts.
- **Reorient education system in such a way** that it teaches work-life balance such as Child-raising and domestic responsibilities must be meaningfully shared by both men and women.

1.5. ASPIRATIONAL BLOCK PROGRAMME (ABP)

Why in news?

Prime Minister launched the government's Aspirational Block Programme (ABP), which is aimed at **improving performance of blocks lagging on various development parameters**.

More on news

- It was first announced in Union Budget 2022-23 and has been **mentioned in Union Budget 2023-24.**
- It is based on the model of **Aspirational District Programme (ADP)** that was **launched in 2018 and covers 112 districts** across the country.

Features of Aspirational Block Programme (ABP)

- **Coverage:** The programme has been launched for **covering 500 blocks** across 31 states and Union Territories initially.
  - Over **half of these blocks are in 6 states**—Uttar Pradesh, Bihar, Madhya Pradesh, Jharkhand, Odisha and West Bengal (in decreasing order). However, states can add more blocks to the programme later.
- **Aim:** It mainly aims at **saturation of essential government services across multiple domains** such as health, nutrition, education, agriculture, water resources, financial inclusion, skill development, and basic infrastructure.
- **Key indicators:** Government has identified **15 key socio-economic indicators** (KSIs) under such multiple domains.
  - States have the **flexibility to include additional state-specific KSIs** to address local challenges.
- **Periodic rankings:** The KSIs will be **tracked on a real-time basis and periodic rankings** will be released across key thematic areas to foster a healthy and dynamic competition among the blocks.
- **Focus of programme:** This transformational programme focuses on **improving governance** to enhance the quality of life of citizens in the most difficult and underdeveloped blocks of India by **converging existing schemes**, defining outcomes, and monitoring them on a constant basis.

Why focus on Block Development?

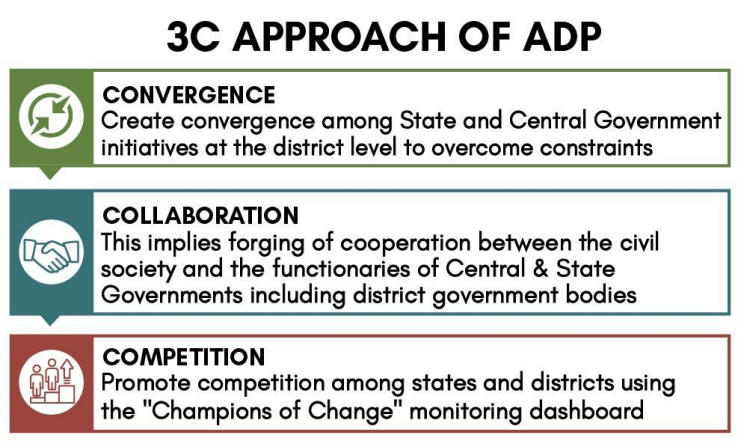
In India, Block based development was **introduced in 1952** under the **Community Development Programme** for holistic development of blocks. Since then, they have assumed importance because they enable-

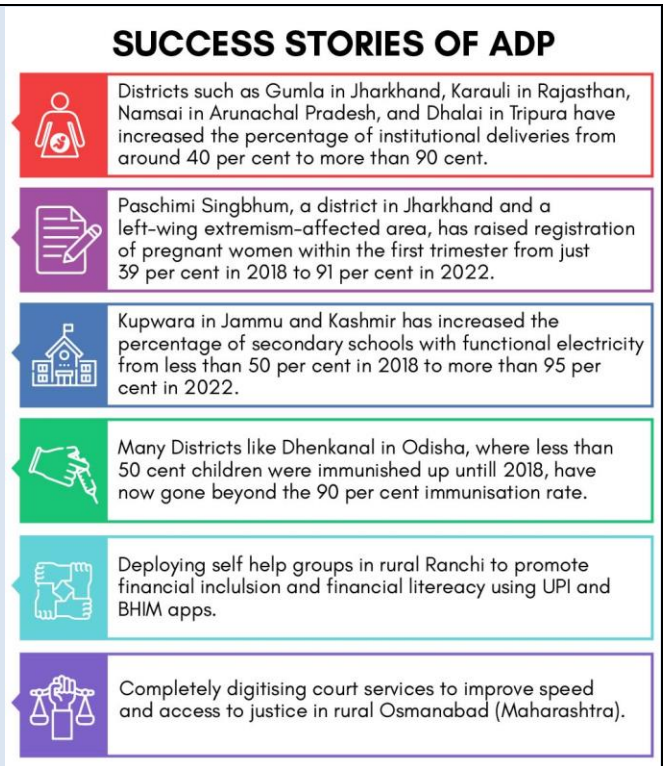
- **Inclusive development:** Social and economic infrastructure at block level ensures that a larger than **proportionate share of development reaches the marginalised and vulnerable sections** of the population.
- **Locally adaptable planning:** As an administrative and monitoring unit, the block ensures that a **"one-size-fits-all" approach is not applied** to every part of the country.
  - The block administration can **adopt customised approaches** towards improving socioeconomic indicators.
- **Grassroot participation:** This method also **brings the decision-making process closer to the grass roots**.
- **Convergence and achievement of target:** Convergence of several line departments of the block administration bridge critical administrative gaps in sustainable development. This can result in **fulfilment of critical targets under SDGs**.

Aspirational District Programme

- **Aim:** Launched in January 2018, ADP aims to quickly and effectively **transform 112 most under-developed districts** across 26 states and 1 union territory across the country.
- **Focus of programme:** With **States as the main drivers**, this program focuses on the **strength of each district, identifying low-hanging fruits** for immediate improvement and **measuring progress by ranking** districts on a monthly basis.

- **Key indicators:** ADP focuses on 49 Key Performance Indicators (KPIs) under **5 broad socio-economic themes - Health & Nutrition, Education, Agriculture & Water Resources, Financial Inclusion & Skill Development and Infrastructure.**
  - **Delta Ranking** captures the incremental change in district rankings based on these KPIs.
  - **Baseline ranking** captures the district performance compared to baseline year.





1.6. NEWS IN SHORTS

1.6.1. PUBLIC SERVICE CONTENT

- Advisory to telecast "Public service content" was recently released by **Ministry of Information and Broadcasting**.
- The guidelines were stipulated in the **new uplinking-downlinking rules** prescribed by the ministry on November 9 last year.
  - The fresh advisory was issued after consultations with private satellite television channels and their associations.
- **Key features**

Content	• Channel will undertake public service broadcasting for a **minimum period of 30 minutes** in a day on themes of national importance and of social relevance like **education, welfare of women, protection of environment and of cultural heritage etc.** • Broadcasters have the **liberty to modulate their content.** • **Content can be shared between the Broadcasters**.
Accounting of Timing	• Channels will be required to air national interest content for **15 hours every month.** • Content **need not be of 30 minutes at a stretch** it can be split over smaller time slots, but can't be done from midnight to 6 am.

Reporting	• **Voluntary compliance and self-certification** would be the guiding principles.
	• Broadcasters shall submit a monthly report on the **Broadcast Seva Portal** by the 7th of the following month.
	• **Exemptions**
	  ○ Foreign channels, downlinking in India (in languages **other than those specified in the Eighth schedule** of Constitution).
	  ○ Channels broadcasting predominantly (more than 12 hours) sports and devotional, spiritual, yoga content will be exempt from furnishing the monthly reports.

Identification	• **Electronic Media Monitoring Centre** under Ministry shall keep the record of the content telecast for a period of 90 days.

1.6.2. RULE OF LAW INDEX

- After improvement in World Bank's Ease of Doing Business rankings, now **government has turned its attention to scoring better in Rule of Law Index.**
- Index is **published by the World Justice Project (WJP), a** US based civil society group.
  - **In 2022, India was ranked 77th out of 140** countries.

- **Eight factors that the Rule of Law Index measures:** Constraint on government powers, Absence of corruption, Open government, Fundamental rights, Order and security, Regulatory enforcement, Civil justice, Criminal justice.

1.6.3. FREE SPEECH OF MINISTERS

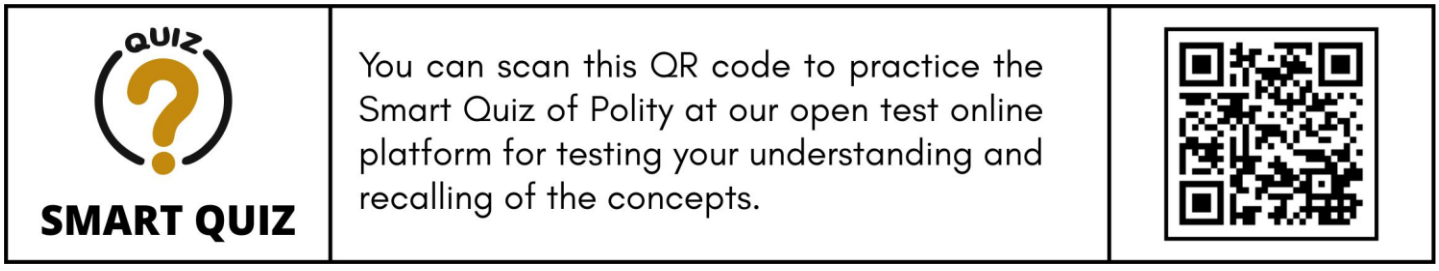
- Answering a reference made to it regarding **extent of Freedom of Speech and Expression** available to public functionaries, constitutional bench of SC held that:
  - **Right of free speech and expression** , guaranteed under Article 19 (1) (a), **can't be curbed by additional grounds** other than those already laid down in Article 19 (2).
  - **A statement made by a minister,** even in official capacity, **cannot be attributed vicariously to government by invoking** principle of **collective responsibility.**
    - ✓ **Under Article 75 (3) and 164 (2)**, Council of Ministers (CoM) is collectively responsible to House of People and Legislative Assembly of State respectively.
    - ✓ SC stated that **collective responsibility flows from CoM to individual ministers, not on reverse,** namely, from individual Ministers to CoM.
  - A **fundamental right under Article 19, 21 can be enforced even against persons other than state** or its instrumentalities.
  - **A mere statement made by a minister,** inconsistent with rights of a citizen, **may not become actionable as constitutional tort.**
    - ✓ But **if leads to an act of omission or commission** by a public official **then it is a constitutional tort**.
    - ✓ A 'constitutional tort' is a **violation of one's constitutional rights**, particularly fundamental rights, **by an agent of the government**, acting in his/her official capacity. A **court of law can award monetary compensation** to the victim in such a case.

1.6.4. ELECTRONIC SUPREME COURT REPORTS (E-SCR) PROJECT

- Chief Justice of India announced the launch of e-SCR project to provide access to judgements to common public.
- E-SCR is an initiative to **provide digital version of apex court's judgments** in manner as they are reported in **official law report 'Supreme Court Reports'.**
  - Entire gamut of judgments from inception of Supreme Court in 1950 till date would be **available freely to lawyers and law students**.
  - These judgments will be **accessible on Supreme Court's website, mobile app** and on **National Judicial Data Grid's judgment portal.**

1.6.5. CHARGE SHEETS

- Supreme Court (SC) held that **charge sheet** by probing agency is not a **"public document".**
  - It stated that putting it in **public domain** will **violate the rights of victim, accused and investigating agencies.**
- Charge sheet refers to a **formal police record** showing the **names of each person brought into custody**, the **nature of the accusations**, and the **identity of the accusers.**
- **First Information Report (FIR)** is a **written document** prepared by the police when they receive information **about the commission of a cognizable offence.**
  - Under **Youth Bar Association Case** (2016) the SC issued directions to the police **to upload the FIRs in website within 24** hours except in sensitive cases like rape.



2. INTERNATIONAL RELATIONS

2.1. INDIA AND GLOBAL SOUTH

Why in news?

A special virtual summit, the **Voice of Global South summit** was hosted by India.

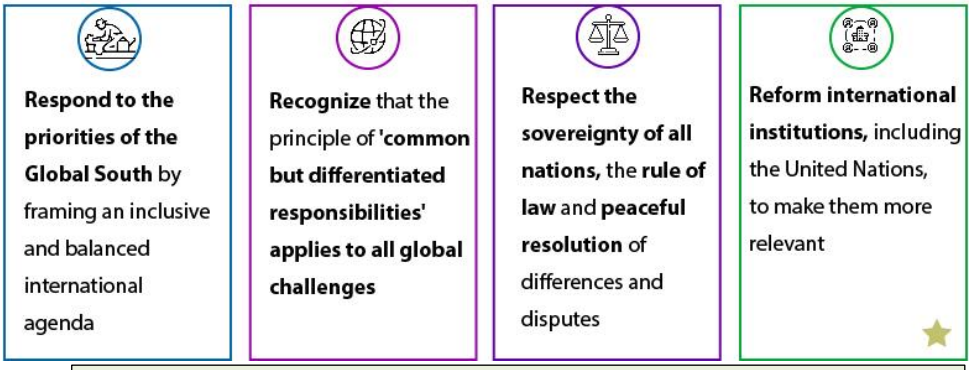
More on News

- **India's Presidency of G-20** provides it opportunity to **share the ideas and aspiration of the countries which are not represented in the G-20.**
  - **The Agenda of G20 Presidency** will be shaped in consultation with not just **G20 partners but also with the Global South.**
  - It reflected the India's philosophy of **Vasudhaiva Kutumbakam.**
- More than 120 nations participated in it.
- The Summit called for a **global agenda of 'Respond, Recognize, Respect, and Reform' to re-energise the world.**

Initiatives launched in the Summit

- **Arogya Maitri (Wellness Friendship):** India will provide essential medical supplies to any developing country affected by natural disasters or humanitarian crisis.
- **Global South Center of Excellence**: It will undertake research on development solutions or best-practices of any of Global South countries, which can be scaled and implemented in other members of the Global South.
- **Global South Science and Technology Initiative**: India will share its expertise with other developing nations.
- **Global South Young Diplomats Forum**: It will connect youthful officers of foreign ministries.
- **Global South Scholarships**: It will provide scholarship to students of developing countries to pursue higher education in India.

Global Agenda of 'Respond, Recognize, Respect, and Reform' to re-energise the World



Challenges in Engaging with Global South

- **Uniting the Global South**: Representing the presumed collective interests of the Global is difficult due to the deep economic differentiation and sharp political divisions among the developing nations.
  - It is not a coherent group and does not have a single shared agenda.
- **Domestic Issues**: India is itself facing many developmental challenges despite having impressive aggregate GDP and growing economic, industrial, and technological capabilities. Rising population is putting immense pressure on resources.
- **Past Experiences**: Groups like Non-Aligned Movement (NAM), G-77 etc. are not much effective in raising the voice of developing countries.
- **Western Hegemony in Finance**: India is not much financially strong to fulfil the developmental need of the developing countries.

Initiatives to Engage with Global South

Global

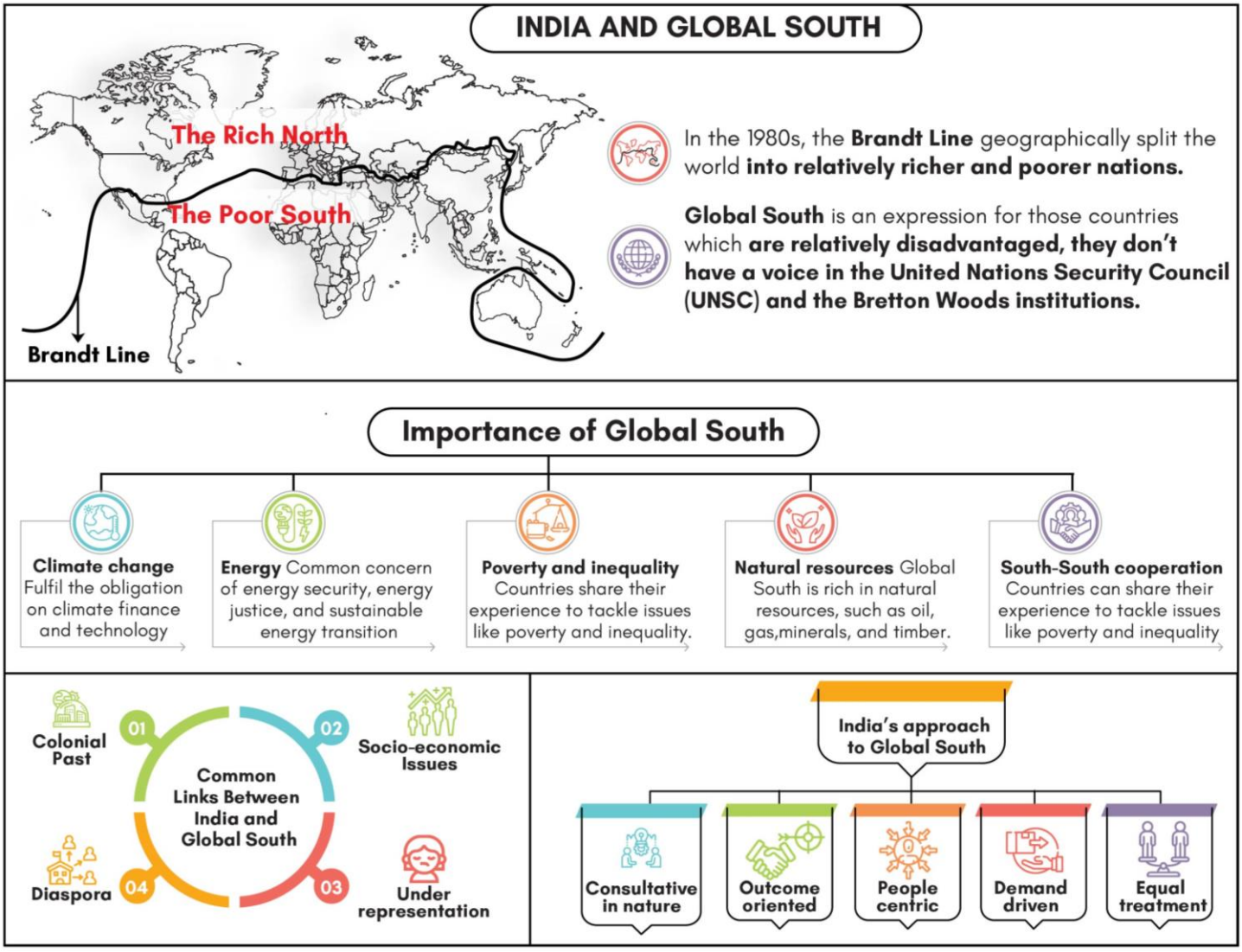
- **Non-Aligned Movement (NAM):** It is a group of mainly third world countries from **Africa, Asia, Latin America and other regions of the world.** It was formally established in **1961. Socio-economic development, restructuring of the international economic system, international cooperation on an equal footing etc.** were main objectives of this group.
- **Group of 77 (G-77):** It was established on **15 June 1964** by **seventy-seven developing countries.** It provides the means for the countries of the South to articulate and promote their **collective economic interests and enhance their joint negotiating capacity on all major international economic issues within the United Nations system**, and promote **South-South cooperation for development.**

India

- **Vaccine Maitri Programme:** In order to deal with the Covid-19 crisis, India supplied vaccine through its Vaccine Maitri Programme.
- **Humanitarian Assistance and Disaster Relief (HADR):** India offers HADR support to other developing countries.
- **Indian Technical and Economic Cooperation Programme (1964):** It offers financial as well as technological assistance to various mutually agreed projects of development to poor developing countries.

- Western countries like USA, France etc. take leverage of their financial resources.

- **Non-inclusion**: Countries like China, Pakistan etc. were not invited to Voice of Global South summit, hence, showing rift in Global South.



Enhancing Engagement with Global South

- **Cooperation**: Summits should be organised on regular time period to enhance cooperation with the Global South.
- **Mutual Trust**: Cultural exchange programmes and confidence building measures will help in enhancing mutual trust.
- **Developments Projects**: With the help of like-minded country India can implement developments projects in other global south countries.
- **Promoting Interest**: The interest of the global south countries needs to be given priority by India in forums like G-20 etc.

Conclusion

The goal of India in 2023 is to represent the Global South declaring "your voice is India's voice. Your priorities are India's priorities". In order to emerge as a Vishwa Guru (Global Leader) it is important for India to promote the interest of the other developing countries. Close cooperation with Global South will help India in shaping the new global order.

Key terms related to Global South

- **North-South Debate** is a cold war between **developed North** and **developing and underdeveloped South.** They have different perspective on issues such as energy, climate change etc.
  - **At the international forums such as UNFCCC (United Nations Framework Convention on Climate Change**), the debate between North and South can be witnessed.

- Similarly in World Trade Organisation (WTO) the North South debate can be witnessed over the issue of the subsidies, etc.
- **South-South Cooperation:** South-South Cooperation is a broad framework for **collaboration and exchange** among countries of the **South in the political, economic, social, cultural, environmental, and technical domains.**
  - **The Buenos Aires Plan of Action for Promoting and Implementing Technical Cooperation among Developing Countries (BAPA)** was adopted by **138 UN Member States in Argentina, in, 1978.**
- **Triangular cooperation:** It involves Southern-driven partnerships between two or more developing countries supported by a developed country(ies)/or multilateral organization(s) to implement development cooperation programmes and projects.
  - India can play significant in linking North and South.

Related News

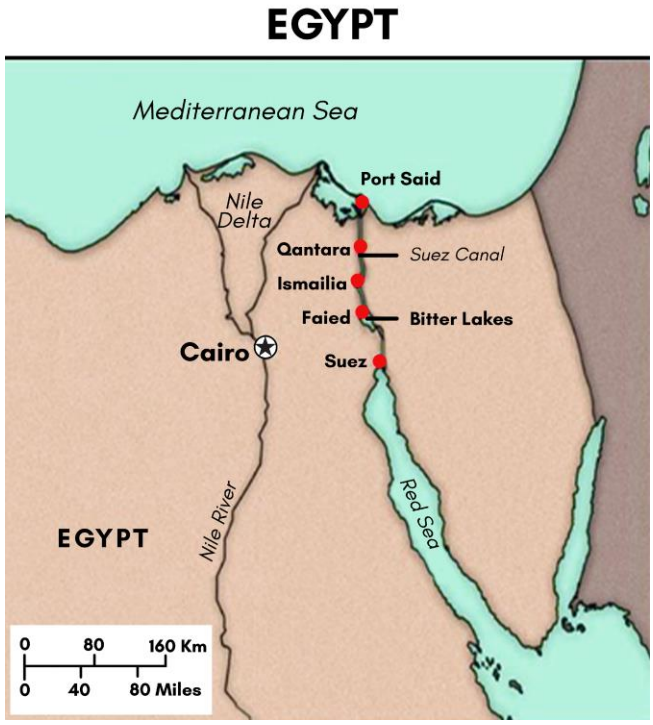
Bhopal Declaration

- It was **released after Think20 (T20) meeting**, official engagement **group of G20 bringing together leading think tanks and research centers** worldwide.
- **Key highlights of Bhopal Declaration**
  - Appeal to all stakeholders to **focus more on inclusive development care** for welfare of every section of society in comparison to GDP.
  - **Encourage** model of **development led by women**.
  - **Bridge the gap between North and South**
  - **Promoting traditional medicine systems** like AYUSH

2.2. INDIA-EGYPT

Why in News?

Recently, Egyptian President was on a visit to India from 24 to 26 January 2023 as he was '**chief guest'** for the **74th Republic Day celebrations** held in New Delhi.



Recent development in relation

- India and Egypt agreed to elevate their bilateral ties to "**Strategic Partnership**" covering political, security, defence, energy and economic aspects.
- Commemorative **Postal Stamps** to mark **75 years** of establishment of **India-Egypt relations** were also exchanged between the two sides.
- As the **President of G20**, India has invited **Egypt as a guest country** for the summit to be held in 2023.

Significance of Egypt for India

- **Geopolitical**: Egypt is a significant actor in West Asia and an influential voice in the Arab world.
  - Egypt holds a role of **significant partner to deepen India's tie with Arab nations as part of the renewed Indian focus on West Asia.**
  - Egypt accords **great importance to multilateral forums that comprise developing countries**, such as **Non-Aligned Movement** (**NAM**) and the G77 considering their contributions to south –south cooperation.
- **Geostrategic:** Egypt is strategically located, making it a **hub for trade routes between Europe, Africa, and Asia.**
  - Egypt connects the Mediterranean with the Red Sea through the Suez Canal as it is critical for India as part of **International trade systems**.
  - Approximately **12 per cent of global trade traverses through the Suez Canal.**
- **Economic:** Bilateral trade registered a significant growth of 75 percent in 2021-22 to reach a figure of $7.26 billion from around $4 billion.
  - Egypt, one of the largest importers of wheat from Russia and Ukraine, had procured wheat from India after conflict broke out between the two countries.

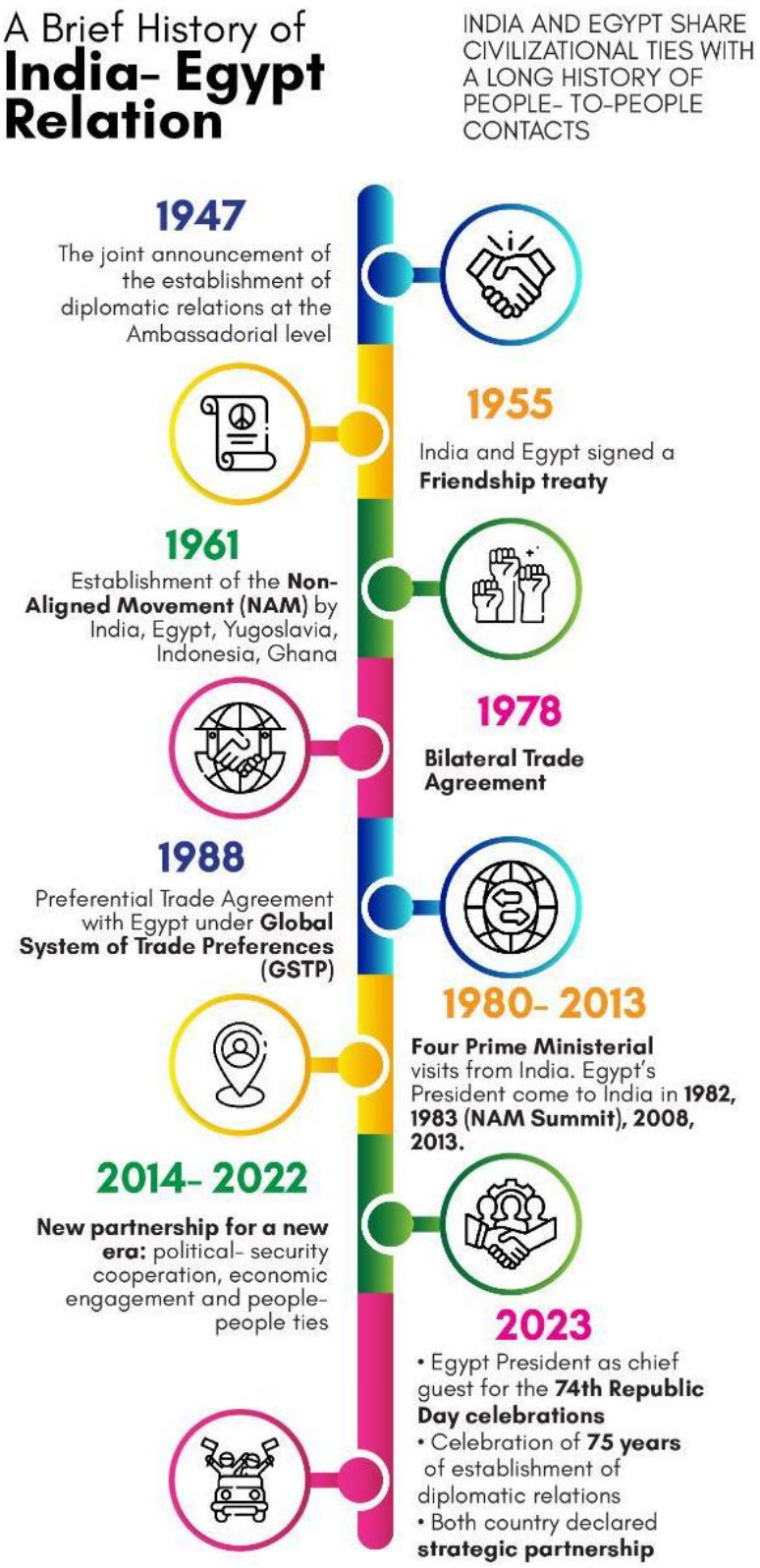
- **Energy Security**: Egypt is a significant player in the energy sector, and India is a major importer of oil and gas. India has been working closely with Egypt to secure its energy needs, and both countries have signed several agreements in this regard.
- **Boost Defence Industries**: Egypt is interested in procuring defence equipment from India, which includes LCA Tejas, missiles like Akash, DRDO's Smart Anti-Airfield Weapon, and radars.
- **Terrorism:** The two countries have been sharing intelligence and conducting joint operations to tackle terrorism.

Challenges in development of India-Egypt Relation

- **Economic crisis:** Egypt is facing economic crisis and battling a spike in inflation, which make investment in the country less lucrative.
    - Egypt has also approached the IMF for the fourth time in six years for a bailout.
- **Presence of China**: China sees the Suez Canal as a vital part of its Belt and Road and Maritime Silk Road projects and have investment.
    - China's bilateral trade with Egypt is currently at $15 billion, double that of India's $7.26 billion in 2021-22
- **Human Right Violation**: For example in 2013, Egypt committed the Rabaa massacre, in which security forces killed over 800 peaceful protesters and India is stanch supporter of Human Rights in the World.
- **Political dynamics:** Changing Political dynamics of the Gulf region such as Abraham Accord, New Quad and India balancing out approach might have impact on it.

Suggestions to improve relations

- **Use of NAM:** India and Egypt can leverage the Non-Aligned Movement (NAM) to find common ground and reform international organizations such as the UNSC and the World Bank.
- **Collaboration with like-minded countries:** India can collaborate with like-minded countries, including Japan, to reduce the dominance of China and explore the Asia-Africa Growth Corridor (AAGC) model.



- **Utilizing India-Africa Forum:** India can utilize the India-Africa Forum to strengthen multilateral relations with Egypt.
- **People-to-people contact**: The two countries can foster closer ties through initiatives such as education, tourism, culture, and academic exchanges.

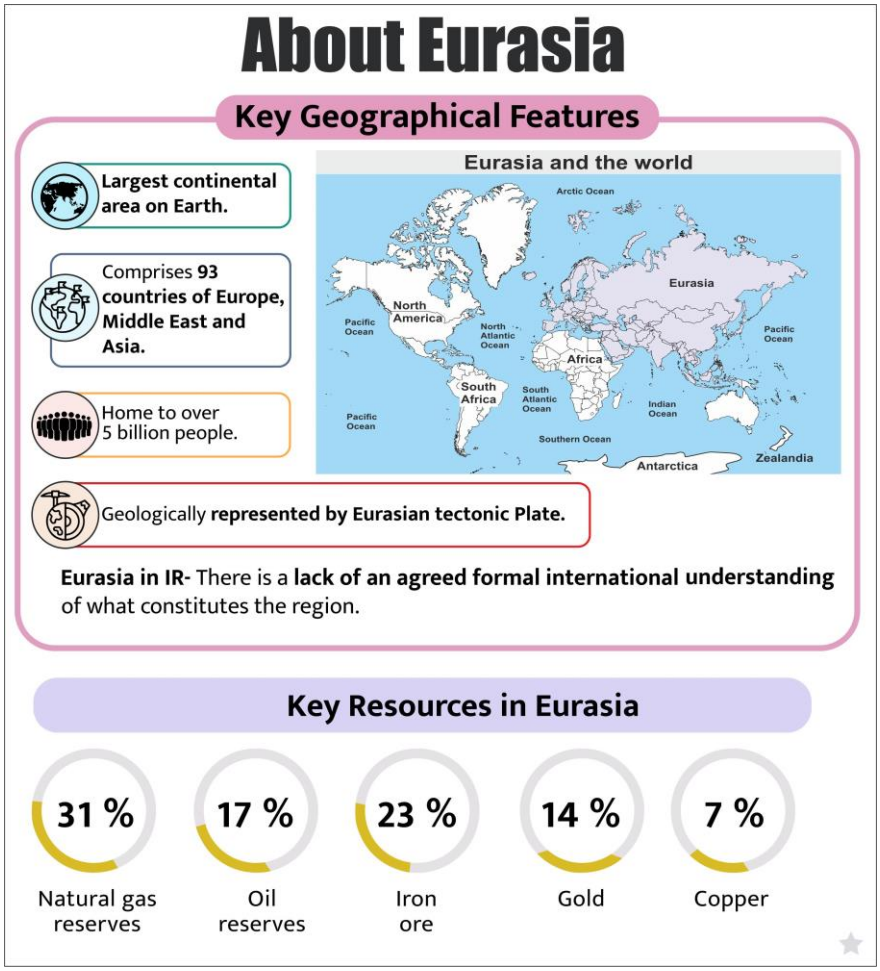
2.3. INDIA-EURASIA

Why in news?

Recently, **several countries** including Japan, South Korea, Australia etc. have **taken initiatives** suggesting a growing **focus over better relationship between European and Asian countries.**

About Eurasia

- Eurasia refers to the **largest continental area on Earth**, comprising **93 countries of Europe, Middle East and Asia** and is home to over 5 billion people.
- Eurasia region is **geographically represented by Eurasian tectonic Plate**, one of several large plates that cover our planet.
    - However, there is a **lack of an agreed international understanding** of what constitutes the region.
- **Resources:** Eurasia is one of the **most natural resource-rich regions** in the world:
    - 31 percent of its proven natural gas reserves,
    - 17 percent of oil reserves,
    - 23 percent of iron ore,
    - 14 percent of gold, and
    - 7 percent of copper.



Significance of Eurasia in present world order

- **China's assertiveness:** China with projects like BRI is striving for a great power status and thus has **increased engagement within Eurasia.**
- **Changing Geostrategic Alignments:** China-Russia relationship has been cemented by the **growing animosity between China and USA** as witnessed in defense exercise "**Maritime Cooperation**" in 2022.
    - For example, China and Russia signed declaration on "**Great Eurasian Partnership"** in 2015 aimed at **synchronizing BRI and Eurasian Economic Union (EEU).**

- **Regional alliances:** Russia and Iran have deepened diplomatic and economic relations due to sanctions imposed on them due to nuclear program and Ukraine war respectively.
    - A **potential China, Russia, Pakistan, Iran, and Turkey regional security arrangement is taking shape aimed to counter the Quad's growing influence**.

- **Countermeasure to Indo-Pacific Region:** Japan, Australia along with USA is confining them to the Indo- Pacific region. China and Russia as a countermeasure are developing Eurasia as a power block.

What are the challenges for India in Eurasian Region?

- **Delayed projects:** Most of the **INSTC projects (except for Azerbaijan and KTI i.e., Kazakhstan, Turkmenistan and Iran Railway Corridor)**, Chabahar Port, and Ashgabat Agreement transport corridor have **not received financing from the major global financial institutions** such as the World Bank, European Investment Bank etc.
- **Rise of China amidst sanctions:** China's increasing footprint through BRI initiative and bilateral ties between Russia-China especially after sanctions imposed on Russia due to Ukraine war pose a challenge for India.
    - The west sanctions on Iran and Russia have paved way for **China to become dominant in the region** as well as **slowed down the pace of Indian investment** in Chabahar port.
    - India also stopped oil imports from Iran. 2018-19 budgetary allocation for Chabahar was also reduced to zero in the revised allocation.
- **Regional turmoil:** Since the beginning of Eurozone crisis in 2009, EU has experienced a series of challenges like **influx of refugees, BREXIT, Covid pandemic, and the Russian invasion of Ukraine**.
- **Diplomatic challenge:** Balancing west (USA and NATO) and east (Russia) has posed a significant diplomatic challenge for India. With Eurasia's rising geo-political stature, this challenge might further get difficult for India.

Significance of Eurasia for India

- **Alternate to BRI:** INSTC (International North– South Transport Corridor) along with the **Ashgabat Agreement** (to enhance connectivity within the Eurasian region) in the long run and can act as a counter to opaque BRI.
- **Economic:** India is working towards joining the EEU to further its contacts with Eurasia. This will **give access to Indian goods to entire geographic space** through a single tariff, boosting exports and overall economic growth.
- **Social:** Central Asian e-network by India is an attempt to leverage its prowess in IT sector by linking India's top hospitals and educational institutions with hubs in the region.
    - It will **bridge digital divide and bolster their capacity in areas of health and education.**
- **Alternate to Suez Canal:** Euro-Asian inland transport links provides an alternate to the congested Suez Canal to boost the resilience of the inter-continental trade flows.

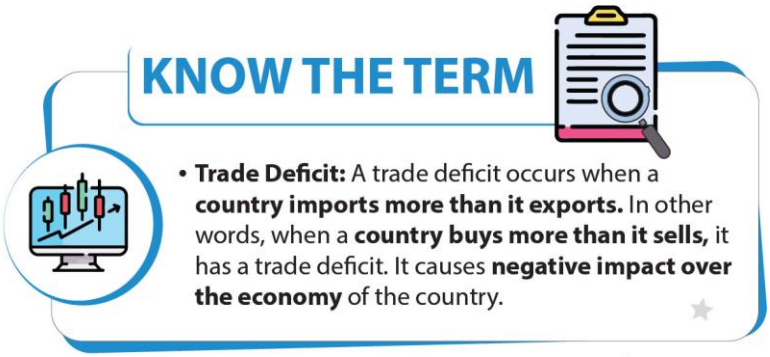
Way forward for India

- **Free Trade Agreements** (**FTA):** India must **prioritize investments in Eurasia and expedite FTAs**. The swift completion of the long-awaited FTA between India and the EEU is in India's best interest, given the region's human and economic capital.
- **Engaging NATO and EU:** India's Eurasian policy must involve **greater engagement with both the European Union (EU) and the North Atlantic Treaty Organization (NATO).**
- **Regional Platforms:** India should strive towards **regular engagement with Russia and China by utilizing platforms** of Shanghai Cooperation Organisation **(SCO), BRICS** (Brazil, Russia, India, China, and South Africa), **and RIC** (Russia, India and China) to ensure wider cooperation on continental Eurasian security.
- **Improve connectivity:** Fast track projects like INSTC to **ensure connectivity and further boost ties with the Eurasian region**. India should seek to join Russia's "Greater Eurasian" corridor and the Northeast Passage to connect to the Far East and even Japan.
- **Collaboration with Iran and Arabia:** Iran's location makes it critical for the future of Afghanistan and Central Asia and the religious influence of Arabia is consequential in the region. India's partnerships with these countries are also critical in overcoming Turkey's alliance with Pakistan.

2.4. INDIA-CHINA TRADE RELATIONS

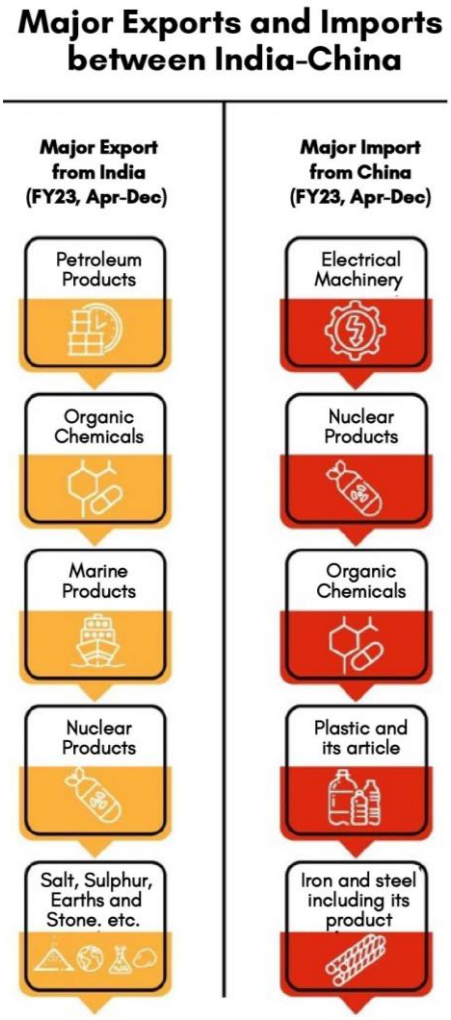
Why in News?

India's **trade deficit** with China has crossed **the $100 billion mark for the first time** ever in the history of India-China bilateral trade relations.



Overview of Trade Relation Between Both Countries

- The **Trade and Economic Relationship** between both the countries reached to a record level of $135.98 billion in the year 2022, with India's imports accounting for $118.5 billion.
- **China is one of the largest trading partners of India, its position generally remains at 1 or 2.**
  - On the other hand, **United States is the largest trading partner of China**.



Reasons for Rising Trade Deficit

- **Growing Imports:** Imports from China have increased in the recent years. For many finished and intermediate goods like electrical machinery, India is heavily depended over China.
- **Low Value Export**: India's export to China mainly includes primary goods such as iron ore etc. which have very less monetary value in terms of finished product of China.
  - Also, India has narrow basket of commodities for export.
- **Market Access:** China imposes tax barrier and non-tax barrier for high potential export sector of India such as pharmaceuticals, IT/IteS, etc.
  - There are lot of informal restrictions such as customs procedures, standards, certification and regulatory practices, and quantitative restrictions.
- **Dumping of Products**: China has used the policy of dumping goods in Indian market at low cost so that it can capture market of different products.
- **Exchange Rate Policy of China**: It revalued the renminbi in relation to the US$, which makes export expensive for India.
- **Price Competitiveness**: Chinese product are cheaper in comparison to Indian products; thus, they have huge demands in Indian markets.

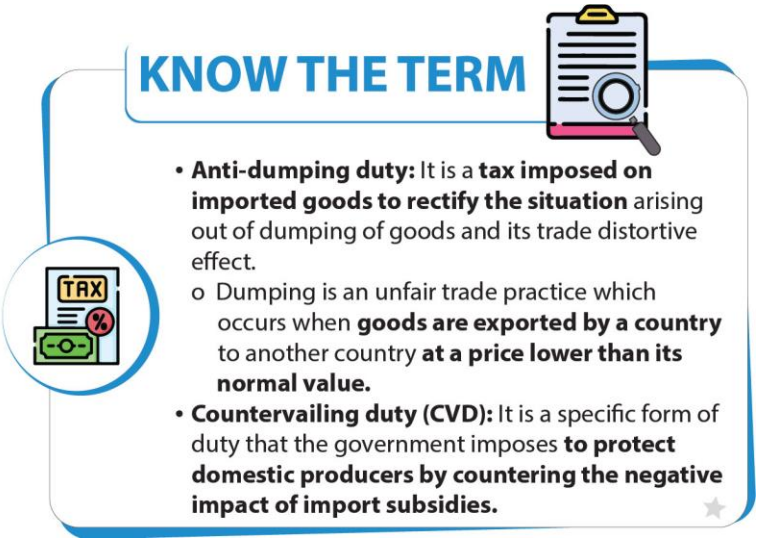
Initiative Taken by India to Check Trade Deficit:

Reducing Imports:

- **Protective Measures: Anti-dumping** and **countervailing duties** are being imposed on Chinese products which violate the trade rule.
- **Atmanirbhar Bharat:** Under this initiative, government **is promoting domestic products. For instance,** manufacture of **active pharmaceutical ingredients (APIs) is promoted in India.**
  - Also, **India's decision to not join the Regional Comprehensive Economic Partnership** is another example.
- **Global Supply Chain Management:** With the help of **like-minded country like Japan, Australia etc.** India is working to **improve the global supply chain.**
- **Products Ban: India** has banned certain products **such as several Chinese applications, power equipment's etc.**

Enhance Exports:

- **Production Linked Incentive (PLI) (2020):** Under it, the government provides incentives to Indian companies based on the sales of their products.
- **Make in India (2014):** Its objective is to make India **a hub of manufacturing in world.**
- **Promotion of Specific Sector: In 2020, the Ministry of Commerce and Industry** identified 12 sectors - to make India a **global supplier** and cut import bills.



Way Forward

- **Self-Reliant:** The policy needs to be formulated to promote self-reliance in the sphere of electrical, API's etc. sphere. More emphasis should be given on initiatives like 'vocal for local'.
- **Market Access**: By using diplomatic channel and soft power, more access to high value export could be provided.
- **Import Substitution**: India can effectively substitute Chinese import by domestic products.
- **Competitiveness of Indian Products:** If we enhance the cost-effectiveness of Indian Products then demand of Chinese product can be checked.

Investments from China

- **Foreign Direct Investment (FDI)** and **Foreign Portfolio Interest (FPI)** from China have raised rapidly in recent years. Inflow is more in the form of FPI, which is a major cause of concern.
- The investment is mainly focused on **technology start-up segment.**
- **In 2020. FDI policy of India was revised to curb opportunistic takeovers or acquisitions of Indian companies.**
- The amended policy **states that an entity of a country,** which **shares a land border with India** or where the beneficial owner of investment into India is situated in or is a citizen of any such country, can invest **only under the Government route.**

Conclusion

India should formulate strategic policy to reduce the trade deficit. Also, it should raise its concerns with the China about the skewed trade deficit so that effective steps for market access can be taken.

2.5. INDIA-UNITED STATES TRADE RELATIONS

Why in News?

Recently, **13th Ministerial Meeting of the India-U.S. Trade Policy Forum (TPF)** was organised to discuss trade related issues.

About Trade Policy Forum (TPF)

- TPF was **established in 2005**.
- It is a platform for continuous engagement **between two countries in the area of trade** and to further the trade and investment relations between the two countries.
- Under the TPF, there are working groups on five broad areas including agriculture, non-agriculture goods, services, investment, and intellectual property.

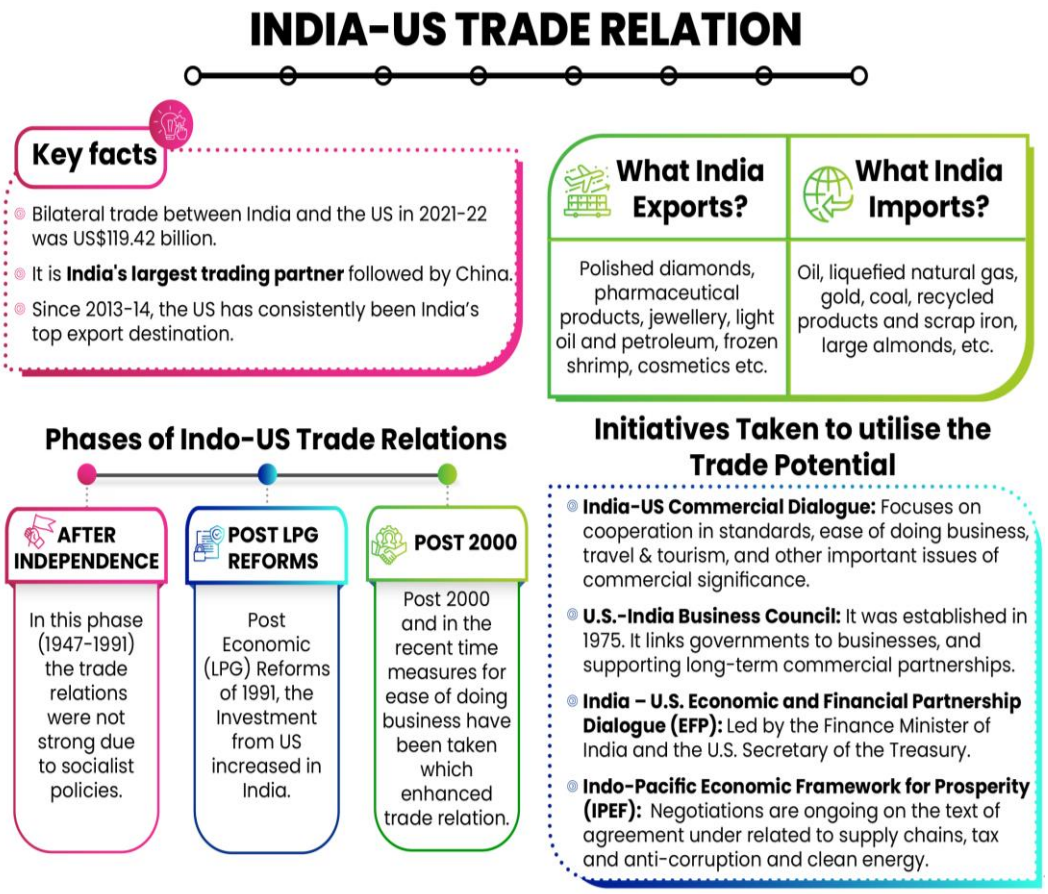
Key Outcomes of the Meeting

- A new working group on **"Resilient Trade"** was launched.
- Its objective is to **deepen bilateral dialogue on a range of issues** that can enhance the resiliency and sustainability of the trade relationship including on trade facilitation, benefitting workers and promoting sustainable and inclusive growth, etc.

Significance of India-US Trade

- **Exports**: India has a trade surplus with United State. It is one of the major export destinations of India.
- **Investments**: American companies are investing huge capital in the form of Foreign Direct Investment (Apple, Google etc.) and Foreign Institutional Investment.
  - This has helped in job creation in India.

- **Information and Technology Hub**: India has emerged as IT hub after taking inspiration from the Silicon Valley of United States.
- **People to People Relation**: Due to improving trade relation, the people to people contacts between both the countries have increased.
- **Remittances**: US is a major source of remittances to India. It has helped in increasing foreign exchange reserve.
- **Technology Transfer**: Due to close trade partnership technology transfer has become easy as compared to early days.



Challenges in India-US Trade Ties

- **Tariff Barrier:** Both accuse each other from imposing high tariff rates.
  - For instance, in 2018, the US imposed a tariff on certain steel products and a tariff on certain aluminum products from India. Then, India also imposed tariff on certain products in retaliation.
- **Non- Tariff Barrier:** US claims that Sanitary and phytosanitary (SPS) barriers are imposed by India to limit U.S. agricultural exports.

India US Defense Trade Relations

- USA designated India as a **Major Defense Partner** and **Strategic Trade Authorization** (tier 1 status) in 2016 and 2018, respectively.
- Under the **Defence Technology & Trade Initiative Group**, both countries are working together for **co-production and co-development of defence equipment**.
  - Defence trade is mainly tilted in favor of US.
- **Defence trade and cooperation** has been deepened with signing of four foundational agreement which includes-
  - **General Security of Military Information Agreement (GSOMIA) (2002)**,
  - **Logistics Exchange Memorandum of Agreement (LEMOA) (2016)**,
  - **Communications Compatibility and Security Agreement (COMCASA) (2018)** and
  - **Basic Exchange and Cooperation Agreement (BECA) (2020)**.

- **Self-reliance or Aatmanirbhar bharat**: US perceive India's **Aatmanirbhar bharat** initiative as **protectionist move**.
  - As per US, India has introduced market access barriers under this initiative in the form of tariffs, localization requirements, indigenous standards requirements and labelling practices, price controls, and import restrictions.
- **Generalized System of Preferences (GSP)**: In 2019, the United States removed India from GSP.
  - The GSP allows eligible developing countries to export duty-free goods to the US.
- **Policies of localisation**: India's move for creating Data centers in India is being criticized by the American companies.
- **Digital Tax**: USA criticizes India's decision of imposing (through the Financial Act of 2020) 2% tax on revenue generated from a broad range of digital services offered in India by "non-resident" companies.
- **Intellectual Property (IP):** India remained on the Priority Watch List of the U.S. "Special 301" report, which cited such U.S. concerns as India's patent treatment, high IP theft rates, and lax trade secret protection.
- **Access to Professionals:** US has tightened the norms of L-1 and H-1B visa categories.

- India has alleged that the US is violating its obligations under **General Agreement on Trade in Services (GATS)** as well as the GATS Annex on Movement of Natural Persons Supplying Services, to not discriminate against or between non-US service providers.

India, US and World Trade Organisation (WTO)

- In WTO, **India presents its interest as well of the developing countries**. On the other hand, **US represents the developed world** which leads to the difference in opinion on many issues.

Key issues at WTO

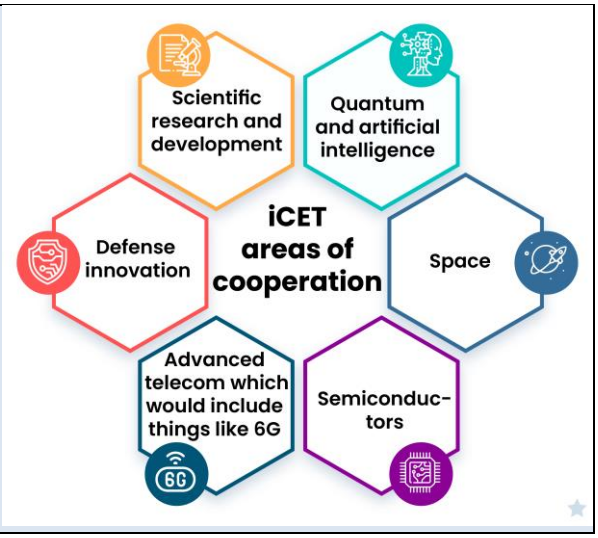
- Both the countries have different views over the **Agreements signed under the Agreement on Agriculture.**
- There are many disputes between India and US in **Dispute Settlement Mechanism under the WTO** such as India's export promotion schemes.
- Differences remain on **other WTO issues under negotiation, e.g., e-commerce customs duties and fisheries subsidies.**

Way Forward

- **Disputes Resolution**: All the disputes should be solved by negotiation as soon as possible so that trade protentional could be utilised.
- **Mutual Trust and Cooperation**: Both countries should show mutual trust and cooperate with each other at regional and multilateral forums.
  - The US Department of Treasury in November 2022 removed India from its Currency Monitoring List of major trading collaborators after two years.
- **Easing Barrier**: Both tariff and non-tariff barrier need to reduced to minimal. It will help in taking bilateral trade to USD 500-600 billion by 2030.

Initiative on Critical and Emerging Technologies (iCET)

- Recently, inaugural dialogue of iCET was held.
- ICET is a unique initiative led by the **Indian National Security Council Secretariat (NSCS**) and the **U.S. National Security Council (NSC)**.
- It **aim**s to expand partnership in critical and emerging technologies.
- **Significance of iCET:**
  - Vital for **India's growing role as a trusted supply chain partner and contributor in the global technology value chain.**
  - Deals directly with **disruptive domains** which are central to the next Industrial Revolution and future warfare.
  - **Open new markets for India's deep technology players**.
    - ✓ Since most critical and emerging technologies today are dual-use, it can give a fillip to the two countries' innovation ecosystem.
  - Potentially opens the door for the US to **lift existing export control restrictions**.



2.6. INDIAN DIASPORA IN LATIN AMERICA

Why in News?

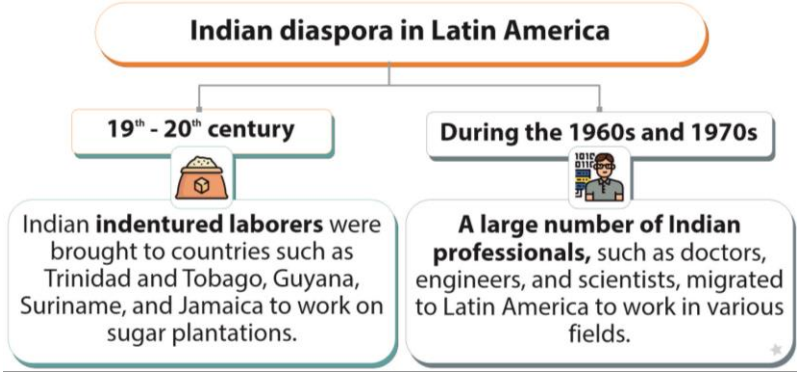
The 17th Pravasi Bharatiya Divas (PBD) Convention in focus on Latin America's diaspora connection, with two Indian-origin Presidents from the region attending as special guests.

About Pravasi Bharatiya Divas

- The Pravasi Bharatiya Divas (PBD) is observed on 9th January.
- It commemorates the return of Mahatma Gandhi from **South Africa to India on 9th January, 1915**.
- 1st PBD Convention was organised on 9 January 2003
- Since 2015, PBD Convention **has been organised once every 2 years**.

More in News

- India hosted the **17th PBD Convention** in Indore, Madhya Pradesh.
- The theme of the 17th PBD was "**Diaspora: Reliable Partners for India's Progress in Amrit Kaal**".
- In the Convention**, Pravasi Bharatiya Samman Awards** were also conferred.



- The core of the event is **to provide a platform for the Indian diaspora across the globe** to engage with the government and help strengthen ties.

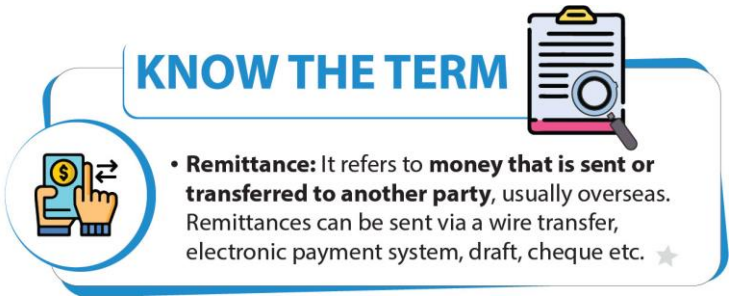
Contribution of Indian Diaspora in the Latin America

- **Demography:** The status of the Indian diaspora in Latin America varies from country to country.
  - Indian diaspora accounts for **a major portion of the populations of Trinidad, Suriname and Guyana.**
  - There were **subsequent migrations by Indian businessmen and professionals to other countries of the region, but these were very few in numbers.**
- **Polity:** Wisdom and governance skills of Indian paved the way for them to serve at the important constitutionals post including head of state.
  - For instance, Christine Kangaloo is President of Trinidad and Tobago, Irfaan Ali is the President of Guyana, Chan Santokhi is President of Suriname etc.
- **Culture:** Indians have added new dimensions to the social and cultural fabric of the Latin America. It includes music, different religious beliefs, new vocabulary, dance, fashion, art and festivals.
- **Economy:** Due to consistent effort over the years, Indian diaspora has emerged as a strong economic power in the region.
  - They moved from primary activities to secondary and tertiary sectors. They create lot of job opportunities for the locals.

Significance of Indian diaspora for India

Challenges in Effective Engagement with Diaspora

- **Policy Paralysis:** According to **Standing Committee on External Affairs** there is no clear policy on diaspora is in place, despite their socio-economic contributions to the development of the country.
- **Limited engagement:** While there are several initiatives aimed at engaging with the diaspora, the level of engagement is often limited.
- **Database on Indian diaspora:** Ministry of External Affairs does not have updated data on Indian diaspora, as registration with Indian Embassies is voluntary.
- **Multiple portals for grievance redressal:** Several portals such as e-Migrate, and the Centralised Public Grievance Redressal and Monitoring System (CPGRAMS) are in place to resolve the grievances of Indian nationals abroad but multiple portals often delay grievance resolution.



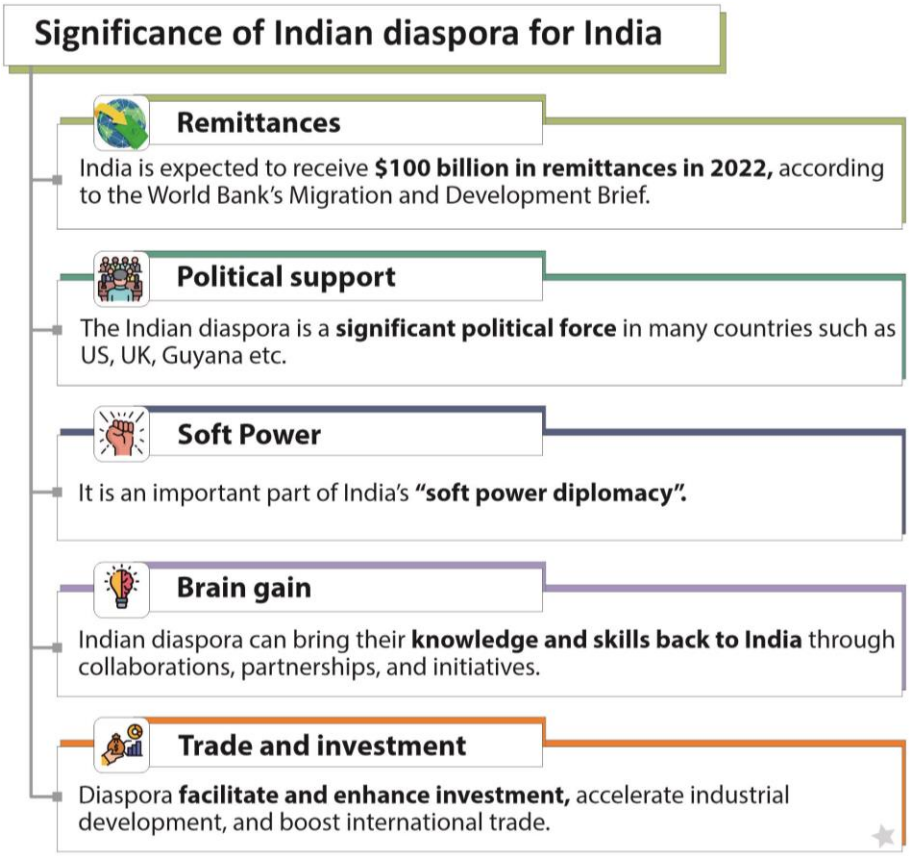
Pravasi Bharatiya Samman Award

- The Pravasi Bharatiya Samman Award is the **highest honour conferred on**
  - **a Non-Resident Indian, Person of Indian Origin**; or
  - **an organisation or institution** established and run by them.
- It commemorates the contribution of Indian diaspora to create a better understanding of India abroad, support India's causes and work for the welfare of the local Indian community.

Government Initiatives to connect with the Diaspora

- **Merger of Ministry of Overseas Indian Affairs** (created in 2004) with the Ministry of External Affairs in 2016 to encourage and provide streamlined support to Indians overseas.
- **Social security agreements with foreign countries** for the protection of the Indian communities abroad.
- **Know India Programme (KIP) (2003)** to provides a unique forum for students and young professionals of Indian origin to visit India, share their views, expectations and experiences and to bond closely with contemporary India.
- **Representation of the People (Amendment) Bill, 2017:** After enaction it allow an overseas voter to cast their vote in person or by proxy.
- **Other Initiatives**: Scholarship Programme for Diaspora Children" (SPDC) (2007), Study India Programme (SIP) (2012), E-Migrate System (2014), Pravasi Kaushal Vikas Yojana (PKVY) (2017), Dedicated Help line for women (2021), etc.

- **Domestic Issues:** Government is engaged in several domestic issues like poverty alleviation, development works etc. due to which less attention is paid toward engagement with diaspora.
- **Limited Resources:** India has a vast diaspora community, and it becomes challenging to cater to their needs and demands.



Way forward

- **Policy Formulation**: Draft a clear policy document on the diaspora which would serve as a guiding principle for engagement with the community.
- **Database on Indian Diaspora**: Indian Embassies should encourage the diaspora to register themselves, which will help in effective implementation of welfare schemes.
- **Foster Engagement:** A friendlier reception at their point of entry; easier procedures for immigration and customs clearances are essential for engagement.
    - **Provide opportunities for participation and engagement** through initiatives such as community events, mentorship programs, internships, or volunteer programs.

2.7. INDIA AND UN PEACEKEEPING

Why in news?

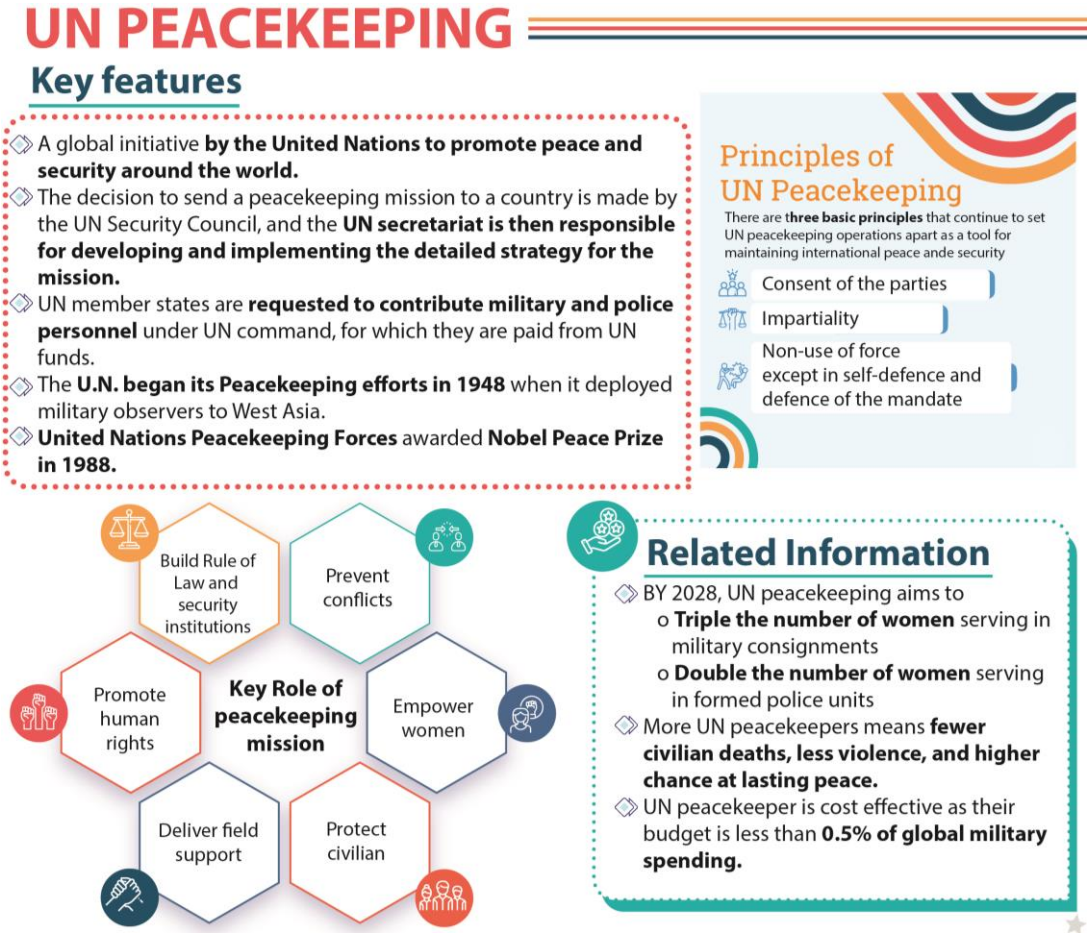
India deployed a women-only platoon of peacekeepers to the UN Mission in Abyei on the border of Sudan and South Sudan as part of the Indian Battalion in the **United Nations Interim Security Force, Abyei (UNISFA).**

Significance of UN Peacekeeping

- **Global Peace and Security:** Peacekeepers implement a **range of stabilization and protection measures**, helping to avert the collapse of fragile states, prevent civil wars and decrease the likelihood that dormant conflicts flare up.
- **Cost effective:** UN peacekeeping operations are significantly **less costly** than other forms of military intervention.
- **Promote burden sharing:** It harnesses the collective resources of the entire international community.
    - The UN Member States pay nearly three-quarters of the costs associated with these missions and contribute more than 99.9 percent of the troops and police who serve in them.
- **Counter violent extremism:** Peacekeepers play a **key role in stabilizing fragile nations, engaging communities, protecting civilians, and promoting peace processes** to prevent these regions from becoming terrorist safe havens.
- **Promoting human rights:** UN peacekeeping promotes human rights by monitoring and reporting on human rights violations, supporting efforts to prevent such violations, and working to ensure accountability for past violations.

Challenges associated with UN peacekeeping

- **Changing nature of Armed conflict:** There is engaging of a changing profile of armed groups using terrorist tactics, including targeting of peacekeepers.
  - It is interconnected with organized crime and is host to the unregulated spread of a new generation of weapons.
- **Restrictions on freedom of movement:** It affect peacekeeping effectiveness by preventing swift responses on the ground.
- **Coordination:** Peacekeeping missions involve multiple actors, including the UN, host governments, regional organizations, and other stakeholders, and coordinating their efforts can be a significant challenge.
- **Limited resources:** UN peacekeeping operations often faces constraints in resources, including personnel, logistics, and funding.
- **Security threats:** UN peacekeepers are often deployed in hostile and dangerous environments, where they face threats from armed groups.
- **Lack of local support:** UN peacekeeping missions often face resistance from local populations, who may view them as outsiders or biased towards certain groups.
- **Lack of training:** Peacekeepers may not always be adequately trained for the specific challenges they face in a given mission, which can compromise their effectiveness and safety.



India's contribution to UN Peacekeeping

- India has a long history of service in UN Peacekeeping, having **contributed more personnel than any other country.**
- India **served in 49 of the 71 UN Peacekeeping missions** established around the world since 1948.
  - **Currently, India is the fifth largest troop contributor (TCC)** with 5,323 personnel deployed in 8 out of 13 active UN Peacekeeping Missions.
- Indian Peacekeepers **provide many services** such as medical care, veterinary support, engineering services to the communities
- **India was the first country to contribute to the Trust Fund** on sexual exploitation and abuse, which was set up in 2016.
- India's participation in UN peacekeeping missions has been motivated by its **commitment to maintaining international peace and security, and also as a way to project its soft power**.

Women in Indian Peacekeeping

- **Women peacekeepers from India have served in several countries, including Congo, Liberia, South Sudan, and Haiti.**
- In 2007, India became the first country to deploy an all-women contingent to a UN Peacekeeping Mission.
- In the year 2014, Indian **cop Shakti Devi of the Jammu and Kashmir Police**, who was deployed in the UN Assistance Mission in Afghanistan (UNAMA), **was awarded the International Female Police Peacekeeper Award**.

Way Forward

- **Stronger commitment:** There is a need for stronger commitment by all actors in support of peacekeeping efforts, from political to operational issues, to achieve peace- keeping excellence.

- **Participation of women:** Women peacekeepers are highly acclaimed in peacekeeping missions all around the world **for their capacity to interact with local women and children,** particularly those who have experienced sexual assault in conflict areas.
- **Community engagement:** Effective community engagement is critical for the success of peacekeeping missions. The UN must build relationships with local communities and work to build trust and legitimacy.
- **Proper Resourcing:** UN peacekeeping operations must be **properly resourced and equipped**, and operate under clear, credible and achievable mandates.
- **Accountability:** Peacekeeping missions must be held accountable for their actions, and perpetrators of human rights abuses should be held accountable through effective justice systems.
- **Inclusion of stakeholders:** It is critical that troop and police contributing countries should be fully involved at all stages and in all aspects of mission planning.

2.8. NEWS IN SHORTS

2.8.1. ASIAN PACIFIC POSTAL UNION (APPU)

- **India will take over the charge of Secretary General of APPU** for a tenure of 4 years.
- APPU is **an intergovernmental organization of 32-member countries** of the **Asian-Pacific region**.
- Goal of APPU is to **extend, facilitate and improve postal relations** between member countries and to promote **cooperation in the field of postal services.**
- It is the **only Restricted Union of the Universal Postal Union (UPU)** in the region, which is **a specialized agency of UN.**
- **Headquarter:** Bangkok, Thailand.

QUIZ

SMART QUIZ

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

3. ECONOMY

3.1. WTO: NEW AGREEMENT ON FISHERIES SUBSIDIES

Why in News?

Recently, **Switzerland became the first WTO member to formally submit its acceptance of the WTO's new Agreement on Fisheries Subsidies.**

More about News

- Switzerland gave **instrument of acceptance** to Director-General of WTO at the informal WTO ministerial meeting held on the side lines of the World Economic Forum's annual meeting in Davos, Switzerland.
- Agreement was adopted during the **12th Ministerial Conference of WTO** in **2022** held in Geneva, Switzerland under **'Geneva Package'**
- Acceptances from **two-thirds** of WTO members are needed for the Agreement to come into effect.

ABOUT NEW AGREEMENT ON FISHERIES SUBSIDIES UNDER WTO

Prohibition on subsidies contributing to IUU (illegal, unreported and unregulated) fishing (Article 3)

- Under the **Special and Differential Treatment (S&DT),** provides for a 2 year **"peace clause"** for developing country and LDC members within their EEZs.

Prohibition on subsidies for fishing or fishing related activities regarding overfished stocks(Article 4)

- Responsibility for recognizing that a stock is overfished rests with the **coastal state for areas** under its jurisdiction
- **Regional Fisheries Management Organization or Arrangement (RFMO/A)** for areas and species under its competence.

Prohibition on all subsidies to fishing and fishing related activities in areas outside the jurisdiction of coastal members and non-members (Article 5.1)

- Two **"due restraint"** clauses:
  - One for subsidies provided to vessels not flying the subsidizing member's flag
  - The other for subsidies for fishing when the status of the stock is unknown

Notification and Transparency

- Members will be required to notify the type or kind of fishing activity being subsidized and, to the extent possible, to provide information on stock status, conservation measures, fleets and vessels being subsidized, along with catch data.

India and Fisheries

- **3rd largest fish producer**
- **4th largest exporter** of fish and fisheries
- India has more than **10% of the global biodiversity** in terms of fish and shellfish species
- **Inland Fisheries are fully managed by State Governments.**
- **About 7.7% to the global fish production**
- **2nd largest aquaculture nation** in the world.
- **Fisheries being a State subject,** the States play a pivotal role in fisheries governance.
- **Marine Fisheries are a shared responsibility** between the Central and Coastal State/UT Governments

Status of Fisheries Subsidies

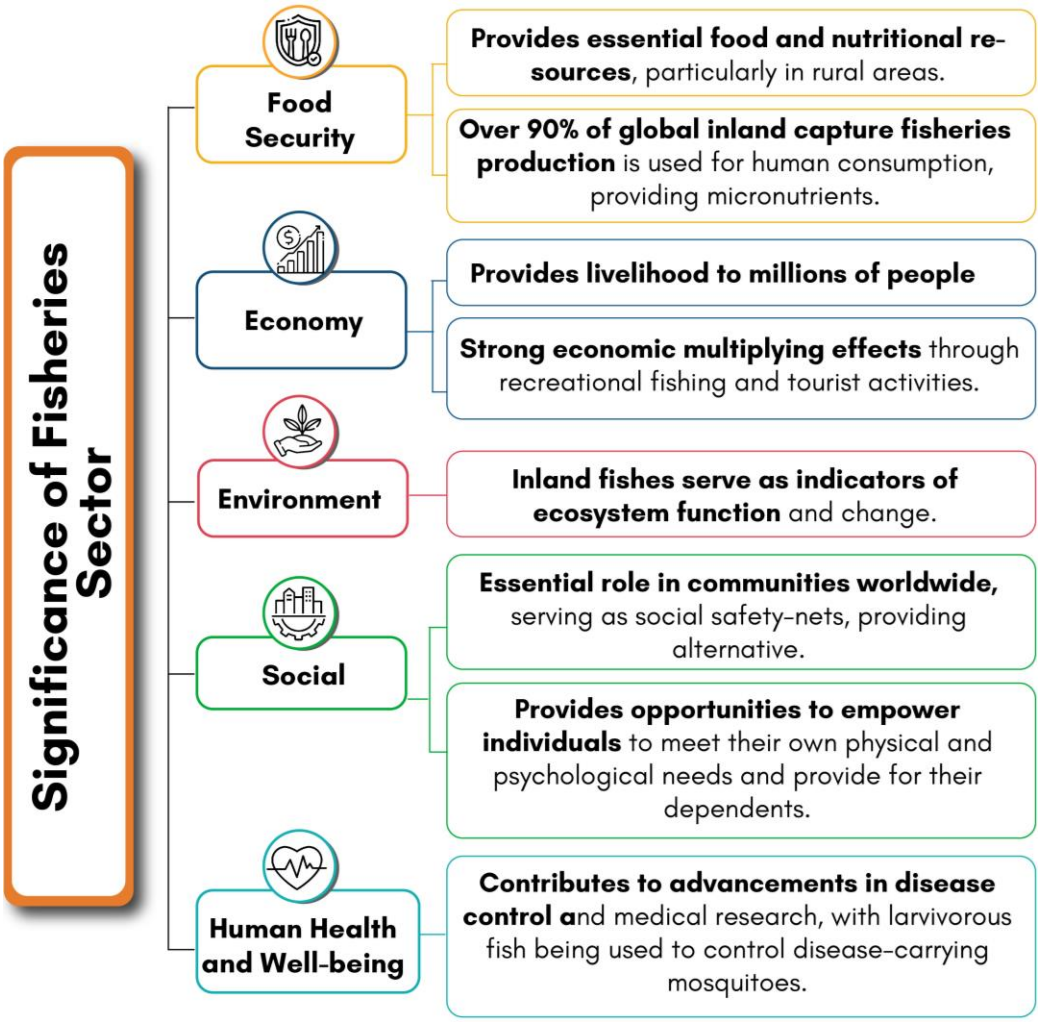
- India is home to as many as **9 million fishermen's families,** who are dependent on assistance and support from the government for their livelihood.
- Schemes/Policies such as **Blue Revolution Scheme, Fishery and Aquaculture Infrastructure**
- India gives a subsidy of only **$15 per fisherman family per year.**
- **Development Fund (FIDF) and Pradhan Mantri Matsya Sampada Yojana (PMMSY), Kisan Credit Card,** etc to develop Fishery Sector in the Country.

Stand on New Agreement on Fisheries

- Countries which had provided huge subsidies in the past should take more obligations to prohibit subsidies based on the **'polluter pay principle' and 'common but differentiated responsibilities'.**
- Demanding that developing countries be given a longer **transition period of 25 years** to put an end to OCOF subsidies within their EEZ.
- Demand disciplines on subsidies given by developed countries with large industrial fleets in the form of **non-specific fuel subsidies,** which account for 22% of total fisheries subsidies.

Benefits of New Agreement on Fisheries Subsidies

- **Curbing Illegal, Unreported and Unregulated (IUU) Fishing:** By curbing subsidies to IUU fishing, the Agreement creates a powerful new weapon in the **global fight** against such fishing.
- **Protecting Overfished Stocks:** By prohibiting subsidies to fishing on overfished stocks, the Agreement puts important protections in place where **management measures are ineffective**.
- **Protecting Unregulated High Seas**: By prohibiting subsidies to fishing on the unregulated high seas, the Agreement also puts important protections in place **where management measures do not exist**.
- **No Prohibition on Development Subsidies:**



No prohibition has been imposed on a WTO Member regarding granting or maintaining subsidy to its vessel or operator **as long as it is not carrying out IUU help in capacity development.**

- **Subsidies for Rebuilding Overfished Stocks**: The agreement allows subsidies for fishing on overfished stocks as long as they are implemented to rebuild the stock to a biologically sustainable level.
- **Achieving Sustainable Development Goal 14.6:** Agreement helps to achieve **Sustainable Development Goal (SDG 14.6)**- address harmful fisheries subsidies provided by countries towards marine fishing and to save the world's fish stocks from further depletion.

Conclusion

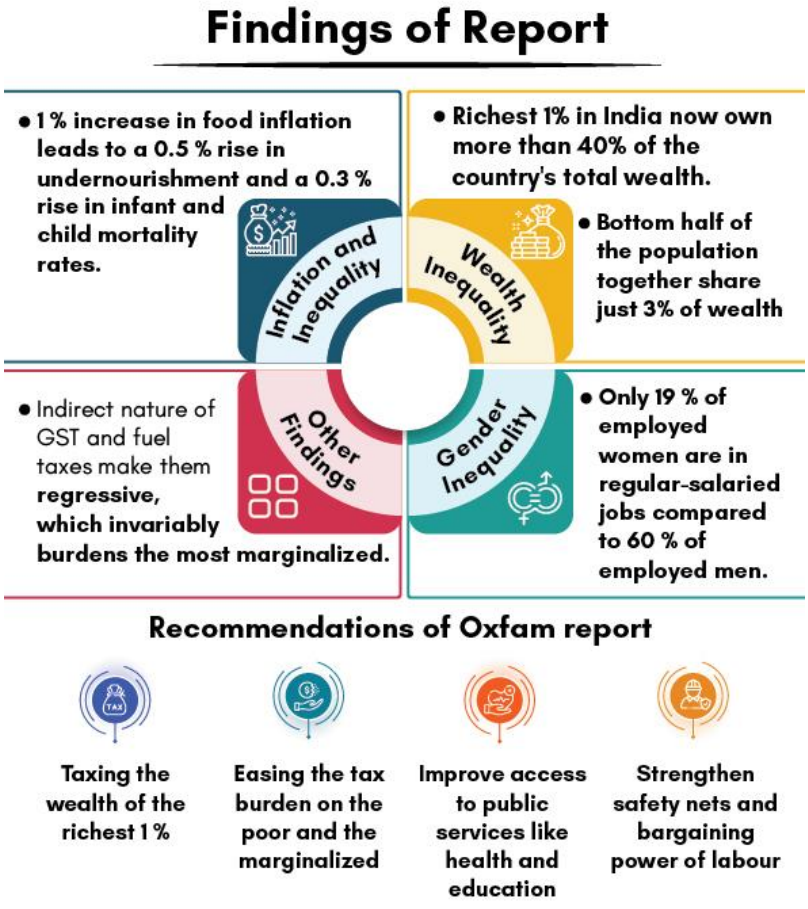
Agreeing to the 25-year transition period is important, as policy space is essential for the long-term sustainable growth and prosperity for low-income fishermen in developing countries.

The **exemption from disciplines** for the low-income or resource-poor or livelihood fishing particularly again for those nations not involved in long-distance fishing up to their EEZ i.e. 200 nautical miles, is highly essential to provide **socio-economic security** to these vulnerable communities.

3.2. INEQUALITY IN INDIA

Why in news?

"**Survival of the Richest: The India story" report** recently released by **Oxfam India**, highlighted that India is not only one of the fastest growing economies in the world but also one of the most unequal countries.



About Inequality

- **According to UN**, **inequality is the state of not being equal**, especially in status, rights, and opportunities.
- **Development theory** has largely been concerned with inequalities in standards of living, such as inequalities in income/wealth, education, health, and nutrition.
- **Two perspectives**
  - **Inequality of opportunities** - Such as **unequal access** to employment or education.
  - **Inequality of outcomes -** In various **material dimensions of human well-being**, such as the level of income, educational attainment, health status and so on.
- **Income inequality**: The most widely cited measure of inequality of outcomes - is typically measured by **Gini coefficient.**
  - Distribution of inequality in economy represented **by Lorenz curve** and degree of income inequality measured through **Gini Coefficient.**

- **Gini coefficient** is a measure of inequality where a rating of **0 represents total equality,** with everyone taking an equal share, and **a rating of 1 (or sometimes 100)** would mean that **one person has everything.**

Impact of persistent Economic Inequality (or Wealth Gap)

- **Increased Social Polarizations**: Inequality **hampers poverty reduction** and reduces social mobilities.
  - For India, with an already fractured society over religion, region, gender, or caste, it adds another fracture point.
- **Social Justice hampered:** Safety and wellbeing of vulnerable sections gets jeopardized due to lack of quality health and education facilities.
- **Policy Risk:** It can lead to a backlash against growth-enhancing economic liberalization and fuel protectionist pressures against globalization and market-oriented reforms.
- **Economic Risks:** From increased economic inequalities such as- **mass poverty** (especially in young population); **reduced state's ability to protect their poor and vulnerable sections**.
- **Environment Risk:** Inequitable and unjust development such as **damaging wetlands, increased river pollution etc.**
- **Political Risks:** Marginalization of vulnerable segments of population in policy decisions, ability to question policies and processes.

Challenges in removing economic inequalities

- **Historical differences:** As high-income inequality regions or nations usually have low intergenerational mobility; leading to limited opportunities for socio-economic mobility.
- **Monetary Resource Constraints:** On redistributive policies from state due to issues **of informal economy**, presence of parallel economy (Black Money), tax evasions, small tax base etc.
- **Human Capital Constraints:** Due to vicious cycle of low income, low productivity, low taxes, and low human capital.
- **Climate change exacerbating inequality:** It is making it harder for people to escape poverty and is increasing their vulnerability to falling into poverty, due to price shocks caused by sudden changes in agricultural production, natural disasters and environmentally triggered health problems.
- **Unplanned urbanization -** Income inequality is usually larger in cities than in rural areas. **Slums** are the most visible symptom of exclusion in divided cities.

Way ahead to reduce inequality

- **Universal basic income:** Introduce universal basic income (recommended by Economic Survey 2016-17) and raise minimum income. These measures that can reduce the income gap and equal distribution of earnings in the labour market.
- **Urban Employment Guarantee schemes**: Urban counterpart of **MGNREGS** which is demand-based and offer guaranteed employment should be introduced to rehabilitate surplus-labour.
- **Equitable access to education:** Enhance the budgetary allocation for **education to 6% of GDP**, as committed in the National Education Policy and **creation of more jobs** with long term growth are vital for triggering an upward mobility among the poor.
- **Rationalization of subsidies: Better targeting of beneficiaries** through alternatives like direct benefit transfers over existing inefficient mechanisms.
- **Promote Entrepreneurship:** It will leads to Quality Jobs and increasing the Labour Force Participation Rate, especially of women
- **Tackle prejudice and discrimination:** Need to promote the participation of disadvantaged groups in economic, social and political life.
- **Macroeconomic policy environment conducive to reducing inequality**: Fiscal and monetary policies can encourage greater equity.

3.3. SCHEME FOR FINANCIAL SUPPORT TO DIGITAL PAYMENTS

Why in News?

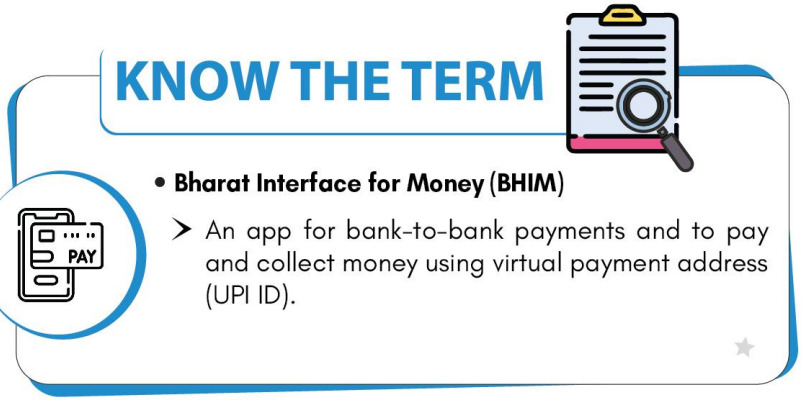
Recently cabinet approved an **incentive scheme** for promotion of **RuPay Debit Cards** and **low-value BHIM-UPI transactions** (person-to-merchant or P2M) **for Financial Year 2022-23.**

Related information

- **Unified Payments Interface (UPI)**
  - It is **real time payment system**, launched in **2016 by National Payment Corporation of India (NPCI).**
  - Its **key features include:**
    - ✓ **Immediate money transfer** through mobile device round the clock 24*7 and 365 days.
    - ✓ **Single mobile application** for accessing different bank accounts.
    - ✓ **Single Click 2 Factor Authentication**.

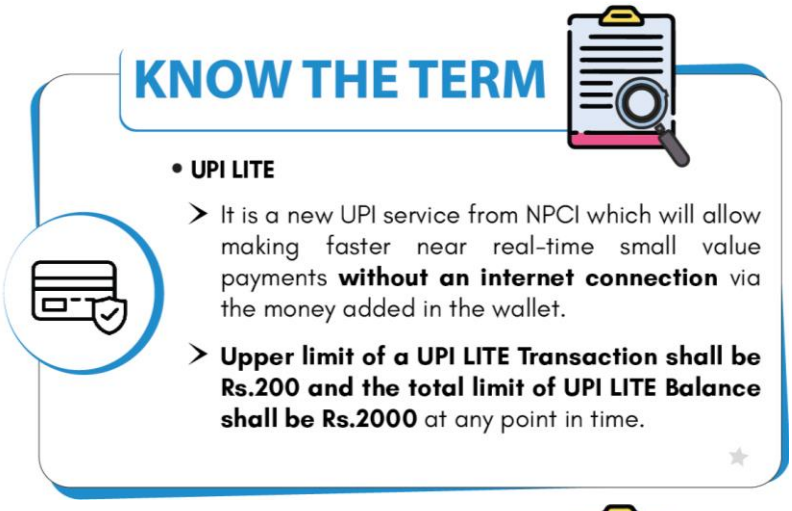
Features of Scheme

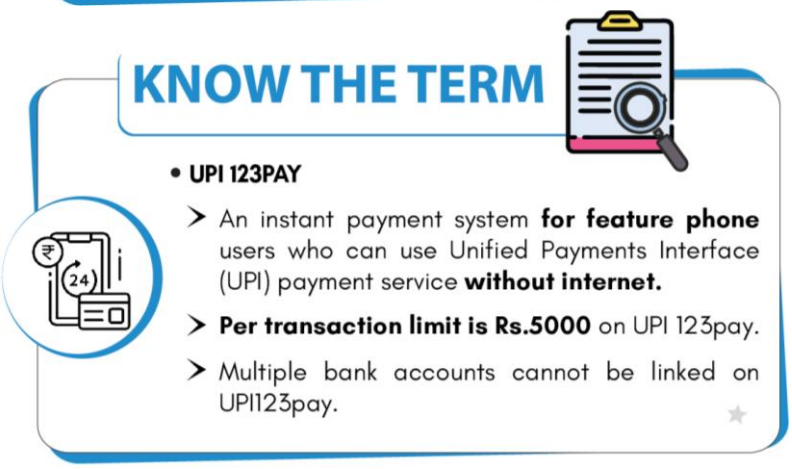
- **Ministry of Electronics and Information Technology** is implementing this scheme.
- Approved scheme has a **financial outlay of ₹ 2,600 crore.**
- **Banks will be provided financial incentive**, for promoting Point-of-Sale (PoS) and e-commerce transactions using RuPay Debit Cards and low-value BHIM-UPI transactions (P2M).
- **The scheme will also promote UPI LITE and UPI 123PAY** as economical and user-friendly digital payments solutions and enable penetration of digital payments across all sectors and segments of the population.



Significance of Digital Payments

- **Enhanced financial inclusion:** Digital payments offer **anytime, anywhere access to accounts**, thus making it easy for citizens to receive payments in their accounts and to also make payments using their phone.
- **Increased transparency in government system:** Earlier cash payments were subject to **"leakage"** (payments that do not reach the recipient in full) and "**ghost" (fake) recipients**. Now, benefits are directly transferred to target beneficiary (direct benefit transfer) account through digital modes of payments.
- **Instant and convenient mode of payment:** Unlike cash, money can be instantaneously transferred to the beneficiary account using digital modes **like BHIM-UPI and IMPS.**
- **Safe and secure**: Digital payments across India are secure as **multiple levels of authentication** are required for making transactions.
- **Enhanced Credit Access:** Unlike cash payments, digital payments automatically **establish a user's financial footprint**, thereby increasing access to formal financial services, including credit.





Challenges in digital payment systems in India

- **Cash Dependent Economy:** India is **predominantly a cash-based economy** and cash

provide anonymity, flexibility, convenience, and swiftness of making payment; finality of payment, without any default risk; and high level of liquidity and acceptability.

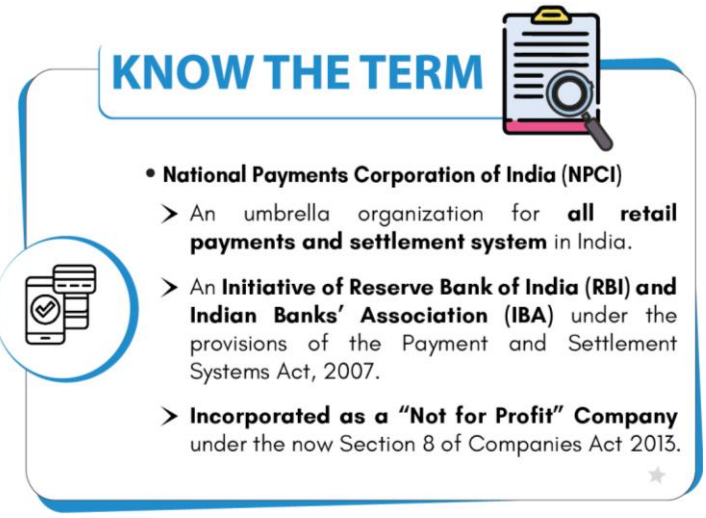
- **Limited Access to Banks and Cards**: As parts of India still continue to remain unbanked and remain unaware vis-à-vis the financial developments such as adoption of UPI, mobile banking etc.
- **Lack of Financial Literacy**: According to National Centre for Financial Education, **only 27% of Indians is financially literate.**
- **Risk of Cyber Fraud and Privacy:** Cyber security is the major obstacle that affects the digital transactions.
- **Cost and connectivity:** The cost of digital payments is sometimes deterrence for users to adopt digital payments as against cash which is perceived to be free by such users.

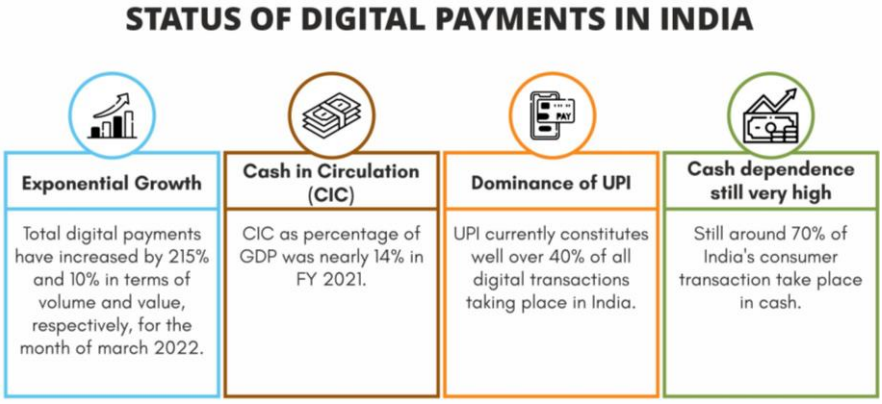
Suggestions to Improve Digital Payments System

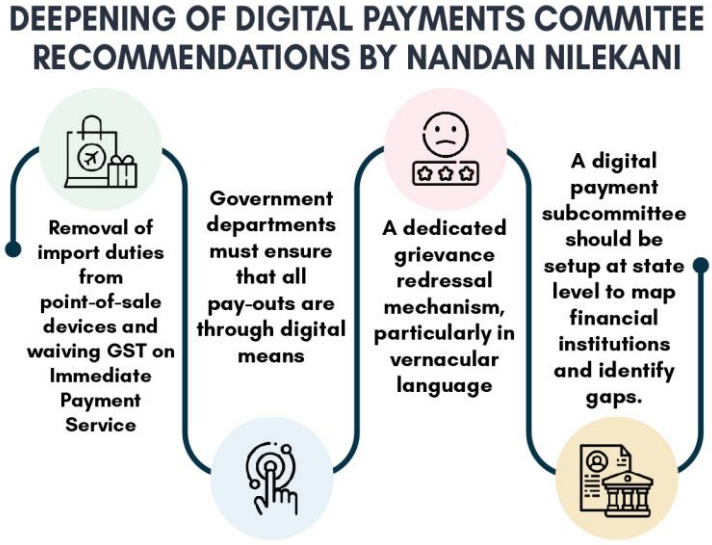
- **Digital Connectivity: Internet** should be accessible everywhere with adequate bandwidth and should be available at low cost.
- **Cyber Security:** Government should strengthen the cyber security regulations and enhance the Information and Communication Technology to avoid fraudulent activities and to improve security.
- **Awareness Creation**: Programme related to digital modes and usage of apps should be provided and Government must create trust and build confidence in the minds of people.
- **Digital Literacy:** Digital transactions should be provided through various initiatives like **Digital Payment Abhiyaan**.

Conclusion

A large population of the country historically lacked access to personal bank accounts and credit lines. Cash still rules but is increasingly seen as a way to store value as an economic asset rather than to make payments. **Speed, convenience and competition** are shaping the **optimistic future of digital payments.**



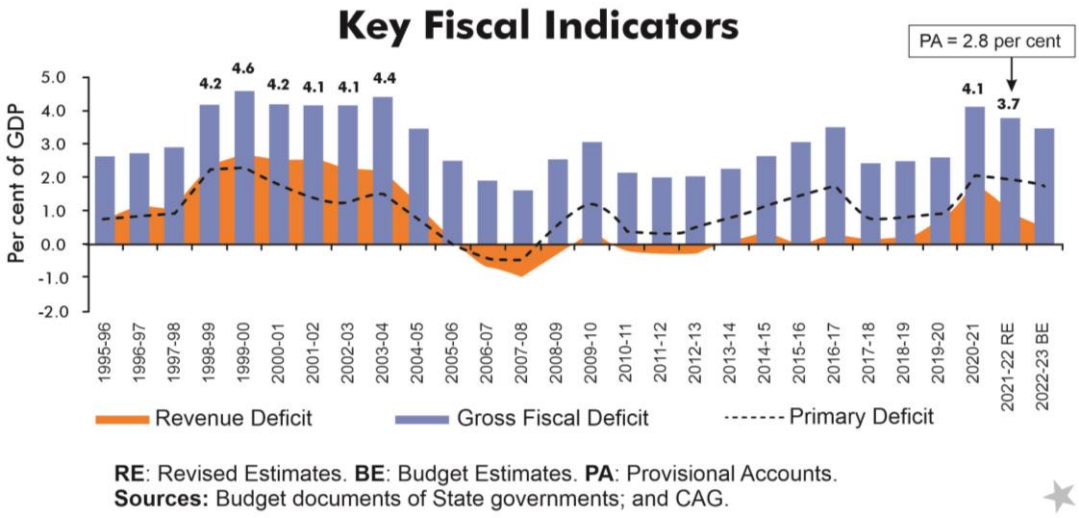




3.4. STATE FINANCES

Why in News?

RBI has released its **annual publication** titled "**State Finances: A Study of Budgets of 2022-23**" with the theme "**Capital Formation in India - the Role of States**".



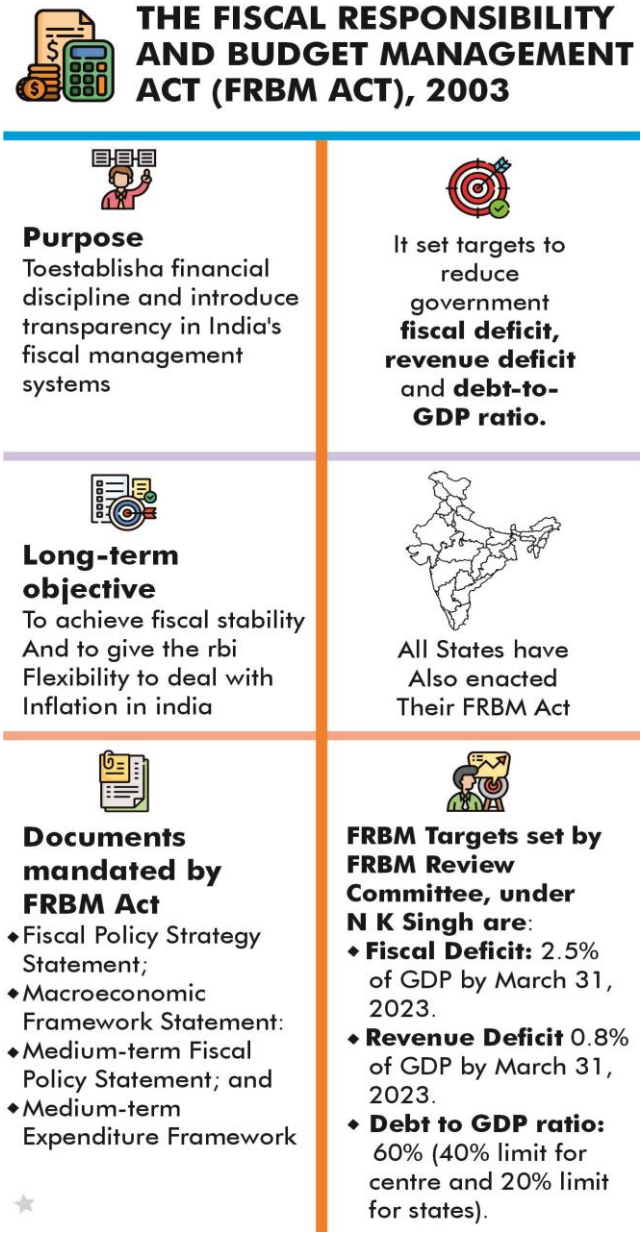
RE: Revised Estimates. **BE**: Budget Estimates. **PA**: Provisional Accounts.
Sources: Budget documents of State governments; and CAG.

State Finances in India

- The Indian Constitution provides the **federal basis for governance**.
  - The **Seventh Schedule** specifies the **financial resources and functions of Centre and the States.**
  - The Constitution of India also provides for **fiscal institutions** and **mechanism** for **intergovernmental transfers** to address the **vertical and horizontal fiscal imbalances** across **different levels of governments**.
- But due to **scarcity of capital**, **nascent private sector** and **gaps in implementation capabilities**, the **state finances** (revenue and expenses over a specified future period of time) have remained weak, i.e.,
  - **high fiscal deficit,**
  - **high revenue deficit** and
  - **high debt-to-GDP ratio**.
    - ✓ To overcome high borrowings and debt-trap risks, the government introduced the **Fiscal Responsibility and Budget Management (FRBM) Act,** 2003; amended subsequently multiple times due to non-achievement of targets (refer infographic for more details on FRBM).

Key Findings of Report and Future trends

- **Aggregate Revenue Receipts** of State Governments and UTs was **14.9% of the GDP**, out of which **55% was from own taxes.**
- **Aggregate Expenditure** of State Governments and UTs was **18.5% of the GDP**, out of which **83% was revenue expenditure** and **capital expenditure was 17%**.
- **Improved fiscal health of States** on the back of a **broad-based economic recovery** after a sharp pandemic-induced deterioration in 2020-21.
  - **States' gross fiscal deficit (GFD)** is budgeted to decline from **4.1%** of **GDP** in **2020-21** to **3.4%** in **2022-23** due to **high revenue collections**.
    - ✓ GFD is excess of total expenditure including loans net of recovery over revenue receipts (including external grants) and non-debt capital receipts.



Gross fiscal deficit = Total Expenditure - (Revenue Receipts + Non-Debt creating capital receipts).

- **States' debt** is budgeted to **ease to 29.5% of GDP in 2022-23** as against **31.1% in 2020-21**. (Although improved, but it is still higher than **20%** as recommended by FRBM Review Committee.)
- **38% Higher Budgeted Capital Outlay** from states in **2022-23**, after a robust growth of **31.7%** in **2021-22**.
  - ✓ Accordingly, the States' **capital outlay-GDP ratio** is budgeted to increase to **2.9%** in **2022-23** from **2.3%** in **2021-22** (Provisional Accounts or PA).

Significance of Strong State Finances

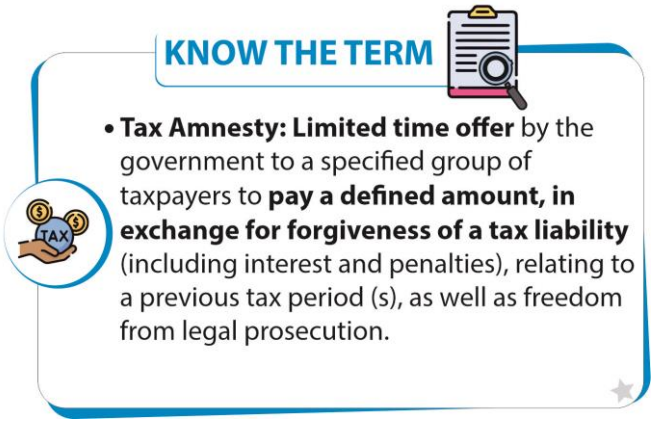
- **Achieve Growth:** With 60% of general government expenditure incurred by States, state finances become vital in India's macroeconomic policies.
  - It also becomes important for faster recovery amid ongoing impact of **pandemic** and **geopolitical tensions**.
- **Attract Investments:** Lower fiscal deficit and State debt eases the pressure on interest rates and thereby increases investments.
  - It can also help in improvement of **India's sovereign credit rating** from rating agencies because of better **macroeconomic stability**.
- **Employment Generation:** Strong Finances can improve the **quality of public expenditure,** i.e., increased capital expenditure, helping in additional demand creation and employment.
  - Also, the **State government employs five times more people than the centre.**
- **Achieve Sustainable Development Goals (SDGs)**, with a focus on infrastructure, research and development, health, education, and other social services.
  - It becomes important as key areas such as public health and sanitation, agriculture, irrigation etc. comes under the **State List** due to their proximity to the local issues.

Recent Initiatives to Improve State's Fiscal health

- **Scheme for "Special Assistance to states for Capital Investment**", providing ₹1,00,000 crore interest free loan for 50-years.
- **Reform-linked additional borrowing** space to state government, allowing additional borrowing of 0.5% GSDP for power sector reforms.
- **Ways and Means Advances (WMA)** limit for State Governments/UTs is reduced to ₹47,010 crore from ₹51,560 crore.
- **Inclusion of off-budget borrowings in state debt positions**, i.e., the borrowings from state public sector undertakings or their special purpose vehicles (SPVs).
- **State-level measures** to augment revenues such as:
  - **Green tax** to discourage old vehicles by Assam and Kerala.
  - Measures for **phased monetization of assets** by Haryana.
  - **Amnesty Scheme** by Kerala and Rajasthan in 2020-21 to provide relief to taxpayers as well as to improve their own revenue collections etc.

Existing Concerns over State Finances

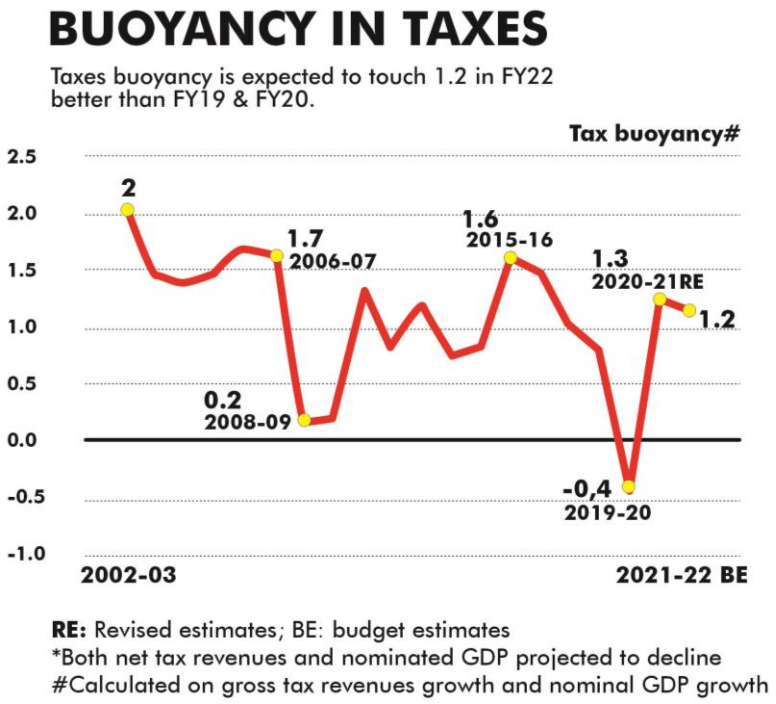
- **Vertical Imbalance**, i.e., high dependence of States on Centre for resources as the resource mobilization powers assigned to them falls short of their expenditure responsibilities.
  - In the last few years, the **tax devolution from Centre to States has been affected** due to growing cesses and surcharges percentage in Gross Tax revenue. (**Cess and surcharge revenue** is **estimated to reach 24%** in 2020-21 from 10-15% of Gross Tax Revenue during 2011-20.)
  - The **share of untied funds (tax devolution + revenue deficit grants) in central transfers** to states has **declined from 32.4% during 2015-20 to 29.5% of the Centre's gross revenue receipts** for 2021-26 (15th Finance Commission).



- **Horizontal Imbalances**, i.e., variations within states ability in resource mobilization and expenditures due to **region-specific disparities and diverse socioeconomic structure.**
  - **Populist fiscal measures** such as non-levy of certain taxes or State-specific expenditure schemes, also contribute to it.
- **Dominance of Committed Expenditures** in the expenditure patterns of the States such as interest payments, pension, and administrative services.

- E.g., High **percentage of pension as state's own tax revenue** for some states.
- The likely **reversion to the old pension scheme by some States** is another **risk looming large** on the **subnational fiscal horizon**.

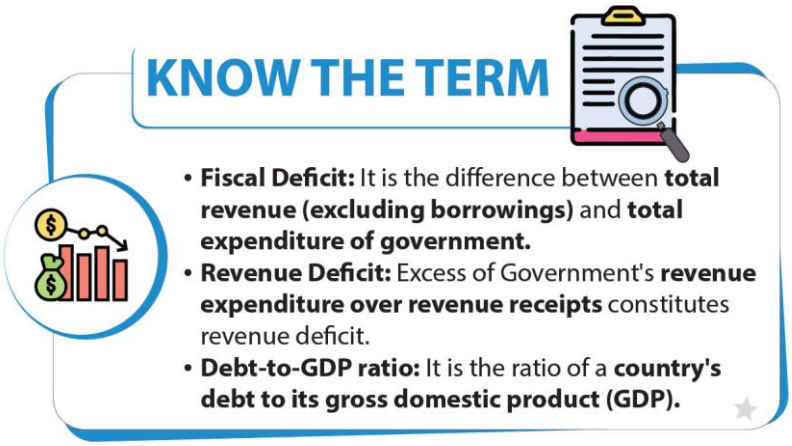
- **Centre's influence** on expenditure policies of States due to **Centrally Sponsored Schemes**.
- **Flattish or modest growth of States own Tax Revenue (SOTR)** due to issues such as inaccurate forecasts, high administrative costs, lack of innovation, economic shocks etc.
- **Lower own non-tax revenues** or returns of Capital Investments due to losses of State PSUs, lack of proper user charges etc.
- **Possible Moderation in Tax Buoyancy**, i.e., the responsiveness of tax revenue growth to changes in GDP.



Way Forward

The **growing threats of global recession**, high inflation, job losses etc. demands major reforms to continuously improve state finances and achieve long-term targets through:

- **Legislative Reforms:** Overhaul the FRBM Act based on the **recommendations** of the **15th FC** and **FRBM Review Committee** for greater transparency and debt sustainability.
  - The 15th FC has recommended a **fiscal deficit limit (as % of GSDP) of 4% for states in 2021-22, 3.5% in 2022-23, 3% during 2023-26.**
  - The FRBM review committee recommended to:
    - ✓ **Replace FRBM** with **Debt Management and Fiscal Responsibility** with **public debt to GDP ratio** as a **medium-term anchor** for fiscal policy in India.
    - ✓ **Creation of a Fiscal Council** to prepare multi-year forecasts, recommend changes to the fiscal strategy etc.
    - ✓ **Rule-based policy framework** with clear grounds of deviations from the target for transparency and predictability etc.



- **Fiscal Reforms:** The states must prioritize debt consolidation as part of **fiscal policies** with proper **standards on reporting of public debt and contingent liabilities**, and their risks.
  - **Targeting double-digit growth in SOTR** (e.g., State excise, stamp duties and registrations, taxes on liquor sales, State GST etc.) to stabilize state budgets and economic planning.
- **Institutional Reforms:** Timely set up of **State Finance Commissions (SFC)** to decide on the assignment of taxes, fees and other revenues to local governments; and strengthen the third tier of the government by increasing the functional autonomy of local bodies.
- **Expenditure Reforms:** Increase public expenditure for **capital formation** and **productive assets**, i.e., expenditure on **R&D, education, health, green energy transition etc.** to:
  - **Spur innovation and progress**.
  - **Improve fiscal health** of State PSUs.
  - **Increase revenues** from state assets.
  - **Address upcoming challenges of recession, climate change etc.**

- **Other measures:**
  - **Continued Ease of Doing Business** to create a congenial environment for the private sector to invest and thrive.
  - **Encourage and facilitate higher inter-state trade and businesses** to realize the full benefit of spillover effects of State capex across the country.

3.5. MICROFINANCE SECTOR

Why in News?

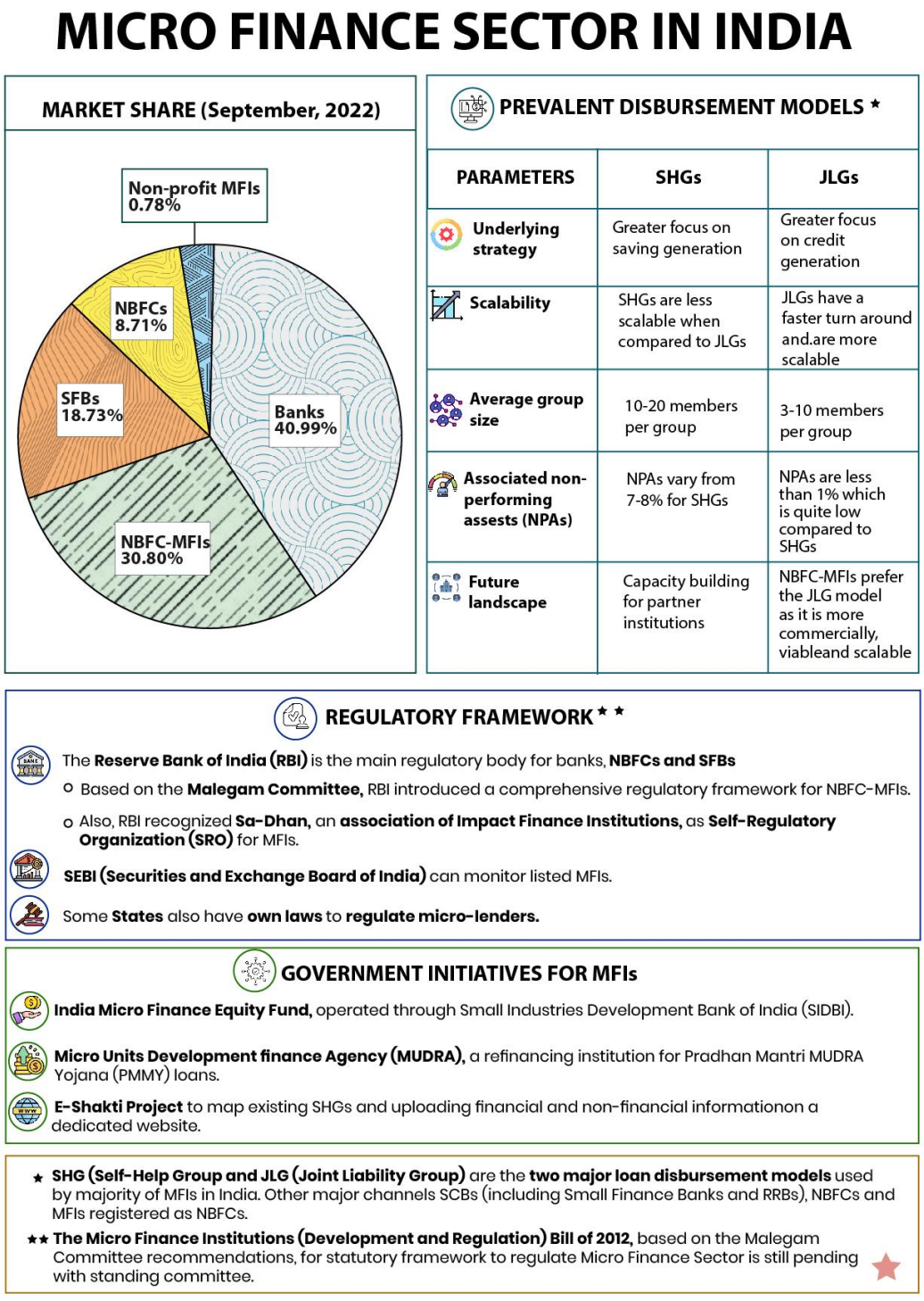
A joint study from Price Waterhouse Coopers (PwC) and the Association of Microfinance Institutions of India has highlighted leading role of Microfinance Institutions (MFIs) in India's economic growth.

India's Microfinance Sector and MFIs

Microfinance is a **form of financial service** which provides **small loans** and **other financial services** to **poor** and **low-income households**. This section of society is also known as '**missing middle**' – lacking access to formal credit for want of a collateral support (refer image for more on the MFI Sector).

Importance of MFIs

- **Promotes Inclusive Growth** by providing collateral free credit to **over 6 crore borrowers** at the bottom of the economic pyramid.
- **Poverty alleviation** by supporting the income generating activities through short tenure loans.
- **Women Empowerment** as a vast majority of users of micro finance facilities are women.
- **Social Equity** as MFIs are actively involved in:
  - **Financing** of **water-sanitation products** and **services**.
  - **Awareness on government schemes** such as Ayushman Bharat Programme and PM SVANidhi Scheme for street vendors.



- **Financial Inclusion**, as MFIs offer a number of other financial services as well (e.g. savings, insurance and remittance) along with credit.
- **Promote Entrepreneurship** through extension of **non-financial services** such as counseling, training and business support.
    - It provides a huge **impetus to the unorganized sector** by promoting employment generation.

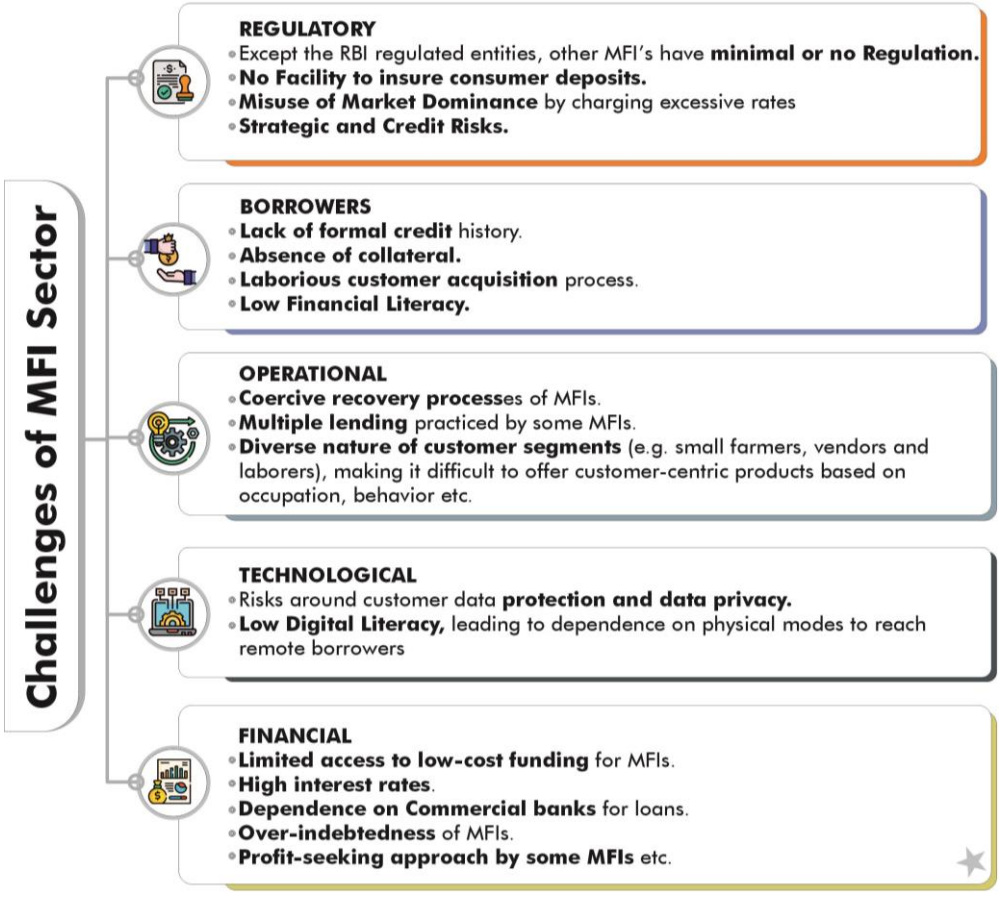
DO YOU KNOW?

Nobel Laureate Muhammad Yunus is credited with laying the foundation of the modern MFIs through establishment of **Grameen Bank in Bangladesh in 1976.**

Way Forward

To achieve sustainable growth, the **future course of the government, regulators, industry** etc. should **work upon:**

- **Bridging the inherent regulatory gaps** through statutory regulatory framework for common definitions and a standardized lending, risk management and control model.
- **Opening new investment channels**, especially for small MFIs who source majority of their debt funding from other financial institutions, reducing their exposure to external factors.
    - Forging partnerships with **corporate, impact investment and exploration of new and reliable business models of capital generation can help in it.**
- **Creation of a Robust Microlending Landscape** through strong monitoring mechanism, i.e.,
    - **Compulsory registration** of all existing **NGO-MFIs**.
    - **Prudential Accounting norms** on capital adequacy and provisioning.
    - Specifying the **role of Auditors** and **supervision of MFIs**.
    - **Promoting inter-agency coordination**.
    - **Creating councils and committees at central, state and district level** to monitor the sector.

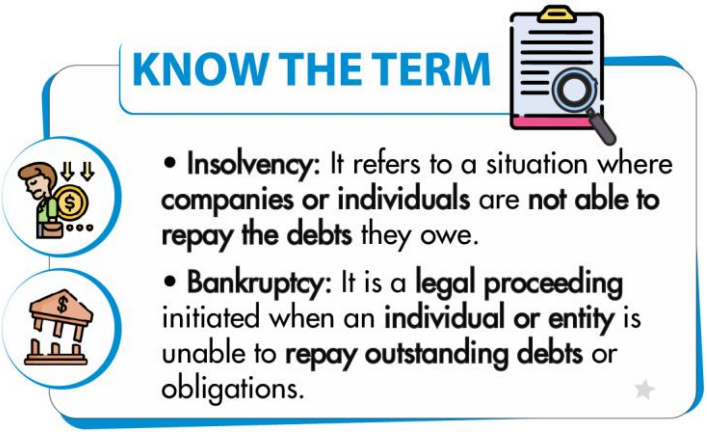


- **Leveraging technology** in developing new products by identifying the prospective needs of borrowers. **E.g., Analytics-based** underwriting and collection models can be used.
- **Developing a 'Fair Practices Code'** for transparency and customer-protection, i.e.
    - **Transparency** on loan terms and interest charges;
    - **Avoiding** ill-practices such as **multiple lending, over-borrowing, and customer harassment through coercive methods of recovery**.
        - ✓ Micro leading happens when **a borrower takes out overlapping loans from multiple lenders.**
    - Establishment of a **suitable grievance redressal mechanism**.
- **Capacity Building of MFIs** through handholding in formative stage, transformation loan to scale up and creation of a **risk/development fund** managed by RBI for loans to **underserved regions**, **refinance or investment to MFIs**.
    - Encouraging MFIs to set up **Local Area Banks (LABs)** or floating of LABs by **commercial banks** can be explored.

3.6. INSOLVENCY AND BANKRUPTCY CODE (IBC)

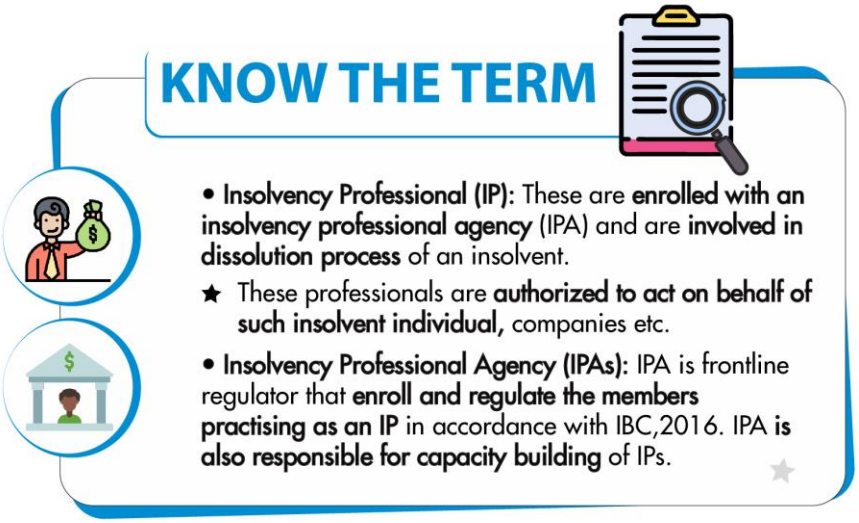
Why in News?

To strengthen the functioning of the **Insolvency and Bankruptcy Code (IBC)**, the **Ministry of Corporate Affairs (MCA)** has released proposed changes to **IBC** for public comments.

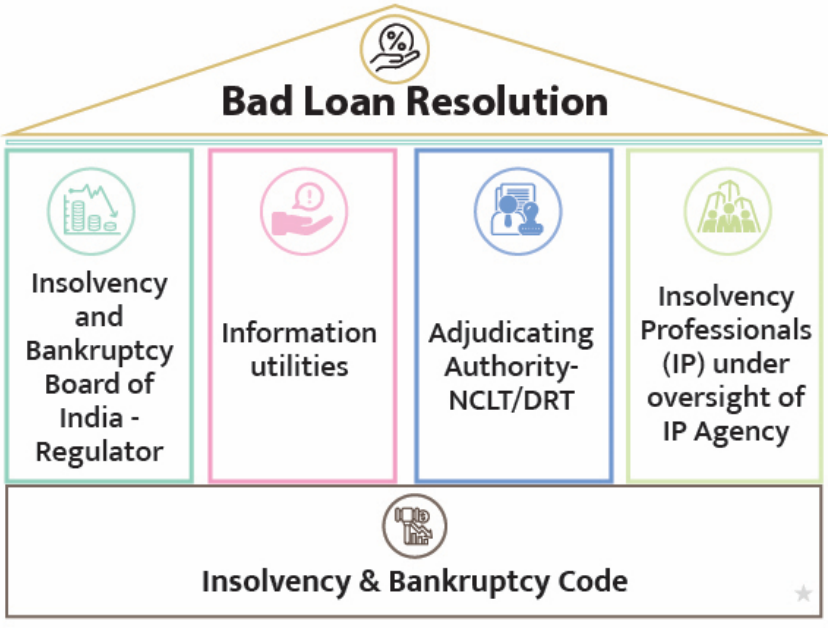


About IBC and its features

- In force since 2016, IBC is India's comprehensive law for a **time-bound, market mechanism** to address the insolvency of corporate persons, partnership firms and individuals.
- It creates a **single law** for insolvency and bankruptcy (refer image for meaning); for a robust, modern, and sophisticated insolvency framework.
- IBC is based on **four pillars** of institutional infrastructure (see image) with:
  - **Insolvency Professionals (IPs)**, members of IP Agency (IPA), to carry out the resolution process.
  - **Information Utilities (IUs)** to store details on lenders, lending terms etc. in an electronic database to facilitate insolvency resolution (e.g., **National E-Governance Services Limited**).
  - The **Insolvency and Bankruptcy Board of India (IBBI)** to regulate functioning of IPs, IPAs and IUs.
  - **Adjudicating Authority {National Company Law Tribunal (NCLT) and Debt Recovery Tribunal (DRT)**. NCLT adjudicates insolvency resolution for companies while DRT adjudicates for individuals.
    - ✓ **National Company Law Appellate Tribunal** (NCLAT) is the **Appellate Authority** for hearing appeals against the orders passed by NCLT.



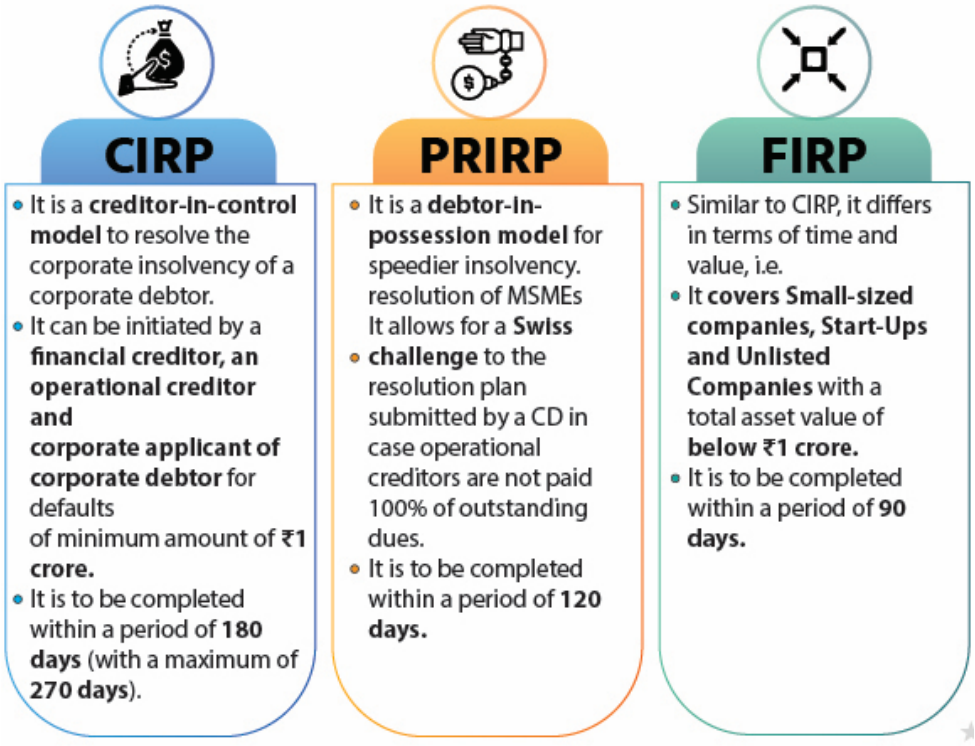
- Based on the **assets value** and **debtor type**, IBC provides for different corporate insolvency resolution processes as:
  - **Corporate Insolvency Resolution Process (CIRP)**.
  - **Pre-Packaged Insolvency Resolution Process (PPIRP)**, and
  - **Fast Track Corporate Insolvency Resolution Process (FIRP)**, refer image for further details on each resolution process.



Benefits of IBC

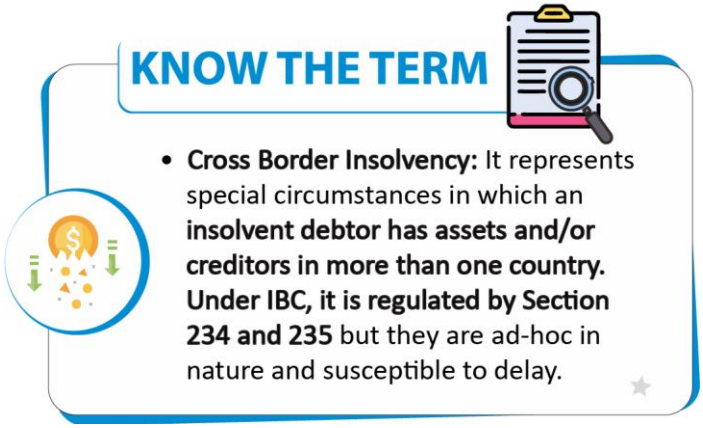
- **Economic Stability and Growth:** IBC ensures this by overhauling the corporate distress resolution regime of India through a time-bound process with a creditor-in-control model.

- **Maximize the value of distressed assets** by reducing the time taken and cost of bankruptcy resolution. By end of September 2022, out of total **5,893 CIRPs**, about **36% were resolved** and **30% were liquidated**.
    - Also, the average time taken for resolution has decreased from **4.3 years** in **2017** to **650 days** in **2021-22**.
- **Promote entrepreneurship** as IBC is an important reform towards **Ease of Doing Business**.
- **Maintain Healthy Credit flow** by ensuring that credit doesn't get struck or turn into bad loans through time-bound resolution.
- **Balance the interests of all the stakeholders** through profound change in **creditor-debtor relationship** and alteration in the order of priority of payment of Government dues.
    - Also, it has brought **behavioral changes** in debtors who are now resolving distress in the earlier stages, to avoid gradual decline in distressed assets value.



Issues in its implementation

- **Adjudicatory Delays**: **Steady Increase** in the **time taken** for **admission of resolution application** as well as the **final resolution** and **liquidation**.
    - E.g., 64% of ongoing CIRPs have crossed the 270 days limit because of **unfilled vacancies at tribunals, failure to adhere with timelines** and litigation at appellate authority (NCLAT) and Supreme Court.
- **Low recovery rates: Declining rates of recovery** with higher haircuts, i.e., the amount of debt that banks forgo. E.g., in FY22, for **100** out of **500 companies** that saw proper resolutions under IBC, the haircuts were **above 90%**.
    - The **reduced market appetite** for insolvent firms due to **pandemic** has further added to **asset value erosion**.



- **Cross-Border Insolvency:** IBC lacks a **standardized cross-border insolvency**, as observed in Videocon and Jet Airways case.
- **Upholding Home Buyers Rights**: Though homebuyers are recognized as **financial creditors** (Chitra Sharma v. Union of India), it requires a minimum threshold of **10%** or **100 homebuyers** (whichever is lower) of one project to initiate the process; causing:
    - Practical difficulties in meeting the required threshold to initiate insolvency proceedings against the real estate owner.
- **Low utilization of IUs:** Despite its vital role in **limiting the Insolvency Resolution time period**, it is the **least utilized** pillar of IBC.
- **Issues in Functioning of IPs and IPAs:** Multiple IPAs regulating IPs lead to various issues such as absence of common standards, non-uniformity in decision-making, lack of due diligence in maintenance of claimants record etc.

Key Changes Proposed in the IBC Framework and its Benefits

Area	Proposed Changes	Potential Benefits
Technology	• Developing **an e-platform to handle multiple processes under IBC** such as case management, delivery of notices, storage of records of CDs undergoing the process etc.	• Transparency, • Reduced Delays • Better decision-making
Admission of CIRP Applications	• **Financial Creditors (FCs) to ascertain default or dispute occurrence** at Information Utilities before CIRP application. • **Adjudicating Authority (AA)** to: ○ Mandatorily admit application and initiate CIRP, if default is established ○ Delete CD right to propose an interim resolution professional (IRP) and give it to AA. IRP will be appointed by AA on IBBI recommendation ○ Empower AA to impose penalties on IBC violations	• Increased reliance on record submitted with IUs during admission process • Reduce time-taken in default verification and swift initiation of CIRP • Ensure Independence of IRP • Decriminalize Offences in business law statutes • Save time of AA
Streamlining of Insolvency Resolution Process	• **Expanding the Pre-packaged Insolvency Resolution Framework (PRIRP)** applicability to a broader range of companies; lowering of threshold for unrelated FCs under PRIRP etc. • **Limiting real estate cases outcomes to default projects** only, formally recognizing the project-wise CIRP or reverse CIRP* • **Appointment of administrator** in specific CIRP by the Central government etc.	• Opportunity for FCs to drive insolvency resolution process for a CD outside of the judicial process • Quicker and more efficient decision making under PRIRP • Reduced hardships and delays in home possession for homebuyers through project-wise CIRP
Liquidation Process	• Recasting liquidation process to enable Committee of Creditors (CoC) to request AA for direct dissolution if liquidation is not feasible • Eliminating duplication of activities between CIRP and Liquidation Process • CoC to supervise and support the liquidator's functioning, and take all decisions in liquidation by simple majority etc.	• Increased efficiency by reducing delays caused by duplication. • Better Supervision of liquidation process etc.
Other Areas	• IBBI to register and regulate a special class of valuers for rendering all valuation-related services • Enable IBBI to issue show cause notice without inspection or investigation	• Improved regulation of service providers.

'*'- Reverse CIRP allows promoters to infuse funds into stalled projects for resolution.

Way Forward to further refine the IBC process

- **Filling up of vacancies** and **setting up of more Benches** or **Specialized Benches** of NCLT.
- **Setting a benchmark for the quantum of haircuts allowed** as per global standards or giving leeway to banks in taking haircuts without inviting enforcement agencies persecution.
- **Adopting the United Nations Commission on International Trade Law (UNCITRAL)** Model Law on Cross-border Insolvency (1997) with certain modifications to suit Indian context.
- **Formulating a professional code** for the CoC, who take over a company in distress.
- **Establishment of a single professional self-regulatory IPAs** like the Institute of Chartered Accountants of India (ICAI) to set standards and regulate the functioning of IPs.

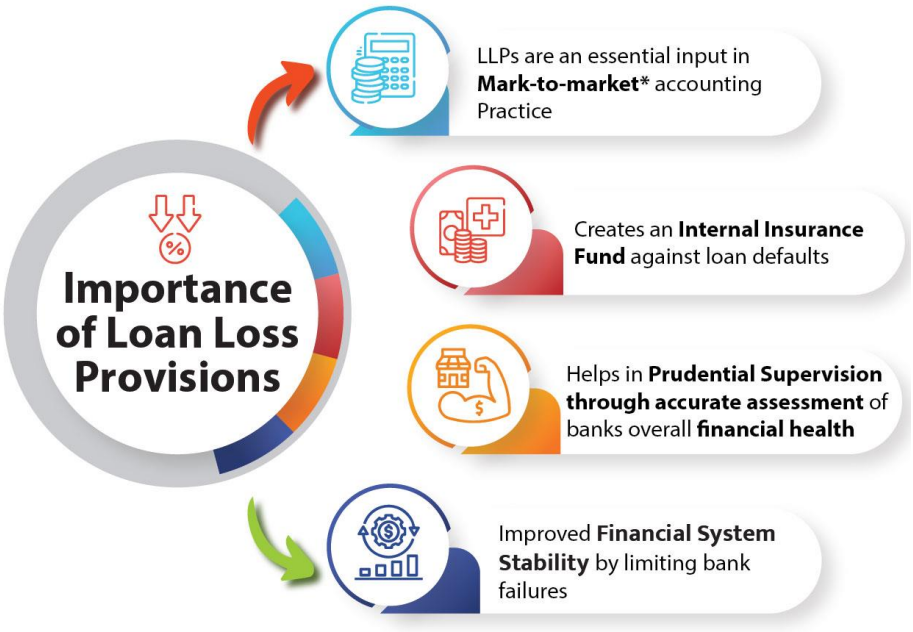
3.7. LOAN-LOSS PROVISIONS (LLPS)

Why in News?

The Reserve Bank of India (RBI) has floated a discussion paper (DP) that seeks to move banks towards an **expected loss-based approach** or **Expected Credit Loss (ECL)** regime for provisioning.

About Loan Loss provisions (LLPs)

- To take potential loan defaults into account, **banks set aside a proportion of the loan** described as **Loan-Loss Provisions (LLPs).**
  - LLPs, therefore, are an **income statement expense** set aside by banks to cover the **loan losses** either completely or partially.
  - Since not all loans become impaired, LLPs (as a credit risk management tool) **are used by banks to mitigate expected losses** on bank loan portfolio.



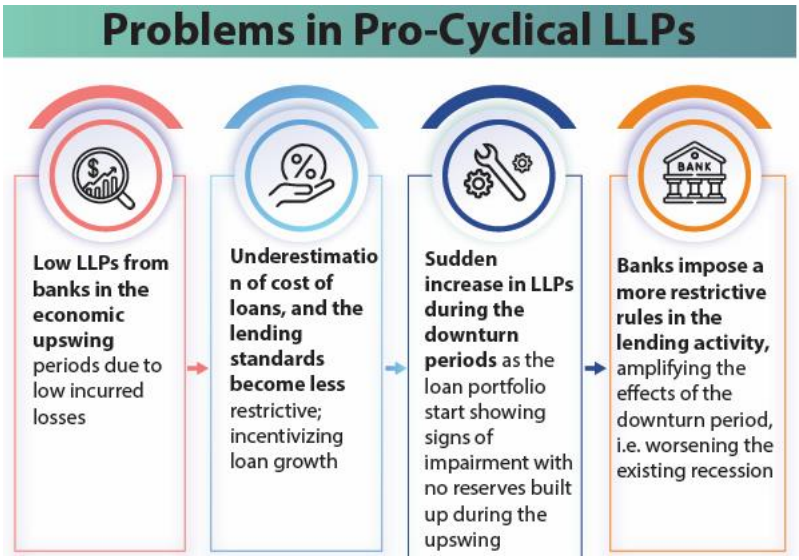
****' - Mark to market (MTM)** is a method of measuring the fair value of accounts that can fluctuate over time, such as assets and liabilities

Approaches for LLPs

- **Factors:** Levels of LLPs depends on a number of factors such as:

Banks loss history and internal ratings	**Competitive analysis of other banks**
Expected levels for safety and soundness of the bank	**Economic conditions**

- **Current Approach:** Presently, in India, banks are required to make loan loss provisions based on an '**incurred loss' approach**.
  - It is a **pro-cyclical prudential regime** in which banks need to provide for losses that have occurred/incurred. Here the coverage increases with specific provision when loans start deteriorating and become nonperforming.
    - ✓ As an accounting reference, it is promoted by **International Accounting Standard - IAS 39** Financial Instruments: Recognition and Measurement.
    - ✓ In 2014, the **IAS 39 was superseded by IFRS 9 (International Financial Reporting Standards)** – changing the banks' loan loss provisioning practices to **expected loss-based approach**.



- **Proposed approach:** The expected loss-based approach is a **countercyclical** or **dynamic forward-looking framework** designed to **build up reserves of provisions** during the **good economic times** through higher LLPs and use them in the **economic downturn** by reporting lower LLPs.
  - It has a **smoothening effect** at the **individual bank level** and on the **overall business cycle** as well, helping to **avoid any systemic issues**.

Proposed Framework on LLPs under the ECL Regime

- First proposed to be adopted from **April 2018** but was deferred. (In India, **bigger NBFCs** are **already following** the **ECL approach** for estimating credit losses.)
- **Guidelines:**
  - Banks to classify financial assets (primarily loans) into **3 categories**: Stage 1, Stage 2, and Stage 3, **depending upon the:**
    - ✓ **Assessed credit losses** on them, at the time of **initial recognition**, and
    - ✓ On **each subsequent reporting date** and make necessary provisions.

International Financial Reporting Standards (IFRS)

- **IFRS** are '**a set of accounting standards** that govern **how** particular types of **transactions and events should be reported in financial statements'.**
- They are developed and maintained by the **International Accounting Standards Board (IASB)** – one of the **two standard** setting boards of **IFRS Foundation**.
  - **International Sustainability Standards Board (ISSB)** is the second board to set the IFRS Sustainability Disclosure Standards.
- The **IAS**, issued by the antecedent **International Accounting Standards Council (IASC)**, are endorsed, and amended by the **IASB**.
  - **IASC** was formed in **1973** and in **2001** it was replaced by **IFRS**.

Criteria	Stage 1	Stage 2	Stage 3
Classification of Financial Assets	**No significant increase** in **credit risk** since initial recognition or that have **low credit risk** at the reporting date.	**Significant increase in credit risk** since initial recognition, but there is **no objective evidence of impairment.**	Financial assets with **objective evidence** of **impairment** at the reporting date.
Provisions for these assets	**12-month expected credit losses** are recognized and **interest revenue** is calculated on the **gross carrying amount** of the asset	**Lifetime expected credit losses** are recognized, but **interest revenue** is still calculated on the **gross carrying amount** of the asset	**Lifetime expected credit loss** is recognized, and **interest revenue** is calculated on the **net carrying amount**

  - **Banks can design and implement their own models** for measuring ECL while estimating loss provisions in line with proposed principles'.
  - **Regional Rural Banks (RRBs)** and **smaller cooperative banks** (threshold to be decided later) are proposed to be kept out of the framework.

Potential Benefits and Concerns over ECL regime	
Benefits	**Concerns**
• **Enhanced Bank Solvency** • **Increased Resilience of Banking System** as it is likely to result in excess provisions to smooth out loan losses in downturns. • **Align India's credit-loss provisions** with **global regulatory framework**. • **Increased Transparency** in credit-loss provisions.	• **High impact** of increased provisions on Bank's capital. • **Yet to be tested at a larger level** i.e., ECL research is limited to few countries such as Spain, Chile etc. • Its **ability to generate sufficient provisions** depends on the **severity** and **time lag** of the **existing crisis.** • **Business cycle developments,** i.e., upswing and downturn are **hard to detect.**

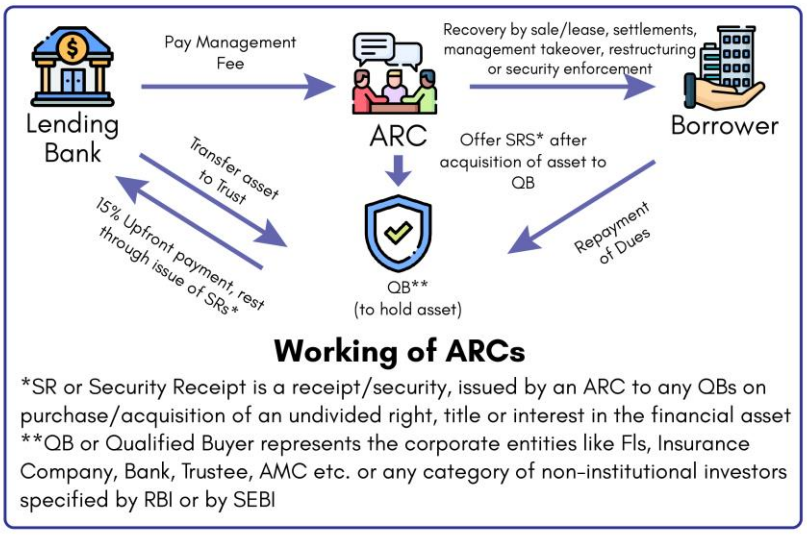
Steps proposed to mitigate the concerns

- **RBI to issue broad guidance**, specifying detailed expectations on the factors and information that will be required to be considered while designing the **credit risk models**.
- **Proposed ECL models** from banks to be **independently validated to verify**:
  - **Compliance** with RBI guidance,
  - **Calibrated use of relevant available data** with bank,
  - **Proper back-testing** and
  - **Internal validation** of the models to remove any bias, etc.
- **RBI to specify a floor – the minimum provisions needed for each stage.**
- **Sufficient time to be given for implementation** of the framework due to the **complexities involved in designing the models and the time required to test them**.
- **Banks will have the option to phase out** the effect of **increased provisions** on **Common Equity Tier I capital**, over a **maximum period of five years** (as permitted under the **Basel guidelines**). This will aid in smooth transition.

Related News

National Asset Reconstruction Company Ltd (NARCL) acquires first stressed asset

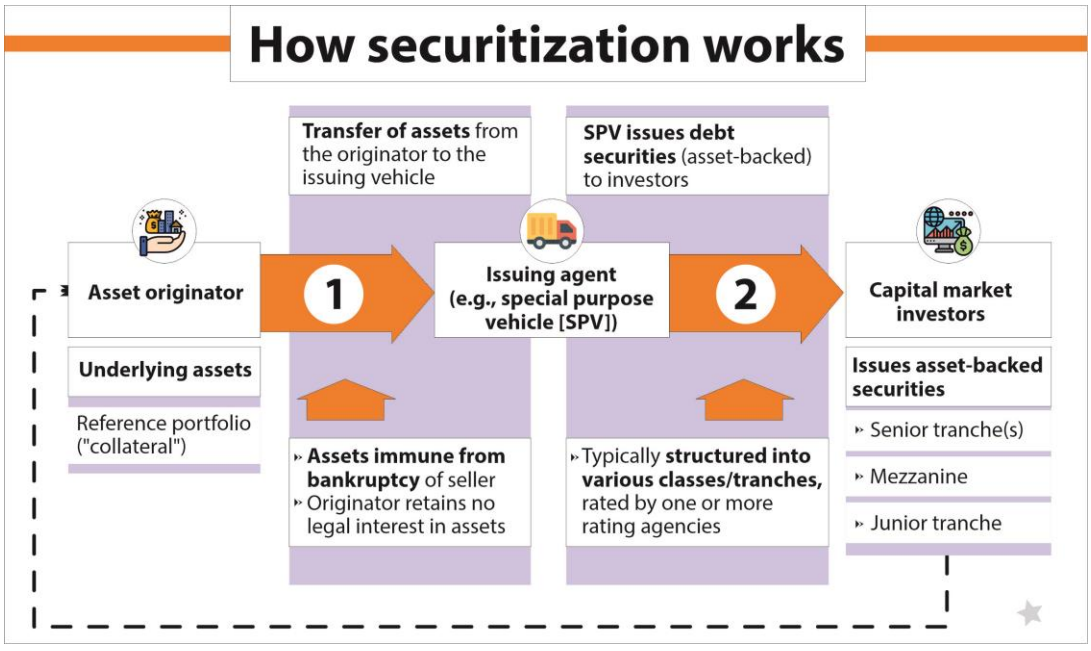
- NARCL, an **Asset Reconstruction Company (ARC)/bad bank,** has acquired its **first stressed asset- Jaypee Infratech**- from lenders.
- NARCL/Bad bank is a **corporate structure that isolates risky assets held by banks in a separate entity. It** was announced in Union Budget 2021-22.
    - NARCL will take over **large value NPA accounts (over ₹500 crore) from banks** with total assets to be acquired of **around ₹2 lakh crore**.
    - Stressed assets will be acquired through a **15 percent upfront cash payment** and **85 percent in form of security receipts (SR).**
    - NARCL is incorporated **under Companies Act** with **Public Sector Banks hold a majority stake**.
    - It is **registered with RBI as an ARC** under **Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002**.
- **Significance of Bad Bank**
    - **Reduce NPAs of banks**, improving financial system stability and efficiency.
    - **Improve recoveries and promote competition**, as NARCL allows Swiss Challenge to get the best for banks from stressed assets.
    - **Opportunities for other ARCs at MSME's level**, as NARCL reconstruct assets only where banks total exposure is more than ₹500 crore.



3.7.1. SECURITIZATION OF STRESSED ASSETS FRAMEWORK (SSAF)

Why in News?

Recently, RBI floated a discussion paper on **Securitization of Stressed Assets Framework (SSAF)**.



About Securitization and SSAF

- **Securitization** refers to a process that involves **pooling of loans** and then **selling them** to a **Special Purpose Entity (SPE)**, which then **issues securities** backed by the **loan pool**.
    - SPE, also called as Special Purpose Vehicle (SPV) represents a **company, trust** or **other entity** organized for a specific purpose.
- Securitization involves transactions which **redistribute credit risk in assets** by repackaging them into **tradable securities** with **different risk profiles** (see image on how securitization works).
- These assets can be
    - **Standard assets**, i.e., loans which are not classified as **non-performing asset** (NPA) or assets with a delinquency up to 89 days, and

- **Stressed assets**, i.e., loans classified as **NPA**.

- **SSAF aims to enable securitization of NPAs through the SPE route, on the lines of securitisation of standard assets.**
  - Currently, in India, the **Securitization of Standard Assets is allowed through the SPE route in accordance with Basel guidelines** that came into force from January 1, 2018.
  - The securitization of **Stressed Assets** is done by licensed **Asset Reconstruction Companies (ARCs)** under the **SARFAESI Act**.
  - In 2019, the **Task Force on Development of Secondary Market for Corporate Loans decided to introduce SSAF** in addition to the ARC route, similar to the framework for securitisation of standard assets.
- Under SSAF, the **NPAs originator will sell them** to an **SPE** by **issuing securitization notes**.
  - The SPE, in turn, will appoint a **servicing entity** to **manage stressed assets**, typically with a **fee structure** that **incentivizes** them to **maximize recoveries of NPAs**.
- Investors who buy **securitization notes are paid based on recovery from the underlying assets using the waterfall mechanism** depending upon the seniority of the tranches.

3.8. INLAND WATERWAYS IN INDIA

Why in news?

Recently, Prime minister unveiled inland waterways projects worth over Rs 1000 crore to increase transport, trade & tourism in eastern India.

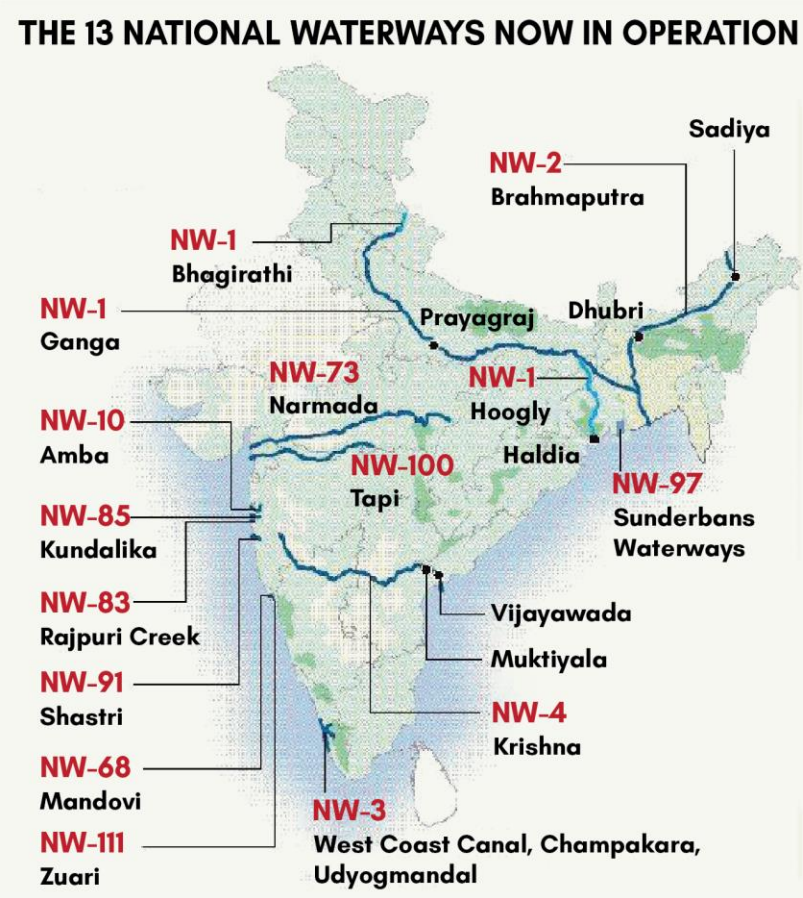
More in news

- **Haldia Multi-Modal Terminal** in West Bengal was **inaugurated under Jal Marg Vikas Project** with cargo handling capacity of around over 3 Million Metric Tonnes Per Annum (MMTPA).
- **Maritime Skill Development Centre** for the Northeast was inaugurated in **Guwahati.**

Jal Marg Vikas project (JMVP).

- **Implemented by:**
  - Ministry of Ports, Shipping and Waterways.
  - **Inland Waterways Authority of India (IWAI)** with support of the **World Bank.**
- **Aims:** To develop the stretch between **Varanasi to Haldia** (on National Waterway 1) for navigation of large vessels weighing up to 1500-2000 tonnes.
- **Other features:**
  - **IWAI** came into **existence in 1986**, primarily for the **development and regulation** of inland waterways for shipping and navigation.
  - Multi-Modal Terminals are a part of **Jal Marg Vikas project (JMVP).**
  - **Haldia MMT** is one of the three Multi-Modal Terminals being constructed on Ganga, 2 other MMTs constructed in **Sahibganj and Varanasi under the project.**

- Foundation stone for **a ship repair facility** and an elevated road at **Pandu Terminal** in Guwahati was laid.
- More than **60 community jetties are being constructed along the river Ganga** to boost economic activities and improve the livelihoods of local communities in the region.

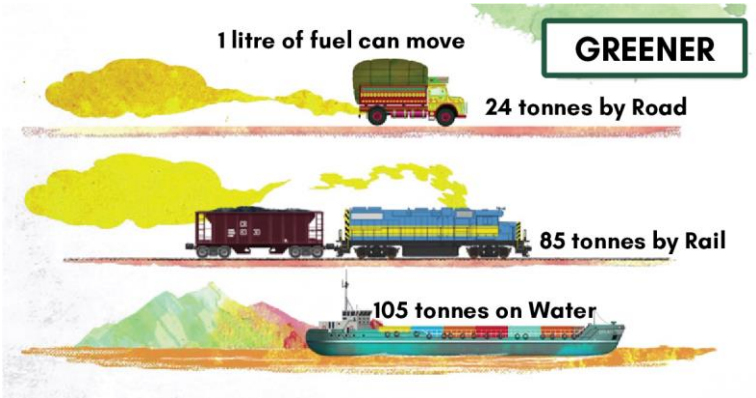


THE LINKS AND THE LENGTHS

NW-1	Ganga-Bhagirathi-Hooghly (Haldia-Prayagraj)	1,620 KM
NW-2	Brahmaputra river	891 KM
NW-3	West Coast Canal-Champakara Canal-Udyogmandal Canal	205 KM
NW-4	Krishna (Muktiyala-Vijayawada)	82 KM
NW-10	Amba river	45 KM
NW-83	Rajpuri Creek	31 KM
NW-85	Revadanda Creek-Kundalika river	31 KM
NW-91	Shastri river-Jaigad Creek System	52 KM
NW-68	Mandovi river (Usgaon Bridge- Arabian Sea)	41 KM
NW-111	Zuaririver (Sanvordem Bridge-Marmugao Port)	50 KM
NW-73	Narmada river	226 KM
NW-100	Tapi river	436 KM
NW-97	Sunderbans Waterways	172 KM

Potential of Inland Water Transport (IWT)

- **National Waterways Act 2016** declares a total of **111 National Waterways**. Out of this, 17,980 km of the river and 2,256 km of canals can be used by mechanized crafts
- Inland Water Transport in India has **only 0.5% of total transport**; compared to 42% in Netherlands, China 8.7%; USA 8.3% and Europe 7%.
    - **Road has freight movement around 65%** and Rail has around 27%.
- As per Maritime India Vision (MIV) 2030 document, **cargo movement on National Waterways is targeted as 200 MMT by 2030** from current level of 83.61 Million Metric Tonne (MMT) during FY- 2020-21.

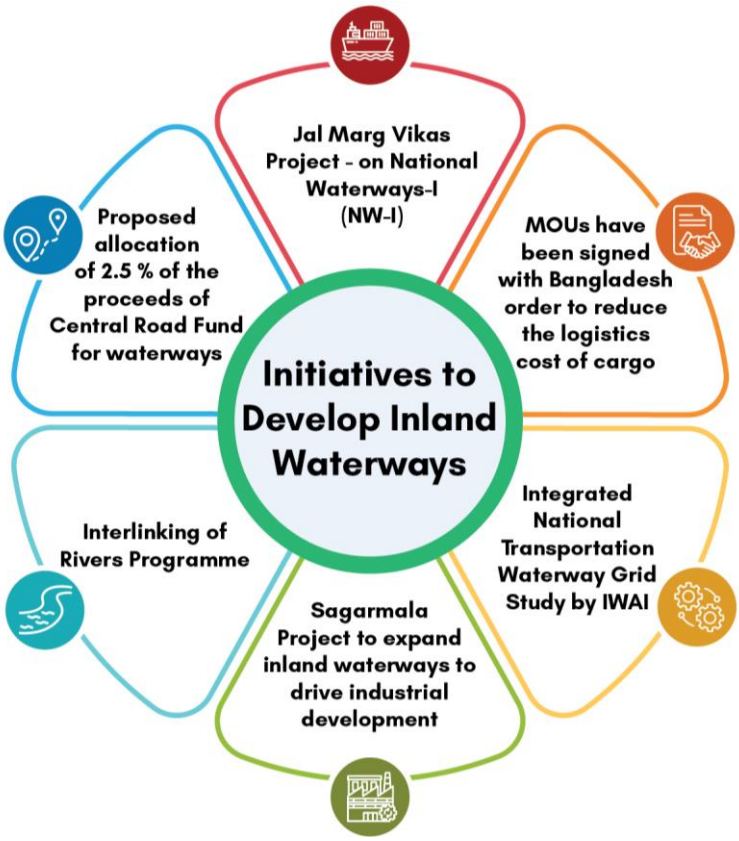


Benefits of inland waterways

- **Capital Savings**: The capacity augmentation of navigation on NW-1 through the Jal Marg Vikas Project estimated to entail a capital expenditure of Rs. 2.53 crore per km only.

- **Compared to this road and rail each cost over Rs 5 crore per km**.

- **Savings in transportation cost**s: IWT would have positive impact on the overall logistics cost. For e.g: 1 Horse Power energy moves 150 kg on road, 500 kg on rail and 4000 kg on water (See infographics).
- **Environment friendly**: Use of modern inland water vessels, with natural gas (LNG/CNG) as fuel will reduce emission of SOx, NOx (70%), particulate matter (95%) and CO2 (25%). Other factors include-
  - **Least fuel consumption per ton-km**, burden on road and rail transportation will come down resulting in less fuel consumption and consequent environmental pollution.
  - **LNG/CNG engines have lower noise level** than diesel engines, hence less impact on ambient noise level.
  - **Improved river flow** due to improvement/ augmentation of navigation facilities will in turn benefit aquatic flora and fauna.
- **Enhanced regional trade:** IWT give boost to trade between India and Bangladesh, India and Myanmar through **Kaladan project**.
- **Other benefits:**
  - **Increase in economic opportunities** in the form of employment and business opportunities (both in relation to cargo movement and peripheral petty business activities).
  - **Access to local communities** in the form of a mode of transport to conduct activities on both sides of the river.



Challenges in developing National Waterways

- **Very low level of investment**: Lack of convergence between IWT and other modes of transport and more emphasis on development of rail and road networks resulted in low level of expenditure on IWT.
- **High cost of development of Ancillary facilities:** Development of modern-day multimodal terminals, jetties, ferry points and river information systems is highly capital intensive.
- **Perception of IWT investment as high-risk investment:** This was a disincentive for the banks to advance loans to private players. It discouraged private participation also even through PPP mode.
- **Technical Challenges:** Such as development and maintenance of Fairway width of 2.5 m to 3.0 m depth, irregular siltation, Speed Control regulations to avert bank erosion and safety of other users, Safety against cross ferries, etc.

Way Forward

- **Setting up Navigational Infrastructure:** Absence of essential infrastructure such as cargo terminals and jetties has been one of the reasons for the slow development of water transport.
- **Working with Nature:** Water traffic should not impact the **aquatic biodiversity** , measures like ban on dredging in protected habitat areas.
  - All vessels should comply with **`zero discharge'** standards to prevent solid or liquid waste .
- **NITI Aayog in its Action Plan recommended** to increase the connectivity and efficiency of inland waterways by -
  - **Streamlining the governance of inland waterways** and bringing an overarching body to oversee Inland Water Transport such as the IWAI to more consistency in the rules and strategy of the sector.
  - **Ease restriction on Sea River movement** by Utilizing a single vessel for both inland and coastal waters, lowers transport costs and minimizes handling.
  - **Develop inland waterways transport** to facilitate movement of goods to neighbouring countries and the Northeast.

- **Develop measures for year round navigation –** Seasonality of this mode of transport reduces its adoption.
  - ✓ **Efforts should be made to develop deeper stretches of the river,** i.e., at least 2.5 m to 3 m to achieve year-around navigation.
  - ✓ **Adequate maintenance of rivers,** including continuous dredging to maintain adequate water depth for servicing shipping lines should be ensured.

3.9. TECHNICAL TEXTILES

Why in news?

Recently the **Ministry of Textiles** issued two guidelines under the Flagship Programme of **National xtiles Mission (NTTM)**.

About the Guidelines

- **Two Guidelines included:**
  - General Guidelines for Enabling of Academic Institutes in Technical Textiles- for Private& Public Institutes.
  - General Guidelines for Grant for Internship Support in Technical Textiles (GIST).
- **Under Education, Training, and skilling component of NTTM**, goal is to enhance the level of **education and exposure** to prospective **Indian Engineers/Professionals in Technical Textiles** to ensure adequate volume of talent is developed in this sunrise sector.
- **General Guidelines for Enabling of Academic Institutes in Technical Textiles- for Private & Public Institutes**-
  - It will enable **New Technical Textiles Degree Programme (UG & PG)** and **updating of existing** conventional degree programmes **with new papers of Technical Textiles.**
  - **Funding provision**
    - ✓ **Assistance for introducing full course** in technical textiles an be upto 20 crores PG course and upto 10 Crores at UG level.
  - It will **put emphasis on creating an effective and world-class knowledge ecosystem** to make India a world leader in the field of technical textiles.
- **General Guidelines for Grant for Internship Support in Technical Textiles (GIST)**-
  - **Grant of upto INR 20,000 per student per month** shall be provided to the empaneled companies for providing internships to B.Tech students of relevant Departments/Specializations in Public/Private Institutes.

National Technical Textile Mission (NTTM)

- **Launched by:** Ministry of Textiles.
- **Aim:** To make **India as a global leader in Technical Textiles** and increase the use of technical textiles in the domestic market.
- **Target:** Domestic **market size of technical textile to $ 40-50 Billion by 2024** with average growth rate of 15-20% per annum.
- **Focus**
  - **Develop usage** of technical textiles **in various flagship missions, programmes** of the country including strategic sectors.
  - **To facilitate market development, market promotion,** international collaborations, investment promotion.

Significance of Technical Textile

- **Cost-effective and user friendly:** It serves as **tough, lightweight alternatives to metals and allow for numerous customization options**.
  - It **provides extra strength and stiffness**, thus making it suitable for use in the transportation, heavy industrial, ballistics, aerospace, and marine sectors.
- **Environmentally sustainable**: It is developed through innovative technology, the fibre breaks down into simple CO2 and H2O, **reducing textile waste and limiting environmental impact.**
- **Production is flexible, continuous, and versatile**: Technical Textiles are versatile material finding application in a wide range of industrial, health, and consumer products.
- **Lighter weight while being durable:** It is used in heavy technical fabric such as airbags, conveyors, sailcloth, bulletproof fabric, as well as the light technical fabric used in medical apparel, sportswear is woven fabrics.
- **Other benefits:** Logistical Convenience, High levels of **uniformity**, Consistency in high-temperature applications, Renders the product multifunctional etc.

Technical Textiles

- Textiles materials and products **manufactured primarily for technical performance and functional properties** rather than aesthetic characteristics.

Technical Textiles and India

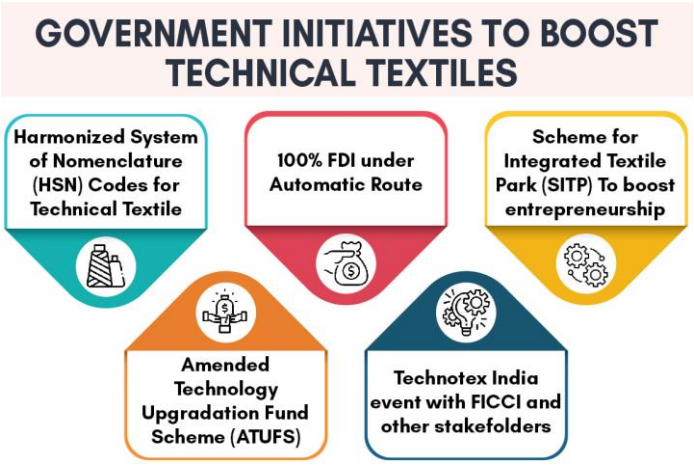
- **India 5th largest market** for technical textile in world.
- India's **current share is around $20 Billion (around 8%)** of world market size of $250 Bn.
- **8% is annual average growth** rate of this sector in India.
- **5-10% is penetration level** of technical textiles in India at against 30-70% in advanced countries

12 different categories

- **Meditech**: Diapers, Sanitary Napkins, Disposables, Contact Lens, Artificial Implants
- **Agrotech**: Shadenets, Fishing Nets, Mulch Mats, Ant - hail Nets
- **Mobiltech**: Airbags, Helmets, Nylon Tyre Cords, Airline Disposables
- **Buildtech**: Cotton Canvas Tarpaulins, Floor and Wall Coverings, Canopies
- **Oekotech**: Recycling, Waste Disposal, Environmental Protection
- **Clothtech**: Zip Fasteners, Garments, Umbrella Cloth, Shoe Laces
- **Packtech**: Wrapping Fabrics, Polyolefin Women Sacks, Leno Bags, Jute Sacks
- **Geotech**: Geogrids, Geonets, Geocomposites
- **Protech**: Bullet Proof Jackets, Fire Retardant Apparels, High Visibility Clothing
- **Hometech**: Mattress and Pillow Fillings, Stuffed Toys, Blinds, Carpets
- **Sportech**: Sports Net, Artificial Turf, Parachute Fabrics, Tents, Swimwear
- **Indutech**: Conveyer Belts, Vehicle Seat Belts, Bolting Cloth

Challenges in technical textile sector

- **Lack of Awareness**: Benefits of technical textiles is still unknown to the larger masses of the country, due to **lack of marketing and basic knowledge** about these products.
- **Development of Skilled Workforce**: Processes to manufacture different products of technical textile require different and high level of skill sets from workers which is currently absent in the domestic industry.
- **Lack of Research & Development**: As a result of this, Indian technical textiles industry is facing is issue of **lack of product diversification** (Packtech alone accounts for 41% of the total market share).
- **Imports of technical textile**s: India imports significant amount of technical textiles mainly cheap products from China and hi-tech products from US & Europe.
    - This signifies that **Indian technical textiles industry is lacking scale and the capacities** to manufacture high-tech products.
- **Structural issues**: Importing of raw materials for technical textile products is costlier in India as compared to importing finished goods due to the inverted duty structure.



Way ahead

- **Awareness creation**: Government and the industry need to build a solid infrastructure to educate people about technical textiles.
- **Skilled workforce**: There is an immediate need to organize specific forums for interaction between industry and academia so that specific curriculum could be developed for technical textiles.

- **Opportunity for domestic manufacturers**: Indian industry need to develop manufacturing capabilities for raw material of technical textiles while technical textiles manufacturers need to upgrade their machinery.
- **Continuously expand** the HSN Code list of technical textiles to keep pace with the development and emergence of ever newer products in the industry.
- **Continuously identify** and focus on technical textile products and segments to align the support with priorities of **Atmanirbhar Bharat** (Self-reliant India) and expansion of India's exports.

3.10. NEWS IN SHORTS

3.10.1. MULTI-STATE COOPERATIVE SOCIETIES (MSCS) ACT, 2002

- Cabinet has approved three national level Multi-State Cooperative Societies (MSCS) under MSCS Act, 2002.
- Setting up of three national level MSCS will help in **achieving the goal of 'Sahakar-se-Samriddhi' (Prosperity through Cooperation)** through inclusive growth model of cooperatives.

3 New Cooperative bodies	Significance
National Multi- State Cooperative Export Society	• **Act as umbrella organization for exports** of surplus goods/service. • **Primary to national level cooperatives societies** including primary societies, district, state and national level federations and MSCS **can become its member.** • Higher exports will **increase production of goods and services** and increase **employment opportunities**. • Increased export will **promote "Make in India"** thus leading to **Atmanirbhar Bharat.** • Help cooperatives in getting benefits of export related government schemes/policies.
National Multi- State Cooperative Organic Society	• **Unlock demand and consumption of organic products** in domestic and global markets. • Help **farmers to get high price of organic product** through aggregation, marketing and branding. • **Provide institutional support** for aggregation, certification, storage, processing etc. • Better **management of entire supply chain** of products.
National Multi- State Cooperative Seed Society	• Act as an **apex organization for production, procurement, processing, branding,** labelling, packaging, storage, marketing and distribution of quality seeds. • Develop system for **preservation and promotion of indigenous natural seeds**. • **Increase seed replacement rate**, varietal replacement rate, ensuring role of farmers in quality seed cultivation. • Quality seeds production **reduces dependence on imported seeds, boost rural economy, strengthen food security.**

- Though '**Cooperative Societies' is a State Subject**, MSCS is regulated by Centre under MSCS, Act 2002.
  - MSCS are cooperative societies whose **activities are not confined to one state** and serve interests of individuals in more than one state.
- In related development, Ministry of cooperation is planning to **set up world's largest university for cooperative sector** for **promoting cooperative education, training, research and development**.
  - Cooperative University will award degrees for managerial positions, diplomas for supervisory jobs and certificates for operational-level positions annually by 2026-27.

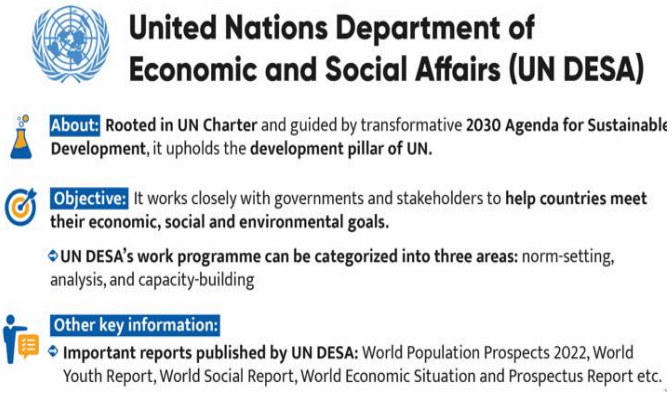
3.10.2. GLOBAL ECONOMIC PROSPECTS REPORT BY WORLD BANK

- **Flagship report** (issued twice a year) **examines global economic developments** and **prospects**, with a **special focus on emerging markets** and **developing economies (EMDEs).**
- **Key Projections**
  - **Global GDP Growth: 1.7%** in **2023** - **third-weakest pace** since 1993, overshadowed only by **2009 and 2020 global recessions.**
    - ✓ **India** is expected to grow **at 6.6% in 2023.**
  - **Reasons for slowdown:** Elevated Inflation, Higher interest rates, reduced investment and disruptions caused by Russia-Ukraine war.
  - Any **additional adverse shocks** could push the global economy into **recession.**
    - ✓ Recession is a **significant, pervasive**, and **persistent decline** in economic activity – at least for **two consecutive quarters** of negative GDP for most analysis.
  - **EMDEs are facing a multi-year period of slow growth** driven by heavy debt burdens and weak investment.
    - ✓ This may threaten progress on broader **development** and **climate goals** in EMDEs.
  - **Small states** - countries with 1.5 million people or fewer - are **more vulnerable** because of their **reliance on external trade** and **financing**, **limited diversification**, **elevated debt**, and **susceptibility to natural disaster.**

- **Steps needed for EMDEs** include **more investment to create jobs** and increase output, **greater debt transparency**, stronger **cooperation to increase cross-border trade** etc.

3.10.3. WORLD ECONOMIC SITUATION AND PROSPECTS 2023 REPORT

- It is produced by **United Nations Department of Economic and Social Affairs (UN-DESA),** in partnership with UN Conference on Trade and Development and five UN regional economic commissions.
- **Key highlights**
  - COVID-19 pandemic and war in Ukraine battered world economy in 2022.
  - **World output growth is projected to decelerate** from an estimated 3.0 percent in 2022 to 1.9 percent in 2023.
- **Recommendations**
  - Reallocation and **reprioritization of public expenditures**.
  - **Strengthening social protection** systems.
  - **Strategic public investments in education**, health, digital infrastructure etc.



3.10.4. WORLD ECONOMIC FORUM (WEF) RELEASES GLOBAL RISK REPORT 2023

- Report is published annually based on **Global Risks Perception Survey.** It highlights key risks across **five categories**: **Economic, Environmental, Geopolitical, Societal and Technological**.
  - Global risk is defined as **possibility of occurrence of an event or condition** which, if it occurs, would **negatively impact a significant proportion of global GDP**, population, or natural resources.
  - Global risks ranked by severity over **short and long term**. (Refer image)
- **Key findings**
  - **Top 5 risks for India** are Digital inequality, Geopolitical contest for resources, Cost-of-living crisis, Debt crises, Natural disasters, and Extreme weather events over short and medium term.
  - **Cost of living dominates global risks** in next 2 years while climate action failure dominates next decade.
  - **Economic aftereffects of COVID-19 and Ukraine war** resulted in **rising inflation, rapid normalization of monetary policies**, low-growth, low-investment era.
  - **Technology** such as AI, quantum computing and biotechnology, etc. will **exacerbate inequalities and digital divide.**
  - Only **34% of climate finance** currently allocated to **climate adaptation** worldwide.
- **Recommendations**
  - **Investing in multi-domain**, cross-sector risk preparedness.
  - **Improving risk identification** and foresight.
  - **Re-building and strengthening global risk preparedness** cooperation.
- WEF established in 1971 as a **not-for-profit foundation** and is **headquartered in Geneva, Switzerland**.
  - It is **International Organization for Public-Private Cooperation**.

3.10.5. SOVEREIGN GREEN BONDS (SGRBS)

- **RBI will issue 5-year and 10-year green bonds** of Rs 4,000 crore each **in current financial year.**
- Green bonds are **bonds issued by any sovereign entity, inter-governmental groups or alliances** and corporates with the aim that **proceeds of bonds are utilised for environmentally sustainable projects.**

- SGrBs were **announced in Union Budget 2022-23** and **framework for SGrBs was issued** (by Ministry of Finance) **in November 2022.**

- **Significance of Green Bonds**
  - An important **financial instrument to deal with threats of climate change** and related challenges.
  - Influence business strategy by **offering investors a platform to engage in good practices**.
  - Will help India in **tapping requisite finance for deployment in public sector projects** aimed at **reducing carbon intensity of economy.**
- **Challenges in realizing potential of Green Bonds**
  - **Greenwashing** due to eligibility of wide range of projects.
  - **Lack of robust impact assessment framework** to quantify environmental outcomes.
  - **Liquidity issues for investors** as it is still a small market.

SGrBs by RBI will be

- **Issued through Uniform Price Auction** and **5%** will be **reserved for retail investors.**
- **Eligible for Repo** and **Statutory Liquidity Ratio (SLR) purpose.**
- Eligible for **trading in the secondary market**.
- **Designated as specified securities for investment** in Government Securities **by non-residents.**

3.10.6. DOMESTIC SYSTEMICALLY IMPORTANT BANKS (D-SIBS)

- SBI, ICICI Bank, HDFC Bank have continued to remain Domestic Systemically Important Banks (D-SIBs).
- **D-SIBs** are those **interconnected entities,** whose failure can impact the whole of the financial system and create instability i.e., they are **'too big to fail'**.
  - Concept of D-SIBs was **adopted in aftermath of 2008 financial crisis**.
- D-SIBs are designated on basis of their **Size; Interconnectedness; Lack of readily available substitutes or financial institution infrastructure; and Complexity.**
  - In order to be listed as D-SIB, a **bank needs to have assets that exceed 2 percent of national GDP.**
- RBI first issued the **framework for dealing with D-SIBs in 2014**.
  - D-SIBs framework requires **RBI to disclose the names of banks designated as D-SIBs starting from 2015** and place these banks in appropriate buckets depending upon their **Systemic Importance Scores (SISs)**.
  - Based on bucket in which D-SIB is placed, **additional common equity (CE) requirement has to be applied** to it.
  - **CE Tier 1 requirement for SBI is 0.60%** of Risk Weighted Assets, while it **is 0.20% for ICICI Bank and HDFC Bank**.
- Similarly, in case a **foreign bank having branch presence in India** is a **Global Systemically Important Bank (G-SIB).** It has to maintain additional CET1 capital surcharge in India as applicable by rules concerning G-SIB.
- **Advantages to SIBS**
  - Receive government support in times of financial distress and attract closer supervision and regulation from country's central bank.

3.10.7. UTKARSH 2.0

- Reserve Bank of India's **Medium-term Strategy Framework – Utkarsh 2.0-** for period 2023- 2025 was launched.
  - **First strategy framework (Utkarsh 2022) covered period 2019-2022.**
- **Vision in Utkarsh 2.0 that will guide RBI are-**
  - **Excellence in performance** of its functions;
  - **Strengthened trust** of citizens and Institutions in RBI;
  - **Enhanced relevance and significance** in national and global roles;
  - **Transparent, accountable and ethics-driven** internal governance;
  - **Best-in-class and environment-friendly** digital and physical infrastructure;
  - **Innovative, dynamic and skilled** human resources.

3.10.8. T+1 SETTLEMENT

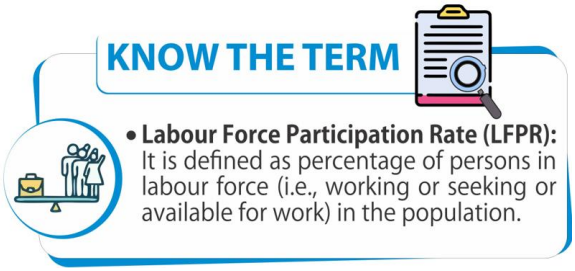
- After China, India became **second country** in world to start **'trade-plus-one' (T+1) settlement cycle** in top listed securities.

- Until 2001, stock markets had weekly settlement system, then T+3, and then moved to **T+2 in 2003**.

- Under T+1, **trade-related settlements must be done within a day**, **or 24 hours**, of completion of a transaction.
- **Benefits of T+1:** Better liquidity with investors; Faster rolling of funds and stocks; Decreases unsettled trade exposure to clearing corporation by 50%; Reduces capital blocked to cover risk of trades etc.

3.10.9. WORLD EMPLOYMENT AND SOCIAL OUTLOOK: TRENDS 2023 REPORT

- It is an **annual report of International Labour Organisation (ILO)** that provides labour market projections for 2023 and 2024 and presents trends in labour productivity growth.
- **Key findings**
  - **Global employment** will **grow by just 1 percent in 2023**, and **global unemployment** rate has been **pegged at 5.8 percent.**
  - Emerging **geopolitical tensions, recovery from pandemic, and issue in supply chains** fueled conditions for labour market deterioration.
  - **Labour force participation rate (LFPR) of women stood at 47.4 percent in 2022**, compared with 72.3 percent for men.
  - **Africa and Arab states** to witness **employment growth of around 3% or more in 2023** with declining unemployment rate.
- ILO is a **specialized agency of United Nations** headquartered in **Geneva, Switzerland**.
  - It is the **only tripartite U.N. agency that brings together governments**, employers and workers of **187 member states** to set labour standards for **promoting decent work for all women and men.**
  - It was **created in 1919 as part of Treaty of Versailles**.
  - It was awarded **Noble Peace Prize 1969** for **promoting fraternity among nations** by ensuring social justice.
  - **Other reports released by ILO**: Global Wage Report, and World Social Protection Report.

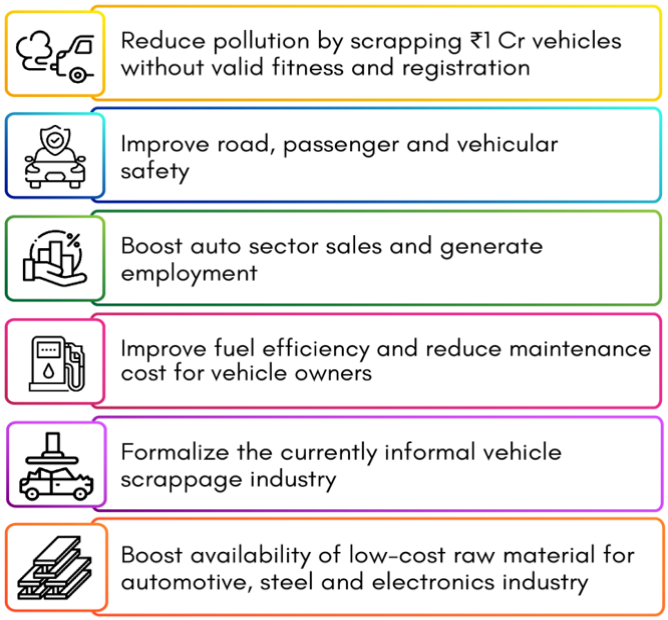


3.10.10. PRAJJWALA CHALLENGE

- It was launched, by **Ministry of Rural Development**, to invite **ideas, solutions and actions that can transform rural economy.**
- **Ideas are invited** from individuals, Social Enterprises, Start up, Private Sector, Civil Society, etc. **into several categories including:**
  - Focus on Women and Marginalized section of community.
  - Localised Models.
  - Cost-effective solutions.
- It is **launched under Deendayal Antyodaya Yojana - National Rural Livelihoods Mission** (DAY-NRLM).
  - DAY-NRLM aims at **mobilizing rural poor households into SHGs** and provide them long-term support such that they **diversify their livelihoods, improve their incomes** etc.

3.10.11. NATIONAL SINGLE WINDOW SYSTEM (NSWS) FOR VEHICLE SCRAPPING

Objectives of Vehicle Scrapping Policy or Voluntary Vehicles fleet Modernization Program (V-VMP)

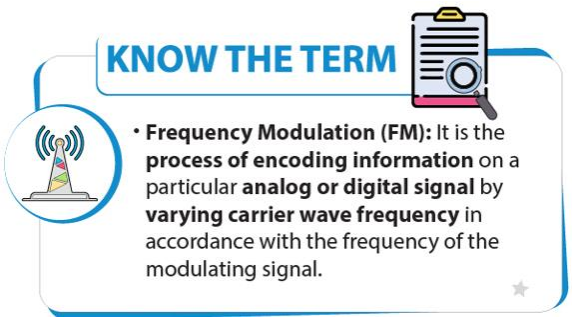


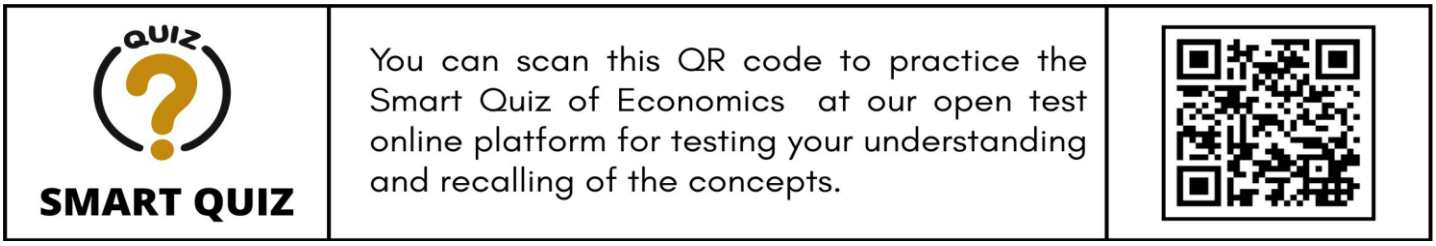
- Ministry of Road Transport and Highways stated that 11 states/UTs have been onboarded onto NSWS for **Voluntary Vehicle-Fleet Modernization Program (V-VMP)** to attract **private investment in vehicle scrapping ecosystem**.
  - NSWS was created by Department for Promotion of Industry and Internal Trade.
- **V-VMP or Vehicle Scrapping Policy** came into effect from April 1, 2022.
  - It aims to **create an ecosystem for phasing out of unfit and polluting vehicles** in an eco-friendly manner.

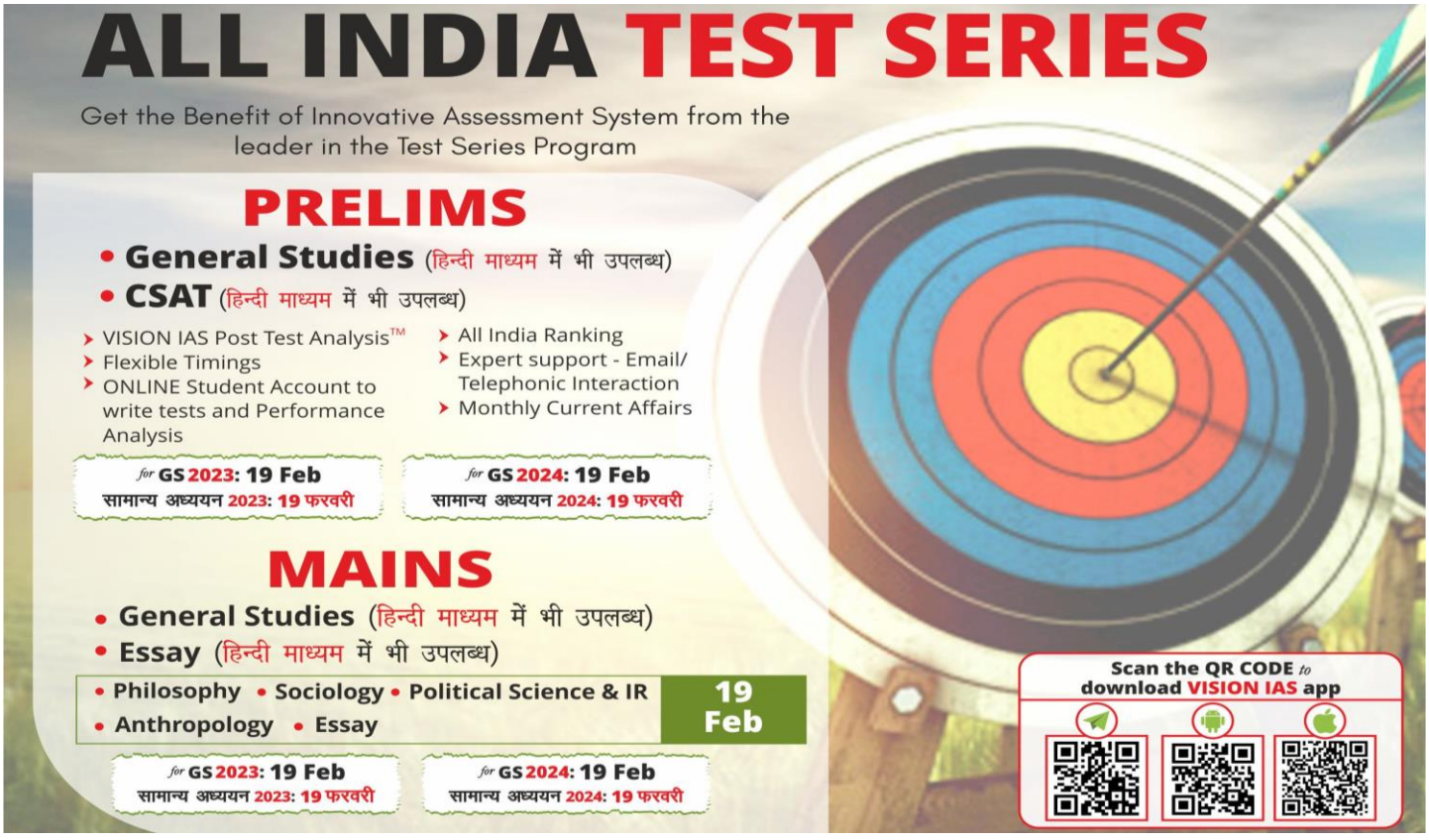
- **Key Highlights of V-VMP**
  - Provides for **fitness tests after 20 years for personal vehicles**, while commercial vehicles will require it after completion of 15 years.
  - **Setting up of Registered Vehicle Scrapping Facility (RVSF)** for environment friendly scrapping of vehicles, enhance value recovery from scrapped vehicles etc.
  - **Encouraging public and private investment** to formalize vehicle scrapping industry.
  - **Replacing End-of-Life Vehicles** to achieve better fuel efficiency, reduce vehicular air pollutants etc.
  - It **does not treat a vehicle as scrap just because of its age**, but considers other factors like quality of brakes, engine performance etc.

3.10.12. BROADCASTING INFRASTRUCTURE AND NETWORK DEVELOPMENT (BIND) SCHEME

- Cabinet Committee on Economic Affairs approved **BIND Scheme** up to **2025-26**.
- BIND is a **Central Sector Scheme** to **bring modernisation** to **public broadcaster Prasar Bharati** i.e. **All India Radio (AIR)** and **Doordarshan (DD)**.
- It would provide **necessary financial support** to improve infrastructure to **increase public broadcasters reach** and **develop high-quality content**.
  - **AIR FM (Frequency Modulation)** transmitters coverage to reach **80%** of **geographical area** from **66%.**
  - Free distribution of 8 lakh DD Free Dish Set-top Boxes to people living in remote, tribal, LWE (Left Wing Extremism) and border areas.







4. SECURITY

4.1. POLICE REFORMS

Why in News?

57th All-India Conference of Director Generals/ Inspector Generals of Police of all the states and union territories was held in Delhi.

More on news

- This annual conference is **organized by the Intelligence Bureau (IB)** and its deliberations are presided over by the Director, IB.
- The conference focused on **policing and national security issues**.

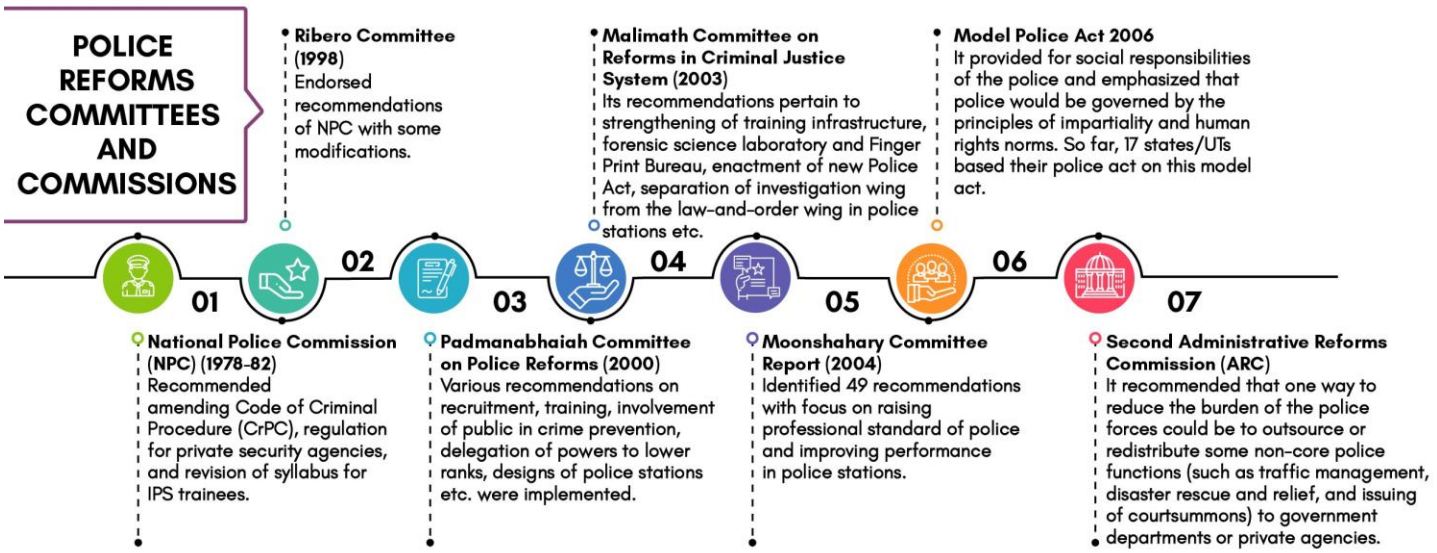
Policing responsibilities in India

The basic framework for policing in India was laid down in the pre-independence era through the **Police Act, 1861**. In the federal structure of the country, **'Police' and 'Public Order' are state subjects** under the **Seventh Schedule** to the Constitution of India.

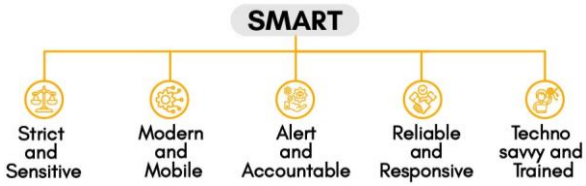
State police forces are primarily in charge of issues such as crime prevention and investigation and maintaining law and order. While they also provide the **first response in case of more intense internal security challenges** (e.g., terrorist incident or insurgency-related violence).

Policing issues in India

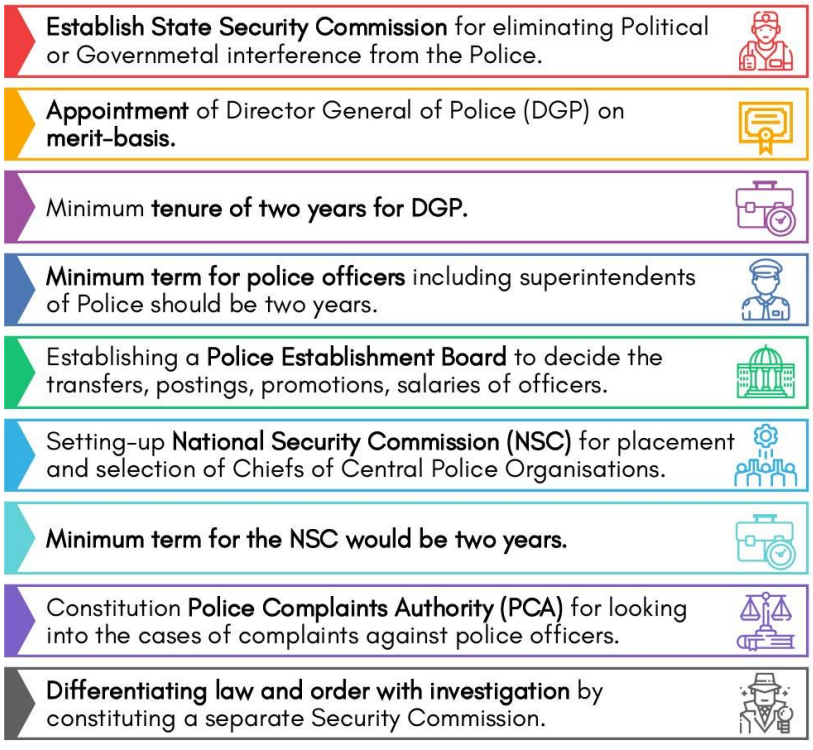
- **Human resource problem:**
  - **Overburdened forces:** According to the Status of Policing in India Report 2019, police in India **work at 77% of their sanctioned strength** and for 14 hours a day on average.
  - **Absence of incentives to perform: 86%** of the state police comprises of **constabulary** and lack of promotion prospects weaken their incentive to perform.
  - **Gender inequality: Women are underrepresented** in the police force, constituting **only 10.3% of police force.**
- **Physical infrastructure:** Infrastructure is mostly lacking at the level of **police stations**.
  - According to Bureau of Police Research and Development (BPRD) data (2020), several police stations have been found with **no wireless**, **no telephone** and **no vehicles.**
  - **CAG audits and BPRD** has found **shortages in weaponry** and **lack of modern weaponry** with state police forces.
- **Technology:**
  - Indian Police forces have **not kept pace with changes in technologies** like forensics, fingerprinting, facial recognition etc. For example, Crime and Criminal Tracking Network & Systems (CCTNS) is facing implementation issues like limited usage etc.
- **Insufficient financial allocation:** Expenditure on police accounts for about **3% state government budgets**.
  - Funds dedicated for infrastructure modernization are typically **not utilized fully**. Altogether, such fund utilization was around 48% till 2017.
- **Police-Public Relations:** Police requires the confidence, cooperation and support of the community to prevent crime and disorder. However, according to 2nd ARC Report, **police-public relations is in an unsatisfactory state**.



Policing reforms that can be implemented



- **Deliberations in a right direction: Agenda of DGP conferences** and other conferences which delve into policing reforms need to **shift towards addressing foundational problems**.
  - PM recently proposed **recreating the DGsP/IGsP Conference model at the state/district levels** for discussing new concerns and evolving best practises among their teams.
- **SMART police:** The Prime Minister, at 49th DGP conference in 2014, enunciated the concept of SMART Police.
- **Building a positive image: Community policing model** can be utilized for building strong police-public relations and resolving local conflicts.
  - Community policing models such as **Mohalla committee in Maharashtra, Janamaithri in Kerala, have produced good results.**
- **Optimization of police personnel with technology integration:** Increasing sensitivity of police officers and **training them in emerging technology**.
  - Initiatives like **National Data Governance Framework** can facilitate data flow among agencies.
- **Filling legal loopholes:** Repealing obsolete criminal laws & building standards for police organizations across states would optimize utilization of policing energies.
  - Also, prison reforms will have to be undertaken to ensure overall transformation of the Criminal Justice System.
- **Cooperative policing setup: Increased cooperation between state police and federal authorities** will facilitate optimal utilization of capabilities and sharing of best practices.



4.2. MILITARY APPLICATIONS OF DRONES

Why in News?

Indian armed forces have floated the idea **for integrating Unmanned Aerial Vehicles (UAVs) or drones in its combat systems**.

Drone systems in Indian Military

- **Swarm Drones:** The Indian Army inducted **swarm drones**, which refer to several UAVs operating in coordination. These are **useful in combat operations** for surveillance inputs and undertaking close reconnaissance.
- **Switch VTOL (Vertical Take-Off and Landing) UAVs:** VTOL capabilities makes these useful in remote areas and difficult terrains. In 2021, Army signed a contract with Mumbai based ideaForge for these drones.
- **Indigenous Drones:**
  - **DRDO Lakshya and DRDO Nishant:** Used for aerial reconnaissance and intelligence gathering.
  - **DRDO TAPAS UAV (Rustom-II):** India's Tactical Advanced Platform for Aerial Surveillance (TAPAS) Medium Altitude Long Endurance (MALE) UAV (in user trial stage).
- **Imported drones in India:**
  - **Israel's Searcher and Heron UAVs:** They are capable of all-weather surveillance. Some variants of Heron can be armed when needed.
  - **Predator armed drones and MQ-9B Sea Guardian drones:** India and USA are moving closer to sign deal for these two drones.

DO YOU KNOW?

- The concept of drones **originally came for military purposes.** In 1849, Austria attacked Venice using unmanned balloons stuffed with explosives.
- **First pilotless aircraft** was developed in 1916by UK, during **during World War I.**
- **India first used military drones during the1999 Kargil war** against Pakistan for photo-reconnaissance along the Line of Control (LoC).

Defence systems against drones

- **Naval Anti Drone System (NADS):** First indigenously developed comprehensive anti-drone system developed by DRDO.
  - It has capabilities for both **hard kill** (attacking vital drone components) **and soft kill** (misguiding, signal jamming etc.).
- **DRDO's D-4 Drone System:** Acquired by all three forces, it can detect, identify, and neutralize different types of drones within a 4 km radius.
- **Indrajaal:** Indigenous **autonomous drone defence dome** developed by a private Indian firm Grene Robotics.
- **Israel's SMASH 2000 Plus system:** Being used by Indian Navy, this system is installed mainly on assault rifles providing hard kill option.

Need for autonomous drones by Indian armed forces

- **Border surveillance:** India's border with neighbouring countries (Pakistan and China) requires continuous surveillance due to **cross border incursions**. Drones can be very effective in difficult to monitor areas. e.g., mountainous regions.
- **Regional Security:** Military drones are important assets in navigating the **turbulent security situation** in the Indian Ocean littorals.

- To keep a close eye on the **movements of foreign vessels** as there has been a rise in their **deployment** around India's Andaman and Nicobar Islands.

- **Technological supremacy in warfare: Greater warfighting abilities** of autonomous platforms powered by artificial intelligence (AI) and use of disruptive technologies of fourth industrial revolution (4IR).
- **Reconnaissance and Tactical Support:** Drones provide **accurate and real-time intelligence** about enemy positions and movements, helping make informed decisions during complex operations such as surgical strikes.

Issues with deployment of autonomous drones in warfare

- **Dehumanizing warfare:** A system of targeting human beings based on **machine-learned experiences** is problematic.
  - The **computer neither has access to all relevant data to make an informed decision nor it recognises the need for more information** to come up with an optimal solution.
- **Absence of accountability:** If autonomous drones **erroneously used force** in a theatre of conflict, there is **no one to be held accountable**, as blame can't be pinned on a machine.
- **Risk of shared liability:** It enhances the risk of **shared liability between networked drone systems**, particularly when weapon algorithms, satellite and link systems that enable combat solutions are not under the control of the user.
- **Data Biases:** AI is characterised by a **predisposition to certain kinds of data.** Biases in the collection of data, data analysis, and in determining outcomes **muddle rational decision-making**.
- **Detachment from ground realities:** Use of autonomous drones makes warfare more deadly as remote user is aloof from ground realities, **putting both military personnel and civilians at risk.**
- **Doctrinal paradox:** There is **no easy way of incorporating AI-fuelled drones into military doctrine**, particularly when effectiveness of such technology in combat is not established.
  - Military doctrine is premised on **rules, codes, and ethical standards**, which are required for establishing the **necessity of using force in war and the proportionality of that force deployment**. It is not established that AI systems can comprehend such complex situations.
- **Limitation in uses of current drone capabilities:** Technical issues such as limited flight time, limited range, payload capacity, weather conditions, cybersecurity risks pose a challenge in utilizing such capabilities.

Drone Regulations in India	
Drone Rules 2021	• Guidelines by **Directorate General of Civil Aviation (DGCA)** for use of **civil drones**. • Places **restrictions** on operating drones in certain areas (Red Zones). • Provides for **registration and licensing of drones** and training of operators. • It follows the **principle of No Permission – No Take-off (NPNT)** and permission is required before every operation of a drone.
Digital Sky Platform	• Online platform **hosted by DGCA** for drone management. • It includes interactive airspace map with marking of **red, yellow and green zones**. • Platform deals with **drone flight plans and permissions to fly**.
National Counter Rogue Drone Guidelines	• Being framed by Indian government, these will include **rules about setting up Air Traffic Police, and use of drones in emergency situations etc**. • These will outline **means of detection, interruption and destruction of rogue drones**.
Regulations on drone market	• In 2022, government banned the import of drones, **except for research and development, defence and security purposes**. However, drone components can be imported. • Government approved a **Production-Linked Incentive (PLI) scheme for drones** and their components for making India a drone hub.

Way Forward

- **Incremental approach:** Indian Armed forces are on their evolutionary curve and should follow an incremental approach **in integrating autonomous drones** in combat systems.
- **Fill the gap in critical technologies:** While technology absorption in the armed forces has matured, there is a need to fill the **large gap that still exists in the development of critical technologies**.
  - Such gaps can be identified in system engineering, airborne and underwater sensors, weapon systems, and hi-tech components.
- **Fulfilment of legal requirements:** Unmanned systems should be deployed by the military **in ways that are consistent with national and international law**.

- **Accountability mechanism:** An accountability mechanism at global level needs to be put in place for use of autonomous systems in conflict areas.
- **Addressing data biases:** Data biases can be reduced and machine learning experiences can be made more humane by **identifying biases, conducting human evaluations, and having a diverse collection of datasets**.

To know more about Hybrid Warfare, please refer to our following Weekly Focus Document.

Hybrid Warfare: New age war warrants a new age response

Globalization, technological developments and the information revolution have made the world accept an order of change which the humanity has never experienced before. This order has influenced almost everything and the concept of war has not been an exception to that. This shifting paradigm of war calls for a deeper understanding of the 21st century concept of Hybrid Warfare. Through this document, we will know how this warfare is being manifested and is creating a world of uncertainties for countries including India. Is there a way out?

4.3. WASSENAAR ARRANGEMENT

Why in News?

- **At the 26th annual Plenary of the Wassenaar Arrangement (WA)**, India assumed the **chairmanship for one year**.

About Wassenaar Arrangement

- It is a **multilateral export control regime** which aims to promote regional and international security and stability by **controlling the export of conventional weapons and dual-use goods and technologies**.
  - WA members agree to **exchange information on sensitive dual-use goods and technologies and report on such transfers and denials of controlled items** to non-participants.
- It was **formally established in 1996**.
- It has has 42 members.
  - Except for China, all the other permanent members of the U.N. Security Council are signatories of the WA.
- The WA **operates on a voluntary basis and decisions are made by consensus.**
- The WA Plenary is the decision-making body of the Arrangement which operates based on consensus.

Multilateral Export Control Regime (MECR)

There are three major MECR other than Wassenaar Arrangement

- **Nuclear Suppliers Group (NSG):** It aims to prevent the proliferation of nuclear weapons by controlling the export of nuclear materials and technologies.
  - It has 48 members. **India is not a member**.
- **Missile Technology Control Regime (MTCR):** It aims **to limit the spread of ballistic missiles and other unmanned delivery systems** that could be used for chemical, biological, and nuclear attacks.
  - It has 35 members. **India is a member**.
- **Australia Group:** It aims to prevent the spread of chemical and biological weapons by controlling the export of related materials and technologies.
  - It has 43 members. **India is a member**.

India and the Wassenaar Arrangement

- India joined the WA as its **42nd Participating State** in 2017**.**
- **Significance of membership of WA for India**

- WA will **facilitate high technology tie-ups with the Indian industry** and ease access to high-tech items for India's defence and space programmes.
- **India is recognized as a responsible exporter** of dual-use goods and technologies.
  - ✓ Recognition boost India's defense industry and contribute to its development as a strategic player in the region.

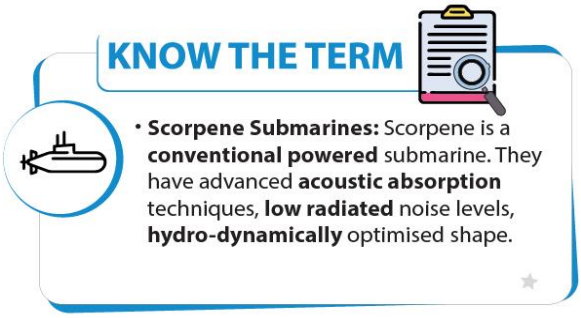
4.4. NEWS IN SHORTS

4.4.1. AGNIPATH SCHEME

- MoD, Ministry of Education, Ministry of Skill Development and Entrepreneurship exchanged MoUs with various stakeholders **to facilitate continued education and awarding appropriate skill certificates to Agniveers.**
  - **Under MoU with National Institute of Open Schooling** and Indira Gandhi National Open University, **suitable Class 12 certificates and Bachelor's degrees will be awarded** to Agniveers.
  - **Market-ready and industry-accepted Kaushal Praman Patra will be issued** at the time of their exit on the basis of job roles and skill sets mapped with National Occupational Standards (NOS).
- **About Agnipath Scheme**
  - It is a **recruitment scheme for Indian youth** who wish to join Armed Forces. **Soldiers recruited** under the scheme **will be called Agniveers.**
  - Scheme envisages **recruitment of personnel below officer (PBOR) rank in army, air force and navy for four years**, including six months of training.
  - Around **45,000 to 50,000 soldiers,** between **age of 17.5 to 21 years** will be **recruited annually.**
  - **Only 25%** of total recruits will be **allowed to continue for another 15 years** under permanent commission.
  - **Other 75% Agniveers will be demobilised**, with an exit or **"Seva Nidhi '' package** and the proposed MoU's are about to benefit them.

4.4.2. INS VAGIR

- **Fifth Scorpene-class submarine INS Vagir** was commissioned into Indian Navy.
- INS Vagir, launched in 2020, is **among the six submarines** being **built in India under Indian Navy's Project-75** at Mazagon Dock Shipbuilders Limited (MDL) in Mumbai under collaboration with Naval Group, France.
  - Also called **'Sand Shark',** INS Vagir represents **'Stealth and Fearlessness'.**
  - Vagir can **undertake multifarious types of missions** i.e., **anti-surface, anti-submarine, intelligence gathering, mine laying, area surveillance**, etc.
- **Project-75, signed in 2005,** includes indigenous construction of **six submarines of Scorpene (diesel-electric) design**.
  - Four of them, **Kalvari, Khanderi, Karanj, and Vela** have already been delivered to Navy and commissioned.
  - **INS Vagsheer will be commissioned in late 2023**.
- **P-75I, succeeds P75**, is part of 30-year submarine building plan that ends in 2030.
  - P-75I envisages **construction of six conventional submarines** with **better sensors and weapons and Air Independent Propulsion System (AIP).**
  - It provides **boost to indigenous design and construction capability** of submarines in India, in addition to bringing in latest submarine design and technologies.
- AIP is a technology that allows a **conventional submarine to remain submerged for much longer period (fortnight)** than ordinary diesel-electric submarines.
  - **Fuel cell-based AIP has merits in performance** compared to other technologies.



4.4.3. PRITHVI-II

- **Defence Research and Development Organisation (DRDO) carried out a successful test launch** of tactical ballistic missile Prithvi-II.
- **Missile,** which is powered by light propulsion twin engines, **has a range of around 350 km and can carry 500-1,000 kg of warheads.**
  - It **uses an advanced inertial navigation system** to strike the set target.
- Prithvi was **developed by DRDO under Integrated Guided Missile Development Programme (**conceived by Dr A P J Abdul Kalam).
  - **Other missiles under this program:** Agni, Trishul, Akash, Nag.

4.4.4. HYPERSONIC TECHNOLOGY DEMONSTRATOR VEHICLE (HSTDV)

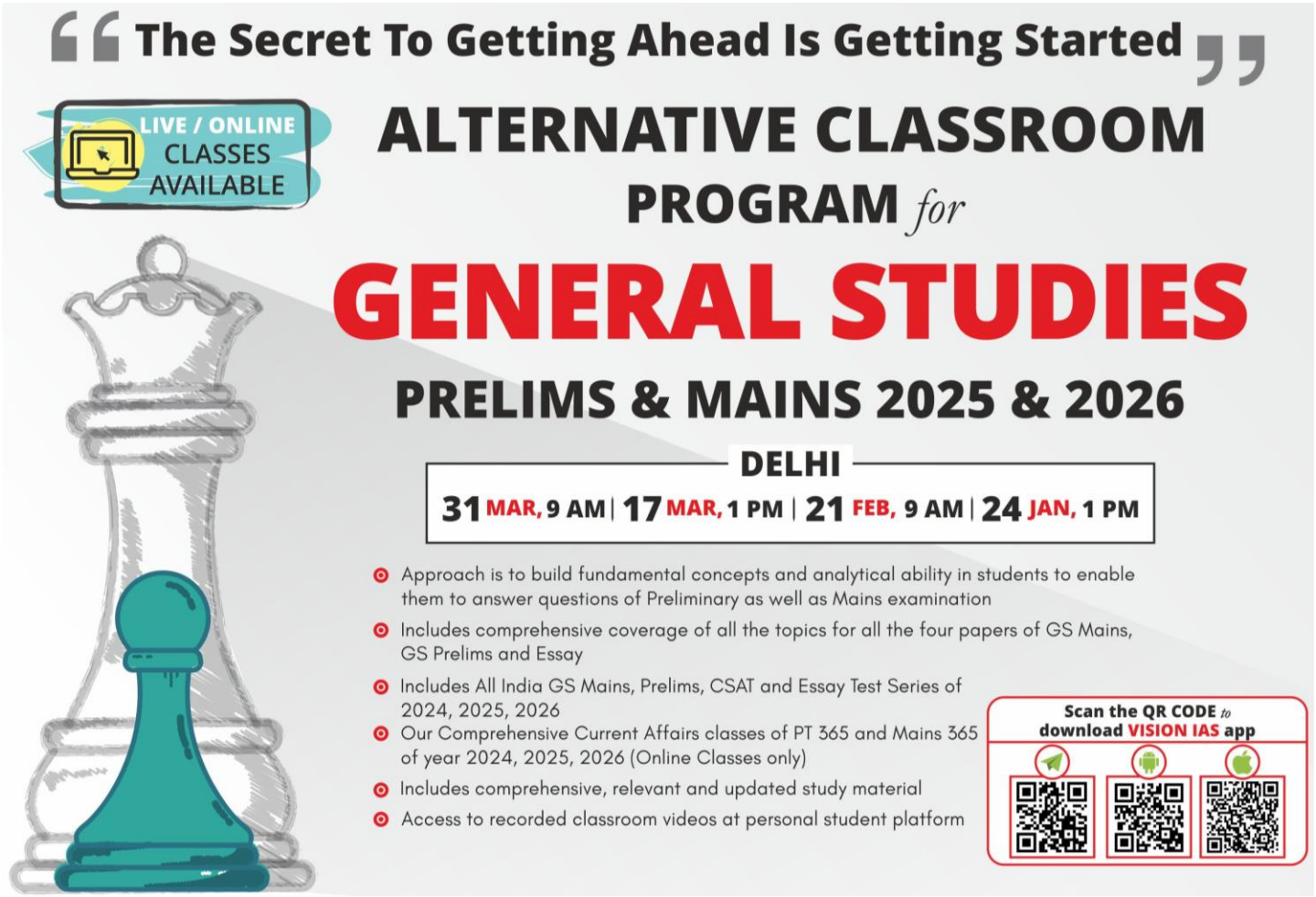
- **DRDO** tested the HSTDV, powered by a **scramjet engine**.
- HSTDV will serve as a critical building block for **hypersonic weapons (Speed > 5 mach** or 5 times speed of sound).
    - Scramjet engine (supersonic-combustion ramjet) is one which can **operate at hypersonic speeds**.
    - Like ramjet engine, scramjet **uses atmospheric air for oxidizer** and compresses incoming air before it enters combustion chamber.

4.4.5. EXERCISE IN NEWS

- **Veer Guardian 2023:** It is bilateral **Air exercise** between **Indian Air Force (IAF)** and **Japan Air Self Defence Force (JASDF).**
- **Varuna:** It is a Bilateral Naval Exercise between **India and France.**
- **Cyclone – I:** It is the first joint exercise between the **special forces of the Indian Army and the Egyptian Army.**
- **TROPEX:** It is **Indian Navy's major maritime exercise** that is conducted biennially and also witnesses participation of Indian Army, Indian Air Force and Coast Guard assets.
- **AMPHEX 2023:** It is a **biennial Tri-Services Exercise** aimed at joint training of elements of all three services.
- **Tarkash 2023:** It is the 6th Edition of **Counter Terrorism Exercise between India's NSG** (National Security Guard) **and US Special Operations Forces** (SOF).
- **Topchi 2023: Indian army** carried out the annual exercise named '**Exercise Topchi**'. Focus of the exercise was to showcase **indigenous capabilities and strides made in achieving self-reliance** in defense sector.

4.4.6. DOOMSDAY CLOCK

- Bulletin of the Atomic Scientists (BAS) **moved Doomsday clock to 90 seconds to midnight** largely because of **mounting nuclear warfare in Ukraine.**
    - **BAS was founded** in 1945 **by Albert Einstein** and **University of Chicago scientists** who **worked on Manhattan Project** to build **first atomic bomb.**
- **Doomsday Clock**, created in **1947**, is a design that **warns the public about how close we are to destroying our world** with dangerous technologies of our own making.
    - Since its debut, minute hand **has been reset 25 times.**



5. ENVIRONMENT

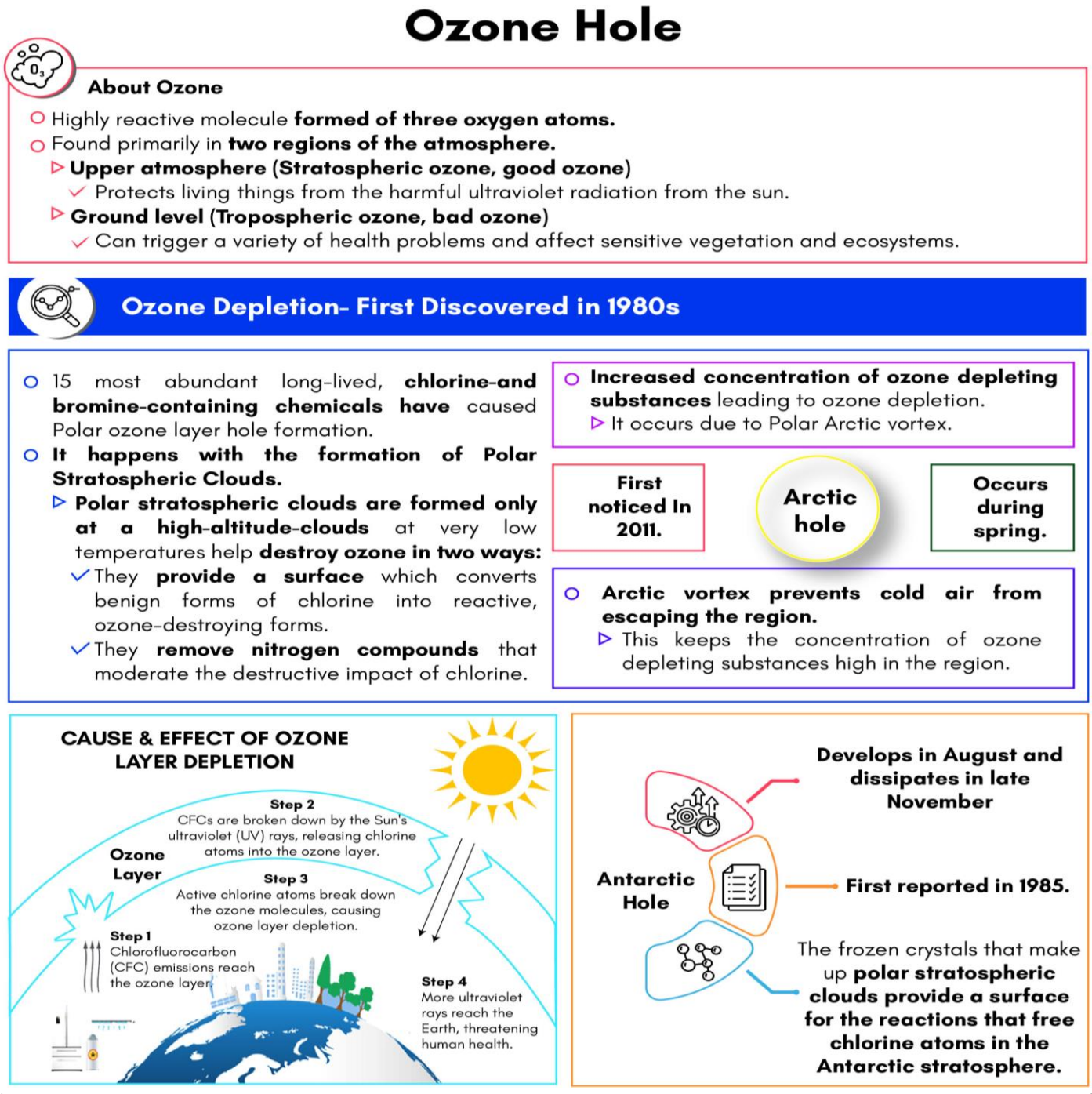
5.1. OZONE HOLE RECOVERY

Why in news?

A new **United Nations-backed Ozone Recovery Assessment Report, 2022 has stated that** the ozone layer is on track to recover within decades as harmful chemicals are phased out.

More on news

- **The report** highlights that **Ozone Depleting Substances (ODS) levels** in 2022 are back to those observed in 1980 before ozone depletion was significant.
  - This slow but **steady progress over the past three decades** was achieved by **Montreal Protocol.**
  - The pace of reduction in ozone-depleting substances (ODSs) over Antarctica, which experiences a large ozone hole in spring, has been slower.



Ozone recovery assessment report 2022

- The report was released by **combined efforts** of **WMO, UNEP, NOAA, NASA and European Commission.**
- **Key findings of the report**
  - The **atmospheric abundances of both total tropospheric chlorine and total tropospheric bromine from long-lived ODSs** have continued to decline since the 2018 Assessment.
  - The study suggests that **decline in ODS emissions due to compliance with the Montreal Protocol avoids global warming** of approximately 0.5–1 °C by mid-century.
  - The study expected that the **thickness of ozone layer to return to 1980 values around 2066 in the Antarctic, around 2045 in the Arctic region.**

KNOW THE TERM

- **Stratospheric Aerosol Injection (SAI):** It is a **solar radiation management** approach to **spray particles** in the stratosphere, which would **reflect sunlight** and **reduce global temperatures.**

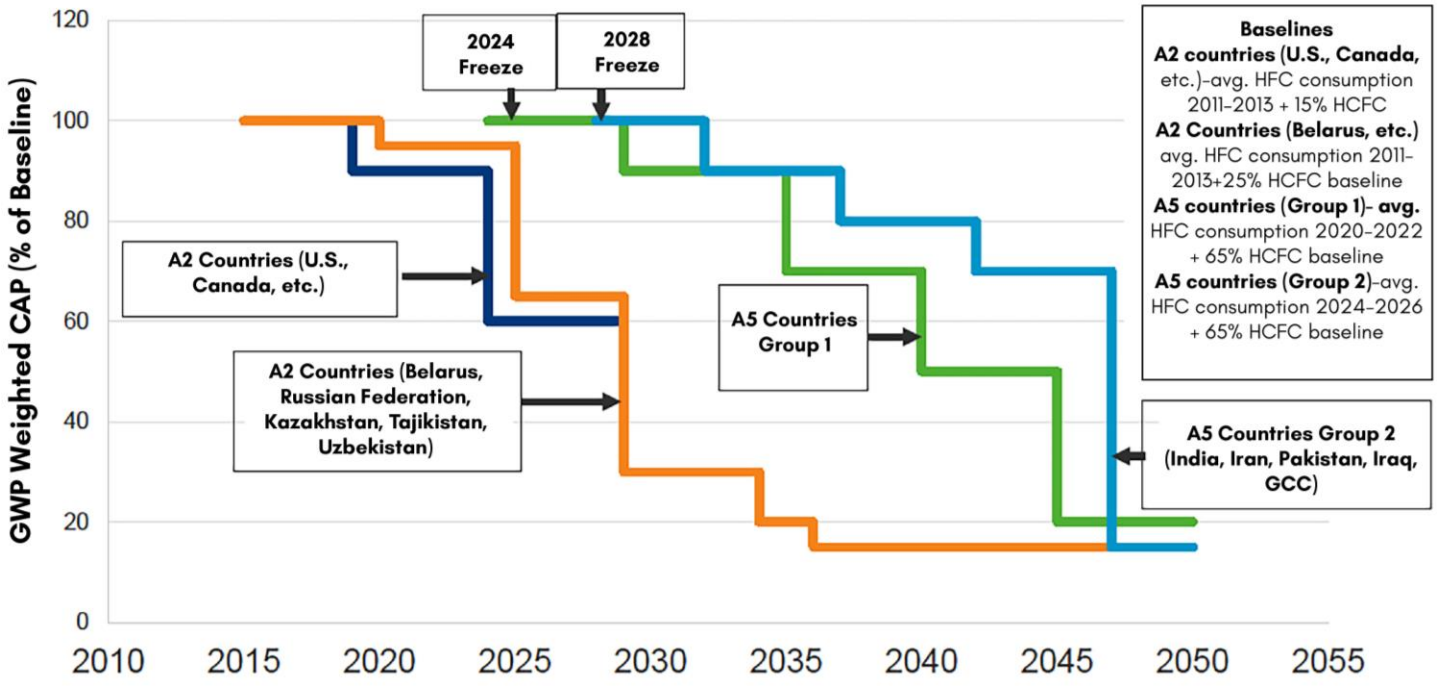
India's steps for protection of Ozone

- Setting up of **Empowered Steering Committee** by Ministry of Forest, Environment and climate change to oversee implementation of Montreal Protocol.
- Setting up of **Ozone Cell as a National Ozone Unit (NOU)** to support implementation of Montreal protocol.
- India has successfully **achieved complete phase out of HCFC-141b** used in manufacturing of foam.
- India has also brought **India Action Cooling Action Plan** to reduce the consumption of ozone depleting substances in cooling equipment.

Key challenges highlighted by the report

- **Lack of proper assessment -** The gaps in observation and monitoring networks for compounds like CFC-11, CFC-12 have made it difficult to take action against unreported emissions.
- **Unexplained Emissions -** Unexplained emissions have been identified for other ODSs (CFCs-13, 112a, 113a, 114a, 115, and CCl4) which are difficult to understand as well as monitor.
- **Disparity in Ozone recovery: While** ozone in upper stratosphere is recovering properly, but same is not the case with middle and lower stratospheric zones in both the hemispheres.

Kigali Amendment to the Montreal Protocol 2016



- **Gaps in regional atmospheric monitoring -** existing network of atmospheric monitoring stations provide measurements of global surface concentrations of long-lived ODSs and HFCs resulting from anthropogenic emissions making it difficult to assess regional gaps.
- **Geo-Engineering Techniques**- The impact on the ozone layer of stratospheric aerosol injection (SAI) has hinted towards deepening of the Antarctic ozone hole and delay in ozone recovery.

Steps taken to heal Ozone Hole

- **Vienna Convention** (1985) **and Montreal Protocol** (1987)**:** The initiatives **aims to repair the ozone layer through worldwide reduction and ultimately elimination of ozone depleting substances**.
  - Its implementation has **enabled the production and consumption of these substances to be reduced by more than 98%** between 1986 and 2016.
- **Ozone Fund**, **1990**: The Ozone Fund (Multilateral Fund for the Implementation of the Montreal Protocol) was established in 1990 **to support developing countries in their efforts to phase out the use of ozone depleting substances**.
- **Kigali Amendment to the Montreal Protocol, 2016**: **It aims for the phase-down of hydrofluorocarbons (HFCs) by cutting their production and consumption.**
  - Given their zero impact on the depletion of the ozone layer**, HFCs are currently used as replacements of hydrochlorofluorocarbons (HCFCs) and chlorofluorocarbons (CFCs**), **however they are powerful greenhouse gases**.
  - With the Kigali Amendment, the **Montreal Protocol will be an even more powerful instrument against global warming.**

Way Forward

Key recommendations from the report

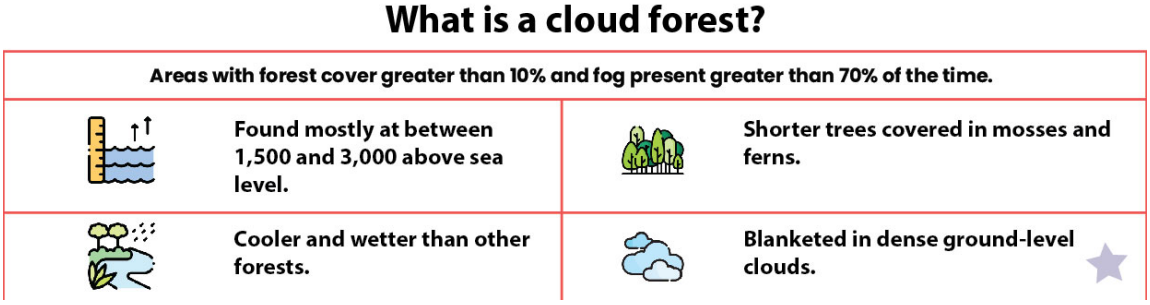
- **Elimination of emission of methyl bromide** which is currently allowed under certain conditions can advance the achievement of 1980 level of chlorine compound by two years in middle latitudes.
- A **3% reduction in anthropogenic N2O emissions**, averaged over 2023–2070, would lead to an increase in annually averaged global total column ozone.
- Emissions of **anthropogenic very short-lived chlorine substances, dominated by dichloromethane (CH2Cl2),** continue to grow and contribute to ozone depletion. These needs to be phased out.
- **Reductions in the future emissions of CFCs and HCFCs** requires addressing proper assessment and monitoring of regional gaps.

Conclusion

Arresting ozone depletion is crucial to not only protect earth's environment but also protect its biodiversity. The complex interconnection between ozone depletion and climate change needs to be studied and understood in a more scientific manner in order to design proactive and collective policy responses.

5.2. CLOUD FOREST ASSESTS

Why in News?



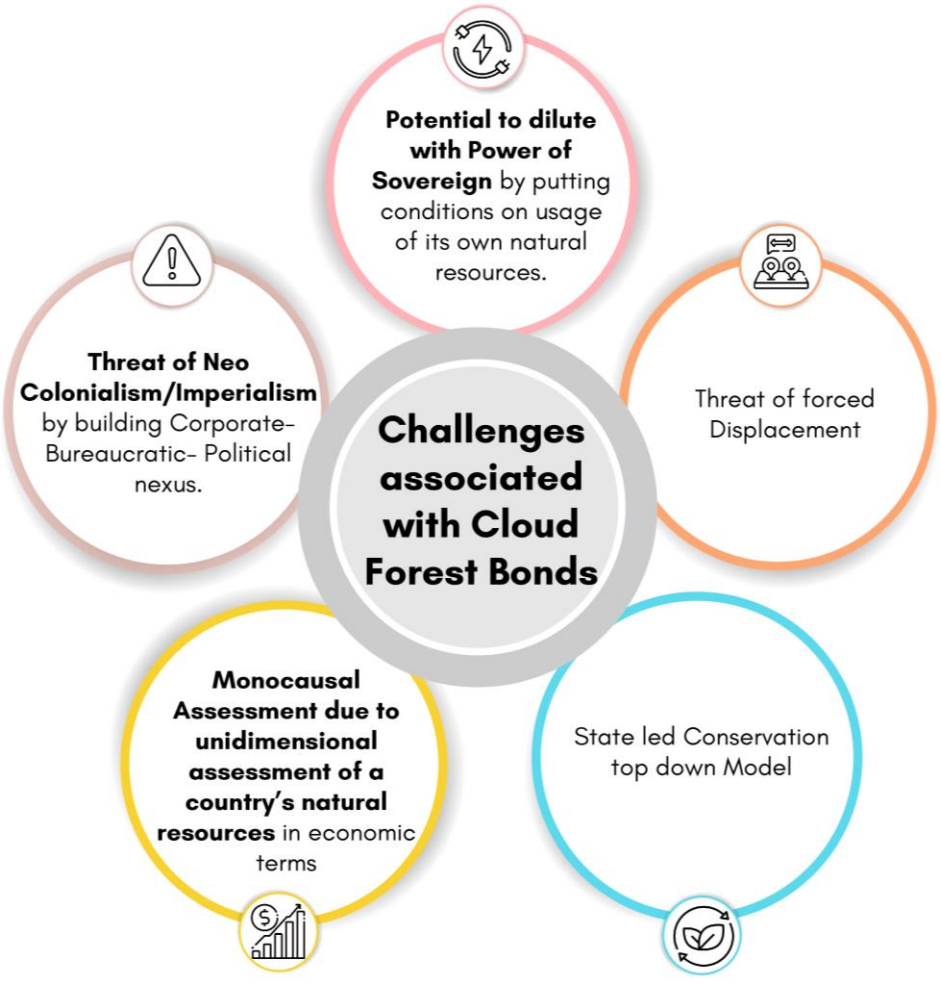
Recently a new report **"Cloud Forest Assets Financing a Valuable Nature-Based Solution"** was released by **Earth Security**, a global nature-based asset management advisory firm.

About Cloud Forest

- The suggested Cloud forest bonds as per the report are a part of ' **Nature Based Solutions (NBS)**' and their financing to protect these Cloud forests.
- Cloud Forests are **mountain tropical forests** generally **found at the river headstreams** and **mostly covered with clouds**.
    - These forests **serve as the storage of clean water** for communities, industries and hydropower plants.
    - **Majority of Cloud Forest i.e., 90% are found in 25 developing countries** in tropical regions **which bears the disproportionate impact of climate change.**

About the Cloud Forest 25 (CF25) initiative

- The unsustainable model of economic growth, global warming and increased frequency of extreme climate events has led to a **realization that economic growth must go hand in hand with environmental conservation. CF25 is a step in this direction.**
- CF25 is an **Investment Initiative** to bring countries, their creditors and multilaterals organizations together to accelerate, and consolidate the progress and scale such investment products.
- **Financing Mechanisms**
    - **Water Payments**: To create a mechanism for payments for ecosystem services from water users such as hydropower dams which works on a national scale and is subject to compliance norms.
    - **Sovereign Carbon**: The financing of forest carbon at sovereign and sub-sovereign jurisdictional scales as part of an approach to wider areas of lowland tropical rainforests.
    - **For these, the report proposes Cloud Forest bonds, which** can be issued through such collective mechanisms.
    - Cloud forest bonds are **debt based instruments** to **mobilise finance for protection of cloud forest.** Their value is based on the economic value of a country's Cloud forest resources.



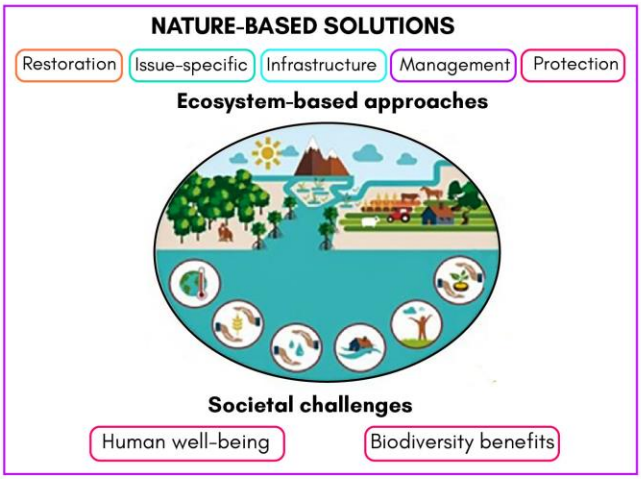
Nature Based Solutions

What are Nature Based Solutions?

- **Nature-based solutions are actions to protect, sustainably manage, or restore natural ecosystems.**
- They **address societal challenges** such as climate change, human health, food and water security, and disaster risk reduction effectively and adaptively.
- **Provide human well-being and biodiversity benefits.**
- They **leverage nature and the power of healthy ecosystems** to protect people, optimize infrastructure and safeguard a stable and biodiverse future.

NBS Case in point- Tackling Climate-Change

SUPPORTING ACTIONS	ECOSYSTEMS	CLIMATE-RELATED ECOSYSTEM SERVICES	MEASURABLE CLIMATE-RELATED OUTCOMES
MAINTAIN FUNCTIONALITY: ✓ Avoid degradation ✓ Protect ✓ Restore ✓ Manage in a climate change context	FORESTS GRASSLANDS MANGROVES WETLANDS	CO_2 Carbon storage (Vegetation) CO_2 Carbon storage (Soils) Storm surge attenuation Flood water retention	CO_2 Tonnes of CO_2 reduced, avoided, or sequestered Number of people with reduced vulnerability to climate hazards



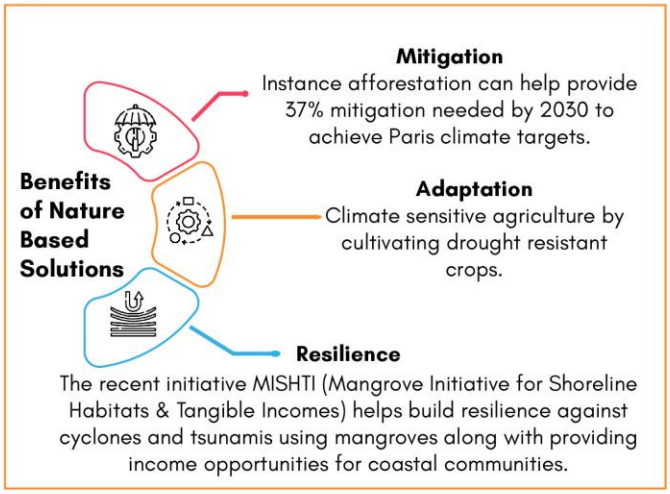
IUCN grant mechanisms: Global EbA (Ecosystem based Adaptation) Fund, the Blue Natural Capital Financing Facility, the Subnational Climate Finance initiative, and the Nature+ Accelerator Fund.

UN grant mechanisms: Network for Greening the Financial System, Net Zero Asset Owner Alliance, Green Climate Fund, The Adaptation Fund under the UNFCCC

Current Financing of Nature Based Solution

Other instruments: Green infrastructure financing facility under ASEAN Infrastructure Fund (AIF)

As per UNEP, climate, biodiversity, and land degradation goals will be out of reach unless investments into nature-based solutions quickly ramp up to USD 384 billion/year by 2025.



Conclusion

Nature based solutions can be a great **instrument for supporting low income countries** to preserve their **ecosystem while maintaining sustainable economic growth**. It can help **realize the principle of common but differentiated responsibility by enabling developed countries** and their private sector to finance climate change mitigation, adaptation activities in low income countries.

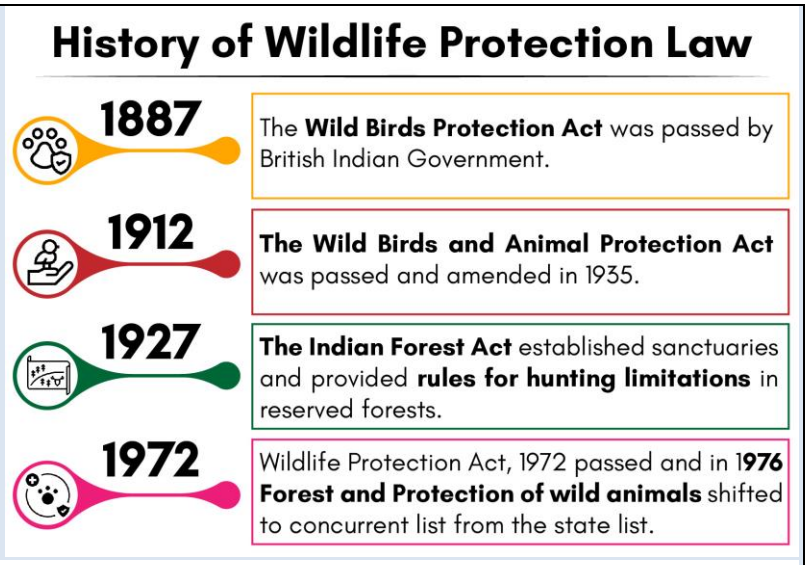
5.3. THE WILDLIFE (PROTECTION) AMENDMENT ACT, 2022

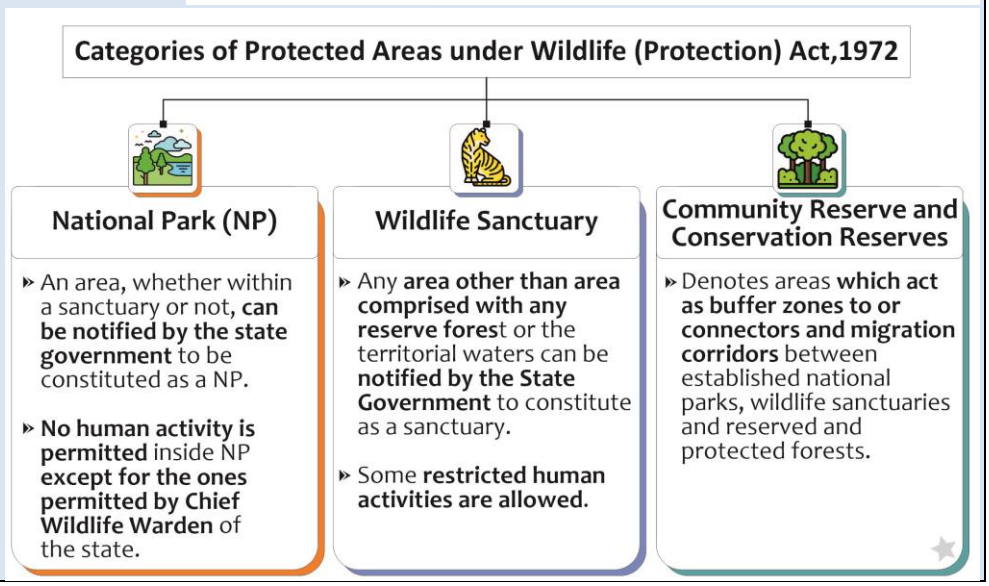
Why in News?

Recently, the Wildlife (Protection) Amendment Act, 2022 was enacted **to amend the WLPA, 1972 to incorporate more species** protected under the law.

About Wildlife (Protection) Act (WLPA), 1972

- The act provides for the **protection of wild animals, birds, and plants** with a view to ensuring the ecological and environmental security of the country.
- It empowers the State to declare protected areas, under four categories- **National Parks, Wildlife Sanctuaries, Community Reserves and Conservation Reserves.**
- Important bodies established under the act include-
  - **National Board for Wildlife**
  - **National Tiger Conservation Authority**
  - **Central Zoo Authority**
- The **Act has created 6 schedules** for specially protected plants (one), specially protected animals (four) and vermin species (one), which gave varying degrees of protection to classes of flora and fauna.



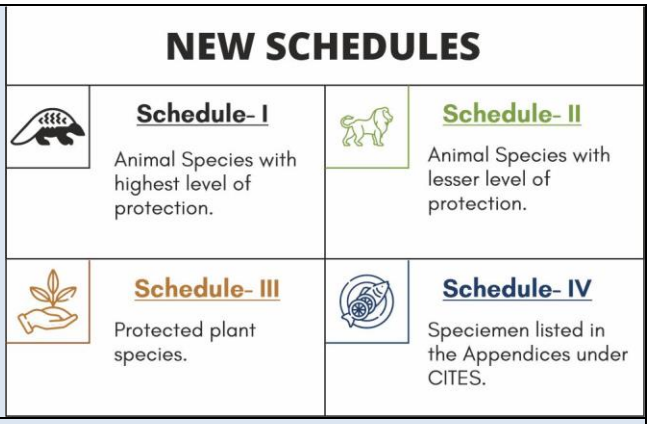


About the Wildlife (Protection) Amendment Act (WLPA), 2022

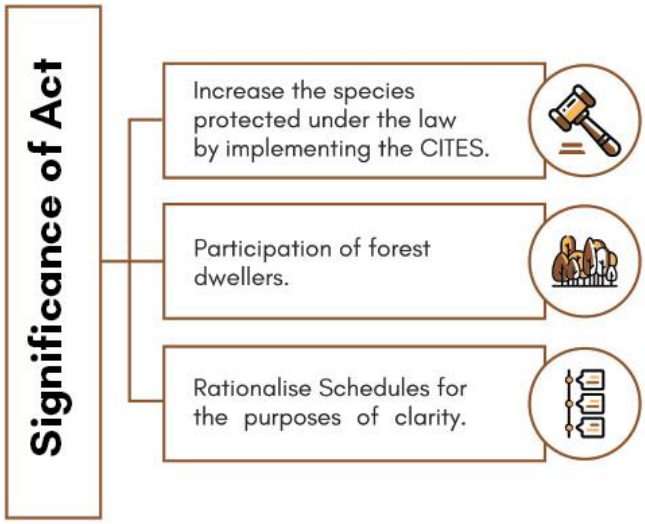
- 2022 act seeks to **conserve and protect wildlife through better management of protected areas** and implement the **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).**
- **Key Provisions of Amended Act 2022:**

Key Amendments	

New Chapter VB for implementation of CITES	• **Designation of authorities**: The Central government will designate-
	  ○ **Management Authority (MA)**- responsible for issuance of permits and certificates for trade of scheduled specimens in accordance with the Convention.
	  ○ **Scientific Authority**- to advice MA on aspects related to impact on the survival of the specimens being traded.
	• **Identification mark** to be used by the MA for a specimen, as per CITES. Modification or removal of the identification mark is prohibited.
	• **Registration certificate to be obtained by person possessing live specimens** of scheduled animals from the MA.
	• **Breeders of species in Appendix I of Schedule IV required to make an application for license** to the Chief Wildlife Warden within 90 days of the commencement of the amendment.
	• Conditions for export, import, re-export and introduction from sea of scheduled specimens have been specified.

Rationalization of schedules	**Number of schedules from 6 to 4** by: • Reducing the number of schedules for specially protected animals from 4 to 2. • **Inserting a new schedule for specimens listed in the Appendices under CITES** (scheduled specimens). • **Removing the schedule for vermin species**. ○ **Wild animals will be declared as Vermin by Central Government** by the way of **notification** for any area and for a specified period. 
Control of sanctuaries	• **Chief Wildlife Warden will manage and protect** sanctuaries **in accordance with the management plans** prepared as per guidelines of the **central** government. • In case of **sanctuaries falling under Scheduled Areas or areas where Forest Rights Act 2006 is applicable,** the management plan for such sanctuary prepared after due consultation with the **Gram Sabha** concerned.
Increase in Penalties	• For **General violation** increases to 1 lakh from Rs25,000. • For **specially protected animals** increases to 25,000 from Rs10,000.
Exemptions for 'live elephant' (section 43)	• **Transfer or transport of live elephants allowed for a religious or any other purpose** by person having ownership certificates in accordance with conditions prescribed by the Central Government.
New section 42A for Surrender of captive animals	• **Any person having a certificate of ownership for captive animals or animal products, can voluntarily surrender** them to the Chief Wildlife Warden. • **No compensation to be paid to the person for surrendering** such items and the items will become the property of the State Government.
Relaxation of certain restrictions	• **Filmmaking** (without causing any adverse impact to the habitat for wildlife) as one of the purposes for which permits may be granted to enter or reside in a sanctuary. • **Certain activities** such as, grazing or movement of livestock, bona fide use of drinking and household water **by local communities** etc. **allowed without a permit** in a sanctuary.
Other Provisions	• **Central government empowered to regulate or prohibit the import, trade, possession, or proliferation of invasive alien species**. • **No renewal of any arms licences to be granted to any person residing within 10 kilometres** of a sanctuary except under the intimation to the Chief Wildlife Warden or the authorised officer. • **State Board for Wildlife permitted to constitute a Standing Committee.**

Concerns about new Act

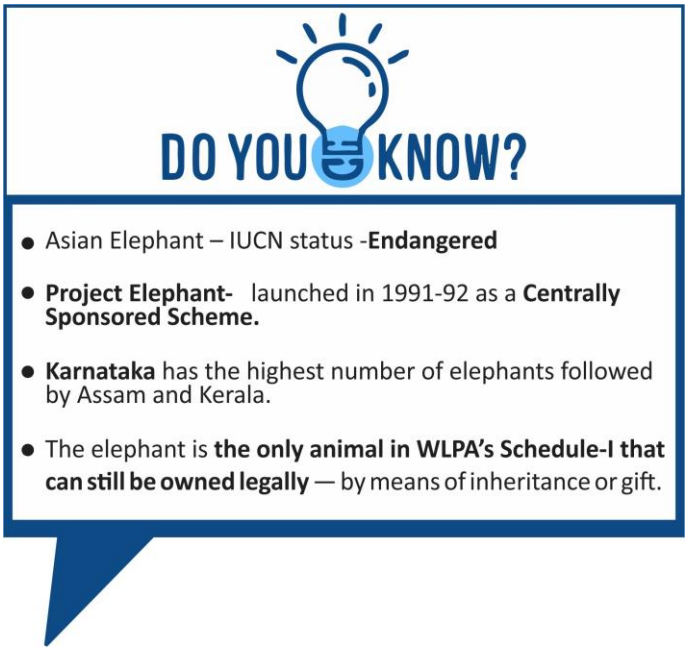


- **Trade in elephants: Prior to 2022 act ,** the only way to acquire a captive elephant **was through inheritance**, now amended act may provide an **open sale and purchase** of elephants thereby defeating the whole purpose of the Wildlife Protection Act.
  - In the existing law, commercial trade of elephants is prohibited it may drive the live elephant trade underground as traders switched to **dressing up commercial deals as gift deeds** to bypass the 2003 amendment.
    - ✓ In 2003, **Section 3 of the WLPA prohibited trade in all captive wildlife and any (non-commercial) transfer across state boundaries** without permission from the concerned chief wildlife warden.
  - The **ambit of "any other purpose" in the present amendment will empower elephant traders**, put wild populations at greater risk of capture, and defeat the very purpose of law.

- **Centre's hold over 'vermin' declaration continue:** Major concern is with how certain animals are classified as 'vermin'.
    - Last year, **Kerala's requests for declaring wild boars** as vermin have been turned down repeatedly by the **Ministry of Environment, Forest and Climate Change.**
- **Concern over federal structure:** Protection of wild animals and birds is a subject under **Concurrent List.**
    - 2022 Act **renders the State Boards for Wildlife chaired by Chief Ministers defunct and provides for establishing Standing Committee of Board for Wildlife** to be headed by the Forest Minister with maximum 10 nominated members.

Way Ahead

- **Need to certify elephants' ownership**: There are **2,675 captive elephants** in India and **only 1,251 have ownership certificates**.
- **Uphold federalism principle**: The Management and Scientific Authorities must take into account the strong principles of Federalism and need to ensure constructive engagement of State governments.
- **More research:** There is need to encourage research and the organic incorporation of scientific information in conservation planning.
- **Temporary restrictions:** There is need to place a restriction on the time period for which animals can be declared vermin, to ensure review of the conservation status of the wildlife population



5.4. FOREST (CONSERVATION) RULES, 2022

Why in news?

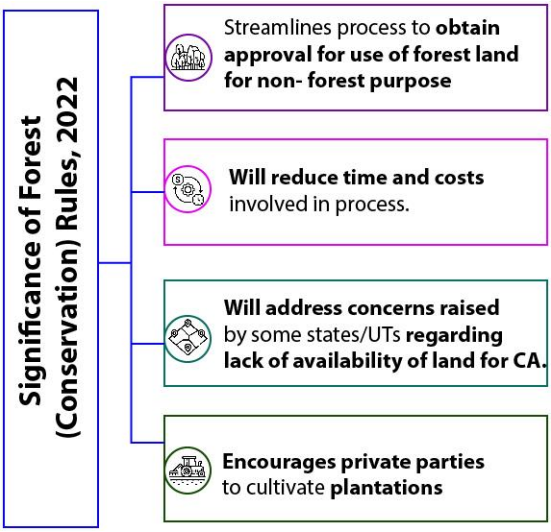
The National Commission for Scheduled Tribes (NCST) reiterated that Forest (Conservation) Rules, 2022 are violative of the Forest Rights Act, 2006.

More in News

- Earlier, the commission had expressed concern that the **Forest Conservation Rules of 2022 could severely affect the rights of Scheduled Tribes and other individuals who have historically lived in forested areas.**
- NSCT position on the Forest (Conservation) Rules, 2022 **is that it violates of the Forest Rights Act, 2006**.

About Forest (Conservation) Rules, 2022

- Forest (Conservation) Rules, 2022 have been **promulgated solely to implement the provisions of the Forest (Conservation) Act, 1980.**
  - The Rules **do not inhibit the commencement of processes envisaged in other laws like Wildlife (Protection) Act, 1972, Environment (Protection) Act, 1986, Land Acquisition Act, 1896, Forest Rights Act, 2006**, etc.
  - Provisions envisaged in other statutory laws can be undertaken simultaneously by the respective nodal implementing agencies.
- The Forest (Conservation) Rules, 2022 will **replace the Forest (Conservation) Rules, 2003.**
- The Rules lay **down the procedural framework** to obtain prior approval from the Union Government for the **use of forest land for non-forest purposes** as provided in **1980 act**. Such non-forest **purposes may include**-
  - Diversion of forest land for a **commercial or infrastructure project**,
  - **De-reservation of land** recognized as forest or
  - Assignment of forest land to any private person by **way of lease.**



Key features of Forest (Conservation) Rules, 2022

- **Establishment of Committees:** Rules provides for constitution of **advisory committee and Regional Empowered Committee** by central government and **Project Screening Committee** by State Government and Union territory Administration.
  - These committees will **advise union and state governments/UT administration** in matters involving use of forest land for **non-forest purposes**.
- **Prior Approval of the Central Government**: The approval shall be accorded by the Central Government **in two stages:**
  - **'In- Principle' approval**, after considering the **recommendation of the Advisory Committee** subject to fulfilment of stipulated conditions.
  - **'Final' approval** after having **received compliance report** and ensuring its completeness.
- **Compensatory Afforestation (CA)**: Rules aims to make land availability for compensatory afforestation easier.
  - The Rules have allowed CA to be undertaken in states/UTs other than one in which forest land is **being diverted, de-reserved or leased.**
- **Accredited compensatory afforestation**: The purpose is to **encourage people** to raise vegetation **on its land and sell it to persons** who need to meet **compensatory afforestation targets** under the Act.
- **Creation of Land Bank:** State/UT, may for purpose of Compensatory Afforestation **create a Land bank** under the administrative control of the **Department of Forest**.

Issues with Forest (Conservation) Rules, 2022

- **Contradicts with Forest Rights Act 2006**: The 2006 law requires governments to seek **prior and informed consent** of forest dwellers before allowing a project on their traditional lands.
  - Now, **Gram Sabha consent is not required** before the grant of the in- principle approval.
  - After approval, central Government will **leave it to the state government** to pass an order for de-reservation or diversion or assignment.
- **Issues with compensatory afforestation:** The new plantation cannot co**mpensate for the loss of carbon stocks and other ecosystem services** provided by old-growth forests in any realistic timeframe.

- Environmentalists have also **questioned the rationale** of environmental harm occurring in one state and being **compensated in another**. According to them, it would have a significant **impact on local biodiversity and climate**.

Conclusion

It is important to **build strong partnerships between forest-dwelling communities, civil society organizations, and government agencies**. Such partnerships can help facilitate the sharing of knowledge, skills, and resources for effective forest conservation. There is a need to strengthen legal frameworks that protect and promote the rights of forest dwellers and indigenous communities. This includes the **implementation of the Forest Rights Act**, which grants legal recognition to the rights of forest-dwelling communities over forestlands.

5.5. HUMAN-WILDLIFE CONFLICT

Why in news?

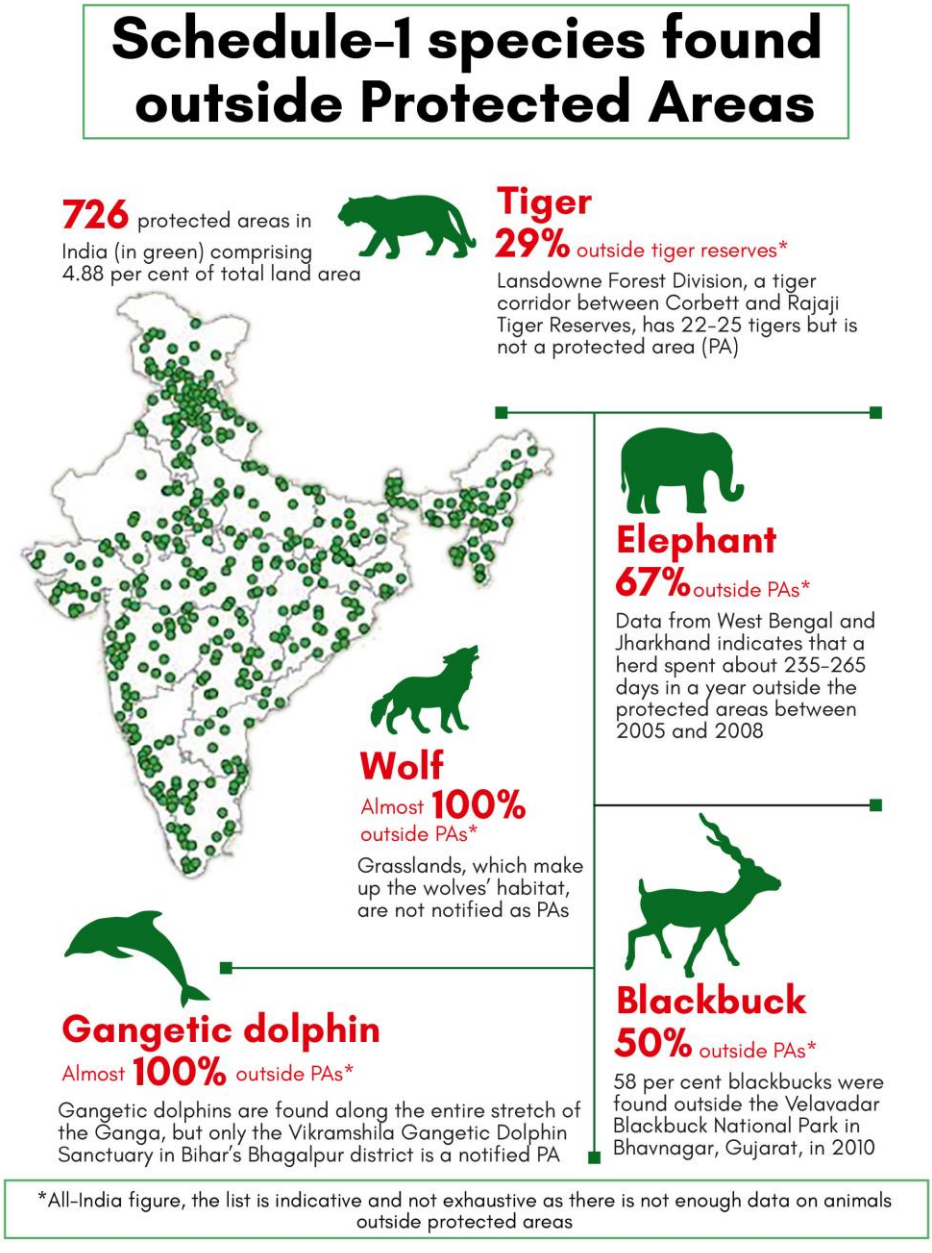
Recently, a report by Comptroller and Auditor General held that 63077 animals were run over by trains in the last four years.

More on News

- The report analyzed the data between 2017-18 and 2020-21.
  - The report highlighted that **unmanned level crossings were the main reasons behind the death of these animals.**
  - The report also highlighted that the **guidelines circulated by the Ministry of Railways to prevent animal deaths by trains have not been implemented** even after a decade.

Human-Wildlife Conflict (HWC)

- **It** refers to struggles that **arise when the presence or behavior of wildlife poses actual or perceived direct, recurring threats to human interests or needs**, often leading to disagreements between groups of people and negative impacts on people and/or wildlife.
- Further, it also **proves negative for the wildlife due to retaliatory killings** and creating a negative perception towards conservation of wildlife in common masses.

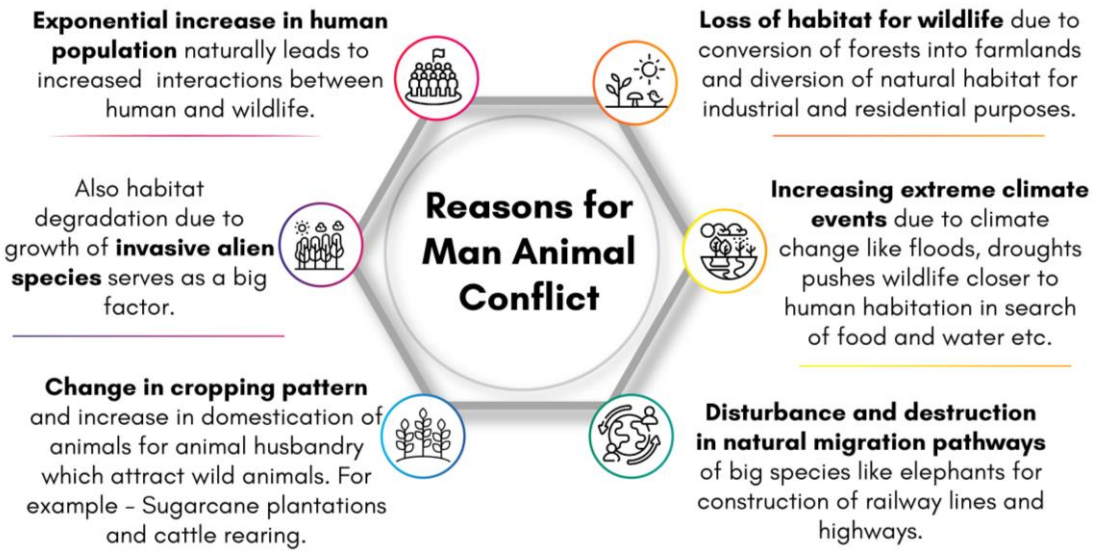


Status in India

- According to **Ministry of Environment Forest and Climate Change between 2018-19 and 2020-21**
  - **222 Elephants were electrocuted** while 45 were killed by trains and 29 by poachers.
  - **29 tigers were killed by poachers** and the reasons for the death of 197 tigers during the period remain suspected.
  - Between 2019-2021, **Elephants took 1549 human lives** while 125 lives were taken by tigers.

Steps taken for reducing HWC

- **National Initiatives**
  - The **Standing Committee of the National Board of Wildlife** has approved the advisory for management of Human-Wildlife Conflict (HWC) in the country.
  - **Policy Steps**
    - ✓ The **National Wildlife Action Plan (2002-2016)** gave two new concepts of conservation reserves and community reserves for better human wildlife relationship management.
    - ✓ Further, the center is providing financial support to the state government for Integrated development of Wildlife Habitat.



  - **Legislative Steps**
    - ✓ The **Indian Forest Act** provides establishment of Protected forests and Reserved forests for better management of wildlife.
    - ✓ The Parliament amended **Wildlife Protection Act 1972** to provide legal framework for
      - Prohibition on hunting
      - Protection and management of wildlife habitats
      - Establishment of protected areas
      - Regulation and control on trade of wildlife and related products
    - ✓ The Wildlife Protection Act, 1972 also empowers the **concerned authorities to deal with problematic animals including declaring any protected species as vermin** and to be culled.
- **State level Initiatives**
  - The **Odisha government** started spreading seed bombs in order to support growth of natural forest which can serve as sustainable feedstock for animals.
  - Steps like bio-fencing are being undertaken by the **Uttarakhand government** in order to reduce movement of wild animals in and around human habitations.
  - Policy responses like including man animal conflict in the list of disasters by the **Uttar Pradesh government** has been taken to ensure compensation for damage.

Way forward

- **Early Warning systems:** Use of drone technology to monitor the migration pattern of big species like elephants to provide early warning to the local population can help reduce man animal conflicts.
- **Wildlife Corridors:** Integrating wildlife corridors in developmental planning like Eco bridges can help reduce adverse impact of habitat destruction by enabling smooth migration of wild animals.
- **Ecotourism:** Promoting ecotourism in a sustainable manner can help the local population to reap benefits of the local wildlife which can help bring attitudinal changes towards wildlife conservation.
- **Buffer Zone:** Creation of natural buffer zones between wildlife habitat and human habitation can help reduce man animal conflict by providing sufficient feed stock and prey population to wild animals in their natural habitat.
- **Electric Fencing:** Mild voltage electric fencing can be installed around the agricultural fields and remote villages where concentration of wild animals is high to scare the animals.

5.6. FLY ASH UTILIZATION

Why in News?

Recently the Union Ministry of Environment, Forests and Climate Change (MoEFCC) has released notification on fly ash utilization.

Amendments And Notification on Fly Ash Utilisation

Notification year	Summary of the Notification
1999	**Stipulated targets** for utilisation of fly ash produced at thermal plants
2003	Mandated the **use of 100% fly ash by construction agencies** in phased manner in five years until August 2007
2009	**Revised and extended the timelines** and period of implementation for achieving 100% utilisation in a phased manner by 2014
2014	Mandated all thermal plants located more than 500 km away from a coal mine to **use coal with ash content not exceeding 34%**
2016	**Extended the area within which fly ash can be utilised** from 100 km to 300 km. The time period to comply with100% utilisation was again extended to 2017
2019	**Certain fly ash uses** like mine filling, reclamation of low-lying areas and as soil conditioner in agriculture **were prohibited under the environmental clearance (EC) conditions for thermal power plants.** The **2019 amendment reverses such EC conditions** in order to enhance utilisation.
2020	**Did away with mandatory 34% ash content cap** stipulated in 2014 notification
2021	**Mandated 100% utilisation of ash in "eco-friendly purposes"** in a three-year cycle

Source: Government notifications in the years 1999, 2003, 2009, 2014, 2016, 2019, 2020 and 2021

More on news

- The amendments are made under the power conferred on the central government under **Environmental Protection Act 1986.**
- There have been various notifications for Fly Ash Utilization. **Starting with 1999, the most recent ones being in the year 2021 and 2020**.
- **Though fly ash utilization in India has increased from nearly 10% in 1996 to highest 92% in 2020-21, over 17 million tonnes out of the 222 million tonnes fly ash generated by still remain** un-utilised.

Key Highlights of the Amendments

- **Wider Scope**: The **new amendment extends the compliance of fly ash utilization targets to new thermal power plants** established on or after the publication of fly ash utilization rules 2021.
- **Time Limit**: The new Thermal Power Plants (TPP) will have a time period of **4 years to achieve 100 percent fly ash utilization.**
  - It is similar to the targets of thermal power plants operating at 60 percent of their capacity which is to be calculated from 1st April 2022.
- **Legacy Ash Utilisation**: The legacy ash (ash which is being stored from past years) stored with the thermal power plants have to be **fully utilized within a period of 10 years.**
  - This period is to be calculated from 1st April 2022 and such utilization is over and above the fixed utilization targets for that year.
- **Reclamation**: The amendment allowed reclamation activity in solar and wind power plants as per the guidelines issued by the Central Pollution Control Board (CPCB).
  - Earlier it was only allowed in green belts and plantations.
- **Time Limit for Reclamation and Certification:** The amendment increases the time period to **three years (earlier only one year)** for carrying out stabilization and reclamation activities.
  - A certificate needs to be obtained from CBCP for the same.
- **Clarifying definition of legacy ash**: All ash stored in ash ponds/dykes other than currently operational ones shall be treated as legacy ash.
- **Guidelines for Ash Ponds:** The amendment permits existing TPPs (earlier only newly established TPPs were allowed) to **set up a temporary ash pond of the size (0.1 hectare per MegaWatt).**
  - This provision is not applicable to TPPs established before 3rd November 2009.

Key Highlights of 2021 Notification

- **Introduction of Polluter Pays Principle** with a fine for non-achievement of targets.
- **Role of CPCB to review ways** to utilise fly ash.
- Earlier, a 4 year cycle was present for utilisation of fly ash. This notification **reduced it to 3 years**.

- **Competent Authority for Certification: CPCB along with Central Electricity Board** shall provide guidelines for safe management and certification of all existing and new, operational and reclaimed and stabilized ash ponds.
  - This is to be done within three months from the date of **publication of ash utilization policy 2021.**
  - **2021 rules did not clarify which ash ponds were to be certified** which is now being clarified by this amendment.
- **Ban on new Ash Ponds**: The amendment bans any coal and lignite based TPPs from establishing or designating any new operational ash ponds.
- **Pricing of Ash Ponds:** It provides for mandatory usage of fly ash based construction material for both public and private construction lying within a radius of 300 Kms from a coal or lignite based TPPs.,
  - This is to be at a rate not more than the price specified by
    - ✓ Central Public Works Department (CPWD)
    - ✓ Concerned Public Works Department (PWD)
    - ✓ Price of alternative products, if not mentioned in the Schedule of Rates.

Fly ash

- Fly ash is a **particulate material** produced from the combustion of coal in thermal power plants.
- It is **created when the mineral impurities in the coal fuse together** as they come out of the combustion chamber, then cool down and harden.
- **Chemical composition:** Composed of **silica, aluminum, iron, calcium, and oxygen**. Plus, **arsenic and lead** can be found at trace levels.
- **2 common types of Fly Ash**
  - **Class F**: Low-calcium and carbon content less than 5 percent.
  - **Class C**: High-calcium and carbon content of less than 2 percent.

Fly Ash utilization

Why utilisation is necessary?

- **Occupies a lot of land space**.
- **Indian coal has much more ash content** than other countries.
- Ash ponds **may leach heavy metal traces into groundwater**.
- **Increase in the concentration of particulate matter**.
- **Reduce the rate of photosynthesis and transpiration** in the plants.
- **Challenges for solid waste management** in the nearby areas.
- **Adversely impacts human health** due to respiratory illness.

Benefits of Fly Ash Utilisation

- **Cost Effective substitute for Portland cement**.
- **Durable as it increases the life of concrete roads** and structures.
- **Environmentally Sustainable as i**t can be utilized **for carbon sequestration**.
- Has potential in **wastewater treatment** owing to its chemical composition.
- Effective for the removal of mercury.

Challenges in use of Fly Ash

- **Lack Of Awareness** with fly ash products.
- **Strength Gain occurs at a slow pace**
- **Seasonal Limitations as** low temperatures lengthen setting times.
- **Color Variability as i**t is more difficult to control the color of concrete containing fly ash.
- **Secondary Environmental Pollution as it** may cause leaching of some elements into water.

Initiatives for fly ash utilisation in India

- In 2009 it was made it a **saleable commodity**.
- **ASH TRACK Mobile App** has been launched by the Ministry of Power.
- The National Green Tribunal (NGT) directed the constitution of a **'Fly Ash Management and Utilisation Mission'**.
- Rationalizing the GST on fly ash bricks and blocks at concessional GST rate of 5%.

State Level

- Maharashtra has a State Fly Ash policy 2016.
- Rajasthan govt decided that power plants will give fly ash to NHAI free of cost for road construction

Way Forward

- Utilization of ash should be made mandatory for **backfilling of mines and road construction**.
- **Railway track** may be extended from the coal yard of TPP to the ash dyke.
- **Transport subsidy** may be contemplated to encourage fly ash utilisation.
- **Incentives to private sector entrepreneurs** for setting up fly ash bricks and tiles manufacturing units.
- **Export potential** of fly ash should be explored.

5.7. SAMUDRAYAAN MISSION

Why in news?

Union ministry of earth sciences recently shared details of **Samudrayaan Mission.**

More about news

- Samudrayaan Mission is aimed to develop a self-propelled **manned submersible (MATSYA 6000)** to carry three human beings to a water depth of 6,000 meters for **deep ocean exploration**.
  - MATSYA 6000 is being developed by **National Institute of Ocean Technology**, Chennai.
  - It has has developed 6000m depth rated Remotely Operated Vehicle (ROV) and various other underwater instruments such as Autonomous Coring System (ACS), Autonomous Underwater Vehicle (AUV) and Deep Sea Mining System (DSM) for the exploration of deep sea.
- It has an endurance of 12 hours of operational period and 96 hours in case of emergency. It is being developed under **Deep Ocean Mission (DOM).**

About Deep Ocean mission

- Union cabinet approved deep ocean mission in **2021** with a total budget of ₹4,077 crore for **five years.**
- It aims to **explore Deep Ocean** for resources and develop **deep sea technologies** for sustainable use of ocean resources.
  - The part of the ocean that lies **below a depth of 200 metres** is defined as the **deep sea.**
  - Considering importance of **oceans on sustainability**, UN declared 2021-2030 as **Decade of Ocean Science** for Sustainable Development.
- It is a **mission mode project** to support Blue Economy initiatives. Blue economy is **sustainable use of ocean resources** for economic growth, improved livelihoods, and jobs while **preserving the health of ocean ecosystem.**
- Mission is to be implemented under **aegis of Ministry of Earth Sciences**.

Other Indian initiatives for blue economy:

- **Draft National Policy for India's Blue Economy released by** Ministry of Earth Sciences (MoES).
- **India is party to various multilateral agreements/arrangements** including Indian Ocean Tuna Commission (IOTC), Indian Ocean Rim Association for Regional Co-operation (IOR-ARC), BIMSTEC etc. to strengthen Blue economy.
- **Umbrella scheme "**Ocean Services, Modelling, Application, Resources and Technology (**O-SMART**)" for implementation during the period from 2021-26.
- **Pradhan Mantri Matsya Sampada Yojana** aims to bring about **Blue Revolution** through sustainable and responsible development of fisheries sector in India.
- Memoranda of Understanding (MoUs) signed between **India and other countries** like Norway, Bangladesh, Iceland, Indonesia etc to promote bilateral cooperation in field of Fisheries.

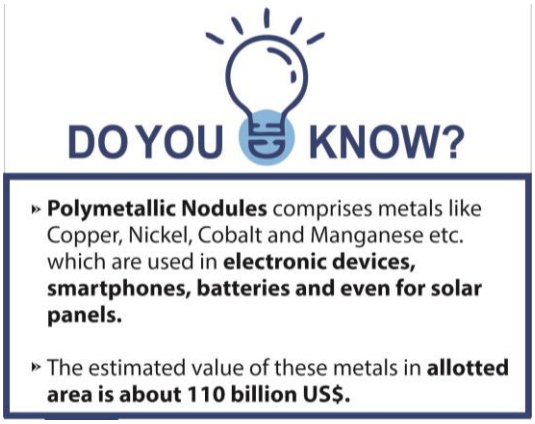
Major components of Deep Ocean Mission

Thematic area	Details	Targeted Blue Economy priority area
Technologies for Deep Sea Mining, and Manned Submersible	Development of a **manned submersible** to carry 3 people to a depth of 6000 metres in the ocean and an **Integrated Mining System** for mining Polymetallic Nodules in the central Indian Ocean.	Exploring and harnessing of **deep-sea minerals and energy.**
Ocean Climate Change Advisory Services	A suite of **observations and models** will be developed to understand and provide **future projections of important climate variables** on seasonal to decadal time scales.	Coastal tourism

Exploration and conservation of deep-sea biodiversity	Bio- prospecting of deep-sea flora and fauna including microbes and studies on **sustainable utilization of deep sea bio-resources** will be the main focus.	Marine Fisheries and allied services
Deep Ocean Survey and Exploration	To explore and identify potential sites of m**ulti-metal hydrothermal sulphides mineralization** along the Indian Ocean mid-oceanic ridges.	Deep-sea exploration of ocean resources.
Energy and freshwater from the Ocean	Studies and detailed engineering design for **offshore Ocean Thermal Energy Conversion (OTEC)** powered desalination plant are envisaged.	Off-shore energy development
Advanced Marine Station for Ocean Biology	Development of **human capacity and enterprise** in ocean biology and engineering. This component will translate **research into industrial application and product development** through on-site business incubator facilities.	Marine Biology, Blue trade and Blue manufacturing.

Significance of Deep Ocean mission

- **Energy and mineral security**: India has been allotted a site of **75,000 sq. km**. in Central Indian Ocean Basin (CIOB) by International Sea Bed Authority for **exploitation of polymetallic nodules.** Just **utilizing 10%** of the PMN reserve available in area, country can meet its **energy requirements for the next 100 years**.
- **Economic growth:** Ocean is a major economic factor supporting **fisheries and aquaculture, tourism, livelihoods and blue trade.**
  - It will help India in achieving target of **over Rs. 100 billion "Blue Economy"** through its ocean resources.
- **Help in mitigating climate crisis**: Understanding deep seas would go a long way in **mitigating crisis of climate change**.
  - It will help in future **projections or predictions like** trends in **sea level**, cyclone etc.
  - Enhanced understanding of deep seas will help in implementation of **National Biodiversity Targets**.
- **Drug discovery and development**: Deep Sea harbours several **novel biomolecules** of industrial and **biomedical** importance.

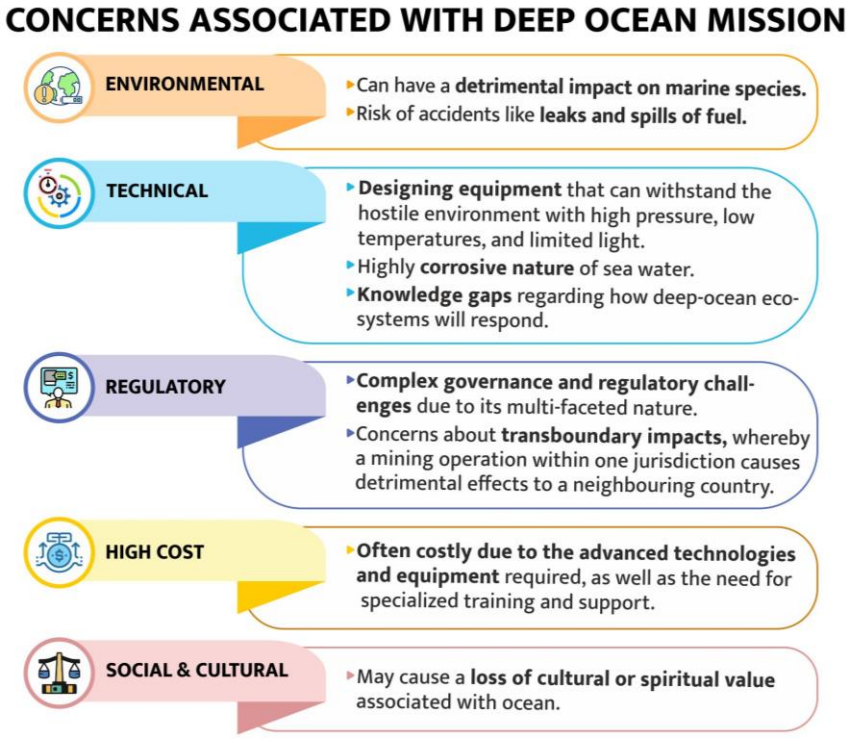


International Seabed Authority (ISA)

- It is an **autonomous international organization** established under 1982 United Nations **Convention on the Law of the Sea** (UNCLOS) and **1994 Agreement** relating to Implementation of UNCLOS.
- It has the mandate to ensure the **effective protection of the marine environment** from harmful effects that may arise from deep-seabed related activities.
- ISA has its headquarters in **Kingston, Jamaica.**

Road Ahead

- **Fill knowledge gaps**: Establish an **international research agenda** to collect and synthesize **high-quality, deep-sea scientific data** to fill identified gaps in knowledge required for **decision-making and environmental management**.
  - Exploration and impact monitoring may expand scientific knowledge and enable **science-informed decision-making**.
- **Regulatory framework:** An **effective regulatory framework** is needed to avoid **lasting harm to the marine environment**.
  - Stringent **precautionary measures** and **mitigation strategies** should be a core part of regulations.



- **Promote open dialogue**: Enhance **political, industry and civil-society awareness** of the issues and extent of stakeholder engagement to **facilitate open dialogue**.
  - Ensure **inclusive stakeholder participation** to **inform decisions** taken at the international and state level.
- **Strengthen legal framework to enforce liability:** Lacuane in international legal framework with regards to **identifying and enforcing liability** for **compensation, clean-up or remediation** must be addressed**.**
  - An "**Environmental Compensation Fund**" can be created to fund any **environmental remediation** in event of "serious harm" to marine environment caused by **exploration activities.**

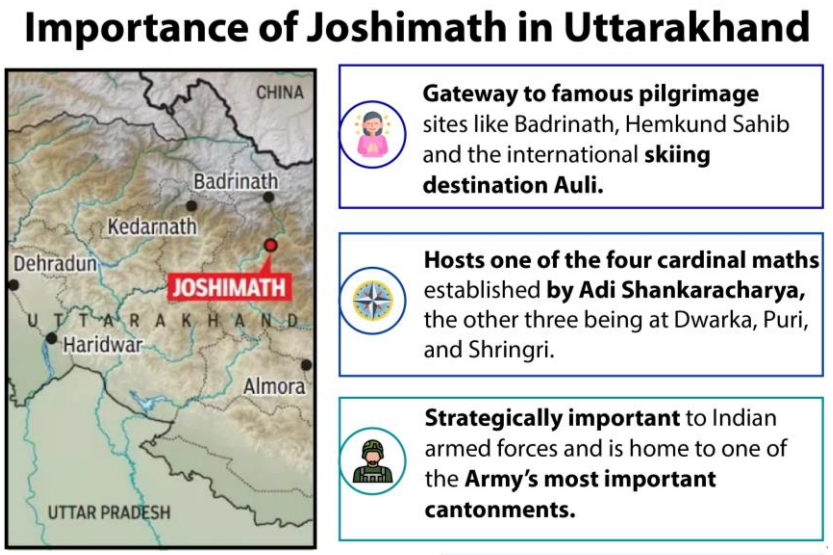
5.8. JOSHIMATH LAND SUBSIDENCE

Why in news?

Uttarakhand's Joshimath has been declared as a landslide and subsidence-hit zone.

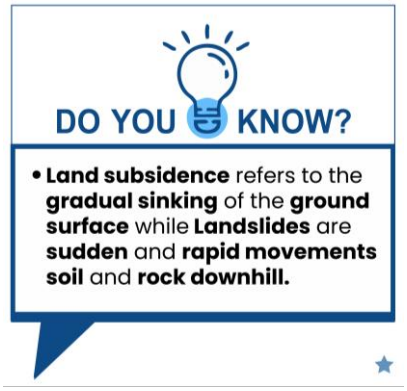
More about news

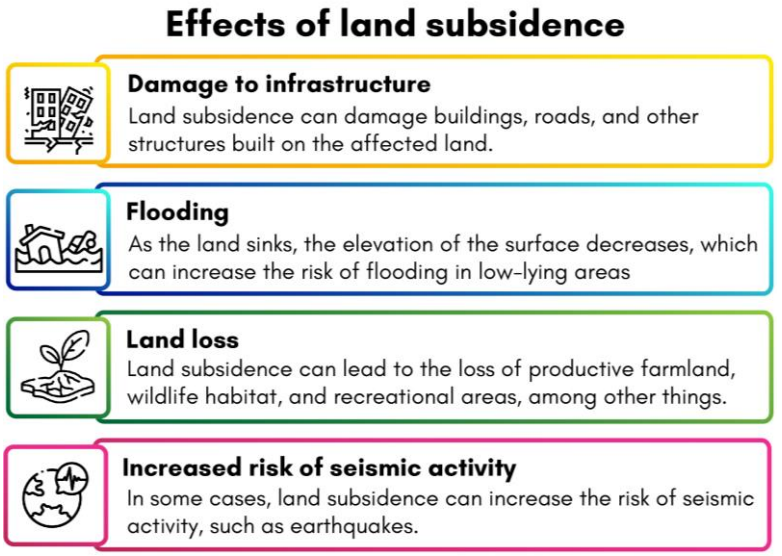
- Satellite images of Joshimath released by National Remote Sensing Centre of **Indian Space Research Organisation (ISRO)** show that it sank at a rapid pace of **5.4 cm in just 12 days**, triggered by a possible subsidence event on January 2.
- As per reports, huge cracks have developed in more than 600 houses in Joshimath, making them **unfit for habitation**.
  - **Roads and fields** have also been similarly affected.



About Land subsidence

- United States Geological Survey describes land subsidence as a **gradual settling or sudden sinking** of Earth's surface due to **removal or displacement of subsurface** earth materials.
- Subsidence is a **global problem.**
  - Experts estimate that by 2040, land subsidence will affect **eight percent of the world's surface.**
  - **Approximate 1.2 billion people** living in 21percent of major cities across globe.
- It is most often caused by the **removal of water, oil, natural gas, or mineral resources** out of the ground by pumping, **fracking, or mining** activities. Further, it can also be caused by **natural events** such as earthquakes, soil compaction, erosion and sinkhole formation.
  - According to U.S. Geological Survey, mo**re than 80% of land subsidence** across the world is caused due to **excessive groundwater extraction.**





Causes of land subsidence in Joshimath

- **Location and topography**:
  - Joshimath is situated in **middle slopes** of a hill bounded by:

    - ✓ **Karmanasa and Dhaknala streams** on west and east and
    - ✓ **Dhauliganga and Alaknanda rivers** on south and north.
  - The area around town is covered with **thick layer of overburden material** which makes it **highly vulnerable** to sinking.
  - Study by Uttarakhand State Disaster Management Authority (USDMA) highlighted that perennial stream, snow in upper reaches, and highly weathered rocks with low cohesive characteristics makes it **prone to landslides**.
- **Geology**: Joshimath sits on **a fault line (Vaikrita Thurst)** and is close to another two (**Main Central Thrust and Pandukeshwar Thrust**) which makes it highly vulnerable to sinking because of **tectonic activity.**
  - Further, city has been built on an **ancient landslide material** i.e rests on a **deposit of sand and stone**, not rock, which doesn't have **high load-bearing capacity**.
- **Unplanned construction:** Unplanned developmental activities without due regard to bearing capacity have contributed in aggravating slope instability-related issues in Joshimath, according to the USDMA survey report in August 2022.
  - Unplanned and unauthorised construction **led to the blocking of the natural flow of water, which eventually results in frequent landslides.**
- **Improper water drainage:** Due to the lack of drainage system in Joshimath, natural and anthropogenic liquid waste seeps into the ground and weakens the land.
- **Climate change acts a force-multiplier**: **IPCC reports** (2019 and 2022) have critically observed that **Himalayan region is very prone** to disasters.
- **Other factors**
  - **NTPC's Tapovan Vishnugad Hydro Power Project**
  - **Increasing population and tourism** in Joshimath

What can be done?

- **Ban on Construction Activities:** Experts advise a **complete shutdown** of construction and hydroelectric projects in the area.
  - Heavy construction work should only be allowed after **examining the load-bearing capacity** of the soil. For road repair and other construction work, it is advisable **not to remove boulders** by digging or blasting the hillside.
- **Detailed investigation:** Experts have called for a detailed **geotechnical and geophysical investigation** of the area to determine its **carrying capacity**.
- **Revise town planning:** Town planning **must be revised** to account for the new variables and **shifting geographical conditions**.
  - A risk **sensitive urban development plan** for Joshimath should be developed.

Construction projects near Joshimath

- **Tapovan Vishnugad Hydro-electric Project:** It is a 520MW **run-of-river project being constructed on Dhauliganga River.**
- **BRO's Helang-Marwari bypass project:** A 6-km long bypass construction **from Helang to Joshimath to Marwari** to **reduce the distance to Badrinath**.
- **Badrinath Highway in Chardham Project:** It is a part of the construction of the Chardham Project.
- **Chardham Railway and Tunnel Project:** The 125 km **Rishikesh-Karnaprayag Railway line in Uttarakhand** requires the construction of at least 17 tunnels with an escape and main tunnel, ballastless tracks, and 35 bridges.

Measures taken to prevent land subsidence in India

- **Regulation of groundwater extraction**: The Central Ground Water Authority (CGWA) has been regulating groundwater extraction in over-exploited and critical areas to prevent land subsidence.
  - The Indian Institute of Remote Sensing recently signed an MoU with the Central Groundwater Board **to study the effect of land subsidence in northern India**.
- **Remote Sensing and GIS:** Remote sensing and GIS technologies are used **to monitor land subsidence over time and to identify areas that are susceptible to subsidence.**
- **Monitoring and regulation of large infrastructure projects**: Project specific conditions related to safety measures like installation of Early Warning Telemetric system, Disaster Management Plan etc. are prescribed in the Environmental Clearances for large projects.
  - The Ministry of Mines has been regulating mining activities to prevent land subsidence.

Mahesh Chandra Mishra committee (1976)

- The government appointed MC Mishra committee for **reconnaissance of the land subsidence near the Himalayan border**.
- Report stated that Joshimath was **situated on an old landslide zone**, and it does not have high load bearing capacity.
  - Joshimath could sink if development **continued unabated**.
- **Recommendation**
  - **Restrictions on heavy construction work**, agriculture on slopes, felling of trees.
  - **Construction of pucca drainage** to stop seepage of rainwater, proper sewage system, and cement blocks on riverbanks to prevent erosion.

- **Replantation in region:** To **retain soil capacity**, experts have recommended **replantation in the region**, especially **at sensitive sites.**
  - A massive **campaign to plant trees and grass** should be undertaken to conserve soil and water resources.
  - **Cutting of trees** for supplying township with timber, firewood, and charcoal may be **strictly regulated**.

Conclusion

Central government agencies, experts and the state government are preparing **short, medium, and long-term plans** for the land subsidence crisis situation in Joshimath. Government should also assess requirement of repair and restoration efforts at **all other vulnerable sites** as well.

5.9. LARGE DAMS IN INDIA

Why in news?

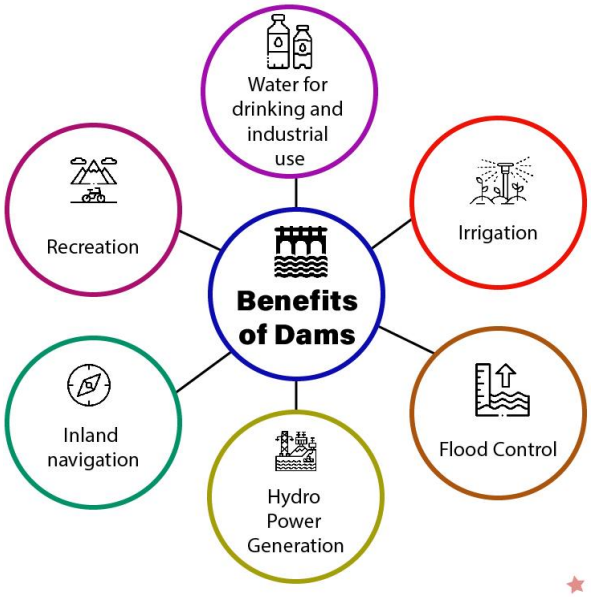
A new study by United Nations highlighted that **around 3,700 dams** in India will lose **26 per cent of their total storage by 2050** due to accumulation of sediments.

United Nations University Institute on Water, Environment and Health (UNU-INWEH)

- UNU-INWEH is one of the **United Nations University (UNU) institutes, an academic arm of the UN.**
- **UNU-INWEH is the only Institute in UNU that focuses entirely and solely on water issues.**
- UNU-INWEH's mission is **to help resolve pressing water challenges that are of concern to the United Nations, its Member States, and their people**.

More about news

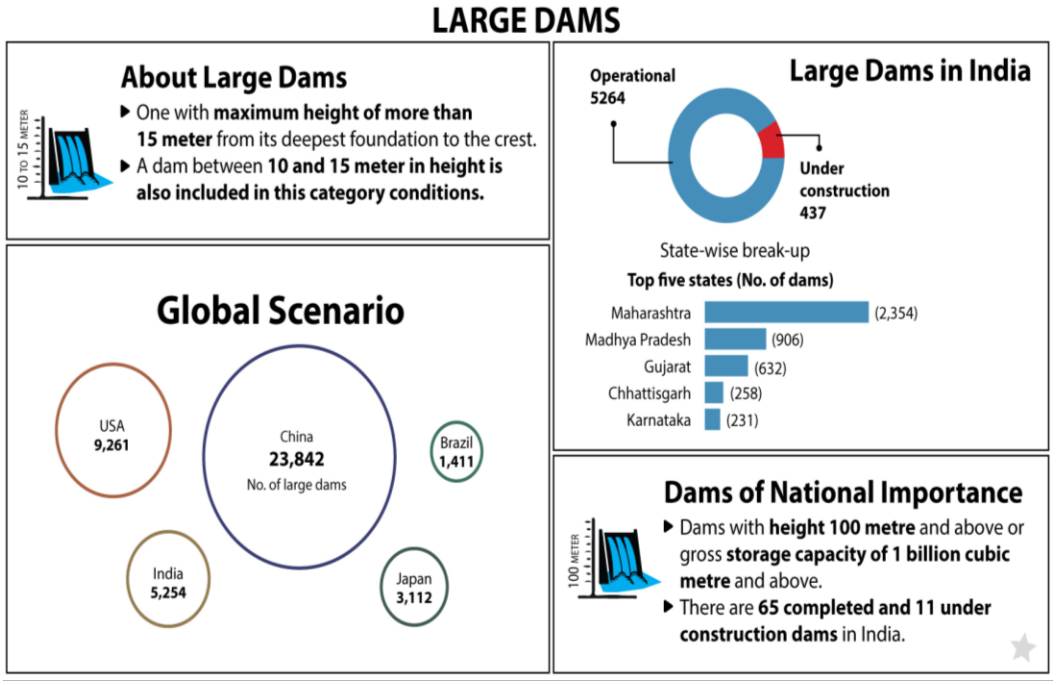
- The study by the **United Nations University Institute on Water, Environment and Health (UNU-INWEH)** shows that large dams in 150 countries will lose **26 per cent of their total storage by 2050 due to sediment trapped in them.**
  - Trapped sediment has **already robbed roughly 50,000 large dams** worldwide of an estimated 13 to 19 per cent of their combined original storage capacity.
- Earlier in 2015, Central Water Commission had reported that among 141 large reservoirs which are over 50 years old, **one quarter had lost at least 30 per cent of their initial storage capacity**.



Issues associated with large dams

- **Structural issues**
  - **Ageing large dams**: Many large dams were **built half a century ago**.
    - ✓ Such large constructions become weak because **construction materials** such as concrete and steel d**eteriorate due to abrasion** from waves, silt, sand, and gravel.
  - **Sedimentation:** The sediment that accumulates behind the dams reduces the water storage capacity of the reservoir, leading to reduced power generation, irrigation, and drinking water supply.
    - ✓ Sedimentation also affects the dam's structural integrity and increases the risk of flooding downstream.
  - **Seismic Vulnerability:** Large dams in India are often built in seismically active areas, making them vulnerable to earthquakes.
- **Environmental issues**
  - **Environmental impact**: Cause environmental impacts, including the **loss of wildlife habitats, alteration of river ecosystems, and changes in the hydrology of the area.**
  - **Climate change:** Dams **emit greenhouse gases like methane**, which can contribute to climate change.
- **Social and Cultural Impacts**
  - **Displacement:** Analysis of data for 156 large dams in India shows that **everyone sq. km of area submerged** by large dams **displaces around 154 people**.
  - **Cultural loss:** The construction of large dams can have a major impact on local communities, including the loss of sacred sites, the disruption of cultural traditions, and the destruction of historical sites.

- **Political issues**: Shortage of water is increasingly being felt **resulting in conflicts** across the world.
  - There is a **dispute among Punjab, Haryana, and Rajasthan** regarding the allocation of water from the **Bhakra Nangal dam**.
- **Other issues:**
  - Large dams are often expensive to build and can be subject to **significant cost overruns**.
  - Dams may cause **increases in water sourced illnesses** like typhus, typhoid fever, malaria and cholera.
  - **Lack of funds** for repair and maintenance of dams.
  - **Lack of information** particularly with regard to **ultimate storage capacity** (USC) of dams**, utilisable surface water (USW), and ultimate gross irrigation potential (UGIP).**



Initiatives taken for large dams in India

- **Dam Safety Act, 2021:** It provides for **surveillance, inspection, operation and maintenance** of the specified dams and **institutional mechanism** to ensure their safe functioning.
  - It has provisions for comprehensive **dam safety evaluation** of all the specified dams. The evaluation is required to be carried out by **independent panel of experts** constituted by the dam owners.
- **Register of large dams**: Central Water Commission (CWC) compiles and maintains **nation-wide register of Large Dams** i.e. National Register of Large Dams (NRLD), as per information provided by dam owners.
- **Dam Rehabilitation and Improvement Project (DRIP):** It aims to improve **safety and operational performance** of selected existing dams and strengthen **dam safety institutional setup** of participating States / Implementing Agencies.
- **Web based tools**: CWC has developed web-based **asset management tools** named **Dam Health and Rehabilitation Monitoring Application (DHARMA) and Seismic Hazard Analysis Information System (SHAISYS).**
- **Guidelines for Safety Inspection of Dams**: Primary aim of these Guidelines is to give **dam owners, dam engineers, and other professionals** with information to help guide **planning and execution** of dam inspection programs.

Reservoir sedimentation

- Sedimentation is a **natural process where the flow of water carries soil, sand, and rocks downstream**, which get deposited at the bottom of the river or reservoir.
  - The sedimentation problem is **particularly acute in the Himalayan region**, where the rivers carry a large amount of sediment due to the high erosion rate of the mountains.
- To mitigate the sedimentation problem, various techniques are employed, such as **sediment flushing, desilting, sediment bypass tunnels etc.**
  - However, these methods are expensive and have limited effectiveness.

Road Ahead

- **Remedy for issues arising from dams**: World Commission on Dams lists **seven steps as a remedy** to issues arising from dams (see infographics).
- **Decommissioning of large dams**: Considering futility of large dams, in United States, **rate of decommissioning of large dams has overtaken the rate of construction** since 1998. India should also undertake **long term research** on dam decommissioning, river morphology and **feasibility of rebuilding** of storage structures.

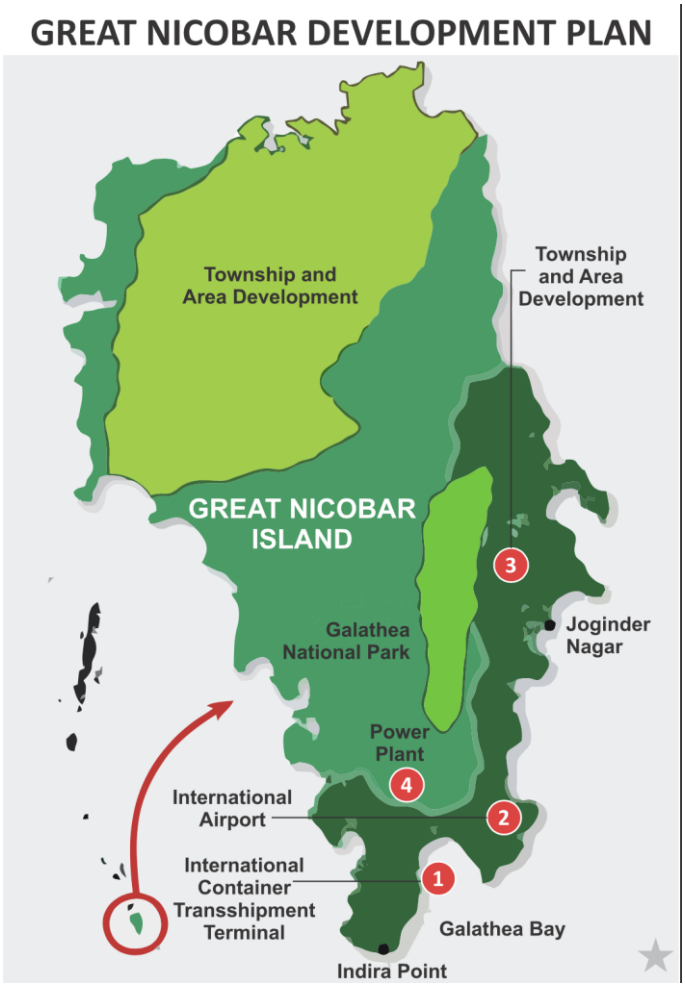
- **Integrated water management**: Develop an **integrated and sustainable plan** for water management, taking into consideration hydrological units involving **allied disciplines** such as soil management, land use, etc.
- **Using advanced technology for collecting information**: Use of **remotely operated underwater vehicles** (ROVs) for upstream underwater inspection of dam body and reservoir floor.
    - Drones could be used for **surface mapping of the downstream** face of the dam.

- **Revision of policies**: Existing policies, plans, and water management discourse need **urgent revision** with recognition of **crisis unfolding due to ageing large dams**. C**omprehensive damage** to water sector and impact on **interrelated sectors should be recognised** in various **policies**.
- **Assessing the alternatives to large dams**: Country's water policymakers, planners, and water managers have to **discover alternatives** to dysfunctional large storage structures. **Some alternatives** include-
    - Selecting sites for construction of **water harvesting structures** of varying capacities.
    - Building medium or minor irrigation based **small storage structures**.
    - Identifying mechanisms to **recharge aquifers** and store water underground.

5.10. INTERNATIONAL CONTAINER TRANSHIPMENT PORT (ICTP)

Why in News?

The Ministry of Ports, Shipping, and Waterways has invited bids for the ₹41,000-crore **mega International Container Transhipment Port (ICTP) at Great Nicobar.** It is being planned for the **Galathea Bay** of Great Nicobar Island.



More on News

- ICTP being planned is part of the **holistic development of Great Nicobar Island**.
- It will be completed in **four phases**. **Phase 1** will create a handling capacity of **4 million TEUs, increasing to 16 million TEUs** in the ultimate stage of development.
    - A **twenty-foot equivalent unit (TEU)** is an approximate **unit of measure used for cargo containers**.
- **Syama Prasad Mookerjee Port (**Kolkata-based**) is the nodal agency** for the implementation.
- **Public Private Partnership (PPP)** will be encouraged for this project via **Landlord model**.
    - Under Landlord Port model, the **port authority acts as regulatory body and as landlord**, while **port operations (especially cargo handling) are carried out by private companies.**

Significance of ICTP project

- **Strategic Location:** Proximity to the International Trade Route (40 nautical miles from Malacca Strait) with existing transhipment terminals like Singapore, Klang, and Colombo.

- Availability of **natural water depth** of more than 20 metres.

- **Economic efficiencies:** Indian Ports can **save revenue loss** of around $200-220 million a year as about 75% of India's transhipped cargo is handled at ports outside the country.
  - **Reduce logistics inefficiencies and push to allied businesses** such as ship supplies, ship repair, warehousing and bunkering etc.
  - **Help in reducing risks to the country's export competitiveness** and create an opportunity for India to become a **large hub for Asia-Africa, Asia-US/Europe container traffic trade**.
  - Other benefits include **forex savings, foreign direct investment, increased economic activity** at other Indian Ports.
- **Development of the region:** With development of ICTP at Great Nicobar, there is a huge potential for improvement in socio-economic variables like **creation of around 1,700-4,000 jobs.**

Holistic Development of Great Nicobar Island

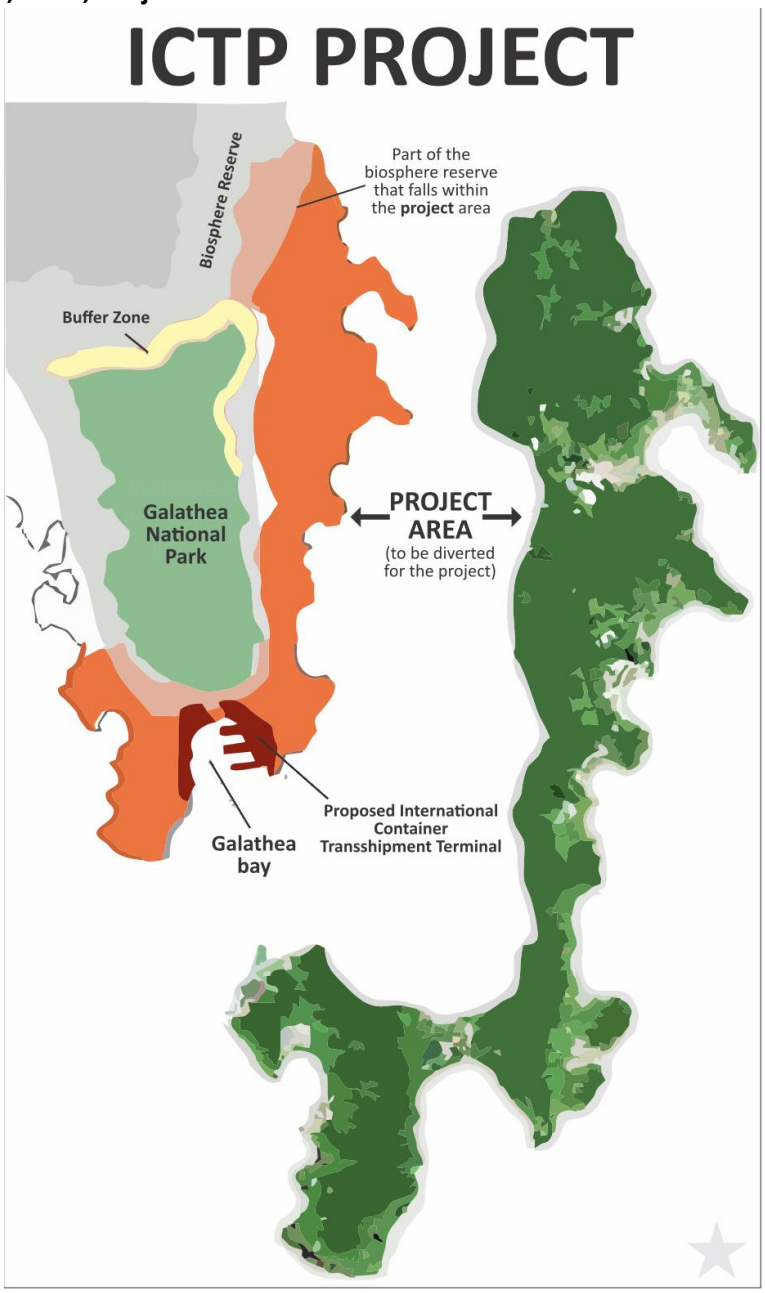
- The Ministry of Environment, Forest and Climate Change (MoEF&CC) gave **environmental clearance** for the Rs 72,000 crore development project on Great Nicobar Island.
- The project is to be implemented in **three phases over the next 30 years**.
- The project includes proposals of a **greenfield city, ICTP, a greenfield international airport, a power plant**, and a **township for the personnel** who will implement the project.

Why Port-Led Island Development?

- **Improves connectivity:** Ports creates the opportunities of inclusive development with **opening up of efficient transportation modes** to islands and **ending their isolation**.
  - **Quality of port infrastructure positively affects logistics performance**; better logistics performance yields higher seaborne trade, and higher seaborne trade yields **economic growth**.
- **Creates economic opportunities:** Improvement in mobility of goods, services, and people result in an **economic push to the local economy and creates tourism opportunities**.
  - A study conducted in **Porto Santo Island of Portugal** reiterates the role of ports in tourism creation.
- **Aids overall development:** Ports are **drivers of infrastructure creation**, which in turn, have strong relationship with the social welfare and economic growth.

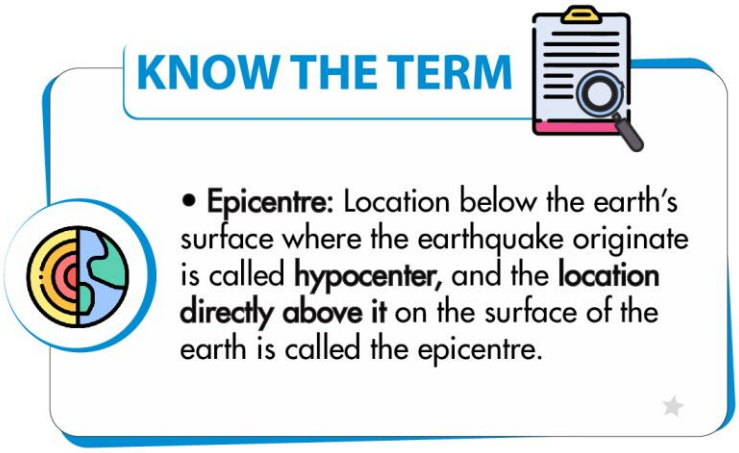
Concerns with the project

- **Environmental and ecological concerns:** The ecologically rich island was declared a **biosphere reserve in 1989 and included in UNESCO's Man and Biosphere Programme** in 2013.
  - **Entire Galathea Bay Wildlife Sanctuary was denotified** by standing committee of the National Board for Wildlife (NBWL) to make way for the ICTP.
    - ✓ This bay is India's **most iconic nesting site for giant leatherback turtles**.
  - **Felling of almost a million trees** for the project, which can adversely **affect wildlife and biodiversity** on the island.



- **Increased runoff and sediment deposits** in the ocean remains a major threat, **impacting the coral** reefs in the area.
- **Loss of mangrove cover** in the island is also concern.

- **Social concerns: More than 90% area of the island** is **designated as a tribal reserve** under the Andaman and Nicobar Protection of Aboriginal Tribes Regulation, 1956.
  - There are concerns that project could **disturb livelihood and culture of tribals**, also **compromising their forest rights** under the Forest Rights Act 2006.
  - There are **two major tribal communities in Nicobar: the Nicobarese and the Shompen**. Shompen is classified as a **particularly vulnerable tribal group (PVTG)** and is critically dependent on the forests for survival.
- **Disaster Vulnerability:** It has been reported that the project's location is on a major fault line, facing frequent earthquakes. The Andaman and Nicobar Islands region comes under the **high-risk seismic zone V category**.
  - **Earthquake:** Great Nicobar is **close to Banda Aceh** in Indonesia, which was the **epicentre of the December 2004 earthquake and tsunami** that caused unprecedented damage.
  - **Subsidence:** According to 2005 report by IIT Kanpur, the coastline of Great Nicobar is vulnerable to **permanent subsidence**.
- **Environmental Pollution** from the terminal project, coastal surface runoff, ballasts from ships, physical collisions with ships, coastal construction, oil spills, etc. can adversely impact the natural ecosystem.



- **Feasibility concerns:** According to some experts, the **financial viability of the project** remains questionable as all the construction material will have to be shipped to this remote island and it will have to compete with already well-established ports.

Way forward

- **Translocation of affected coral reef:** The Zoological Survey of India is currently in the process of assessing how much of the reef will have to be relocated for the project.
  - India has **successfully translocated a coral reef** from the Gulf of Mannar to the Gulf of Kutch earlier.
- **Biodiversity conservation plans:** Government is working to put in place a conservation plan for the **leatherback turtle**.
  - Expert Appraisal Committee (EAC) also imposed **specific conditions for wildlife conservation** for leatherback sea turtles, Nicobar megapodes, saltwater crocodiles and several other species, as well as mangrove restoration.
  - The committee noted that **three new wildlife sanctuaries** had been identified at **Little Nicobar** (for protecting leatherback turtles), **Menchal** (for megapodes) and **Meroe Islands** (for corals).
- **Addressing concerns of tribals:** It has been assured that PVTGs will be **eligible for compensation for the loss of their habitat**, if any, and that there will be a **package for the welfare and development of Shompen** while ensuring their unique identity, culture and heritage is protected.
- **Disaster resilient infrastructure:** Proposed infrastructure should be **made disaster resilient** in line with conduction of **feasibility studies and innovative materials** to withstand severe disasters.
  - Also, **early warning systems and contingency plans** should be put in place.

Related News

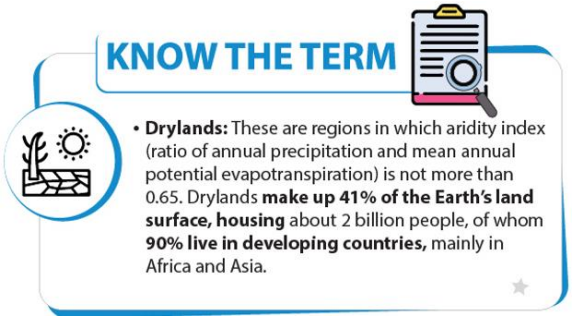
National Logistics Portal-Marine

- **Ministry of Ports, Shipping, and Waterways (MoPSW)** has inaugurated **National Logistics Portal-Marine**, Single Window Logistics Portal**, to improve efficiency and transparency by reducing logistics costs.**
  - It was envisaged by **MoPSW and Ministry of Commerce & Industry.**
  - NLP covers **all modes of transport** in waterways, roadways, and airways along with an E-marketplace.

5.11. NEWS IN SHORTS

5.11.1. URBAN FORESTRY AND URBAN GREENING IN DRYLANDS REPORT

- Report was **produced in framework of Food and Agriculture Organization's (FAO) Green Urban Oases Programme**, launched **to improve resilience of dryland cities** by tackling climate, health, food and economic challenges.
  - Program contributes **to FAO's Green Cities initiative** that was launched in 2020 **to improve livelihoods** and well-being **of urban and peri-urban populations in at least 100 cities** around the world in next three years.
- **Key highlights of report**
  - **Some 35% of the world's largest cities** (including New Delhi, Cairo etc.) are built in world's drylands **facing a high risk of social, environmental, and economic crisis** as they grow.
  - **Scarce rainfall and water supplies** compound negative impacts of rapid urbanization on drylands, **leading to overexploitation** of limited resources, **increased land degradation** etc.
  - **Urban forestry and greening strategies have yet to be fully incorporated** in many dryland cities.
- **Recommendations**
  - **At landscape level**: Plan and maintain green spaces and select trees and other plants that are suited to local environment and cityscape.
  - **At community level**: Boost community participation and a sense of ownership, also to provide incentives to encourage tree planting and building capacity through environmental education.
  - **At governmental level**: Create robust policies and protect urban greenery.



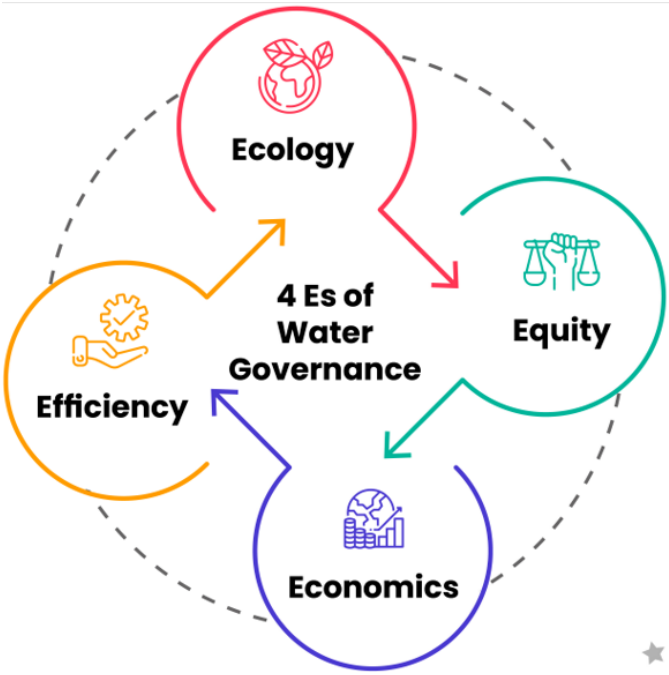
5.11.2. SUSTAINABLE AQUACULTURE IN MANGROVE ECOSYSTEM (SAIME) INITIATIVE

- New initiative of sustainable shrimp cultivation provides hope for mangrove restoration in Sundarbans.
- SAIME is a community-based pilot project in West Bengal under which farmers are **planting mangrove trees around shrimp ponds.**
  - Generally, mangrove forests are cleared to cultivate shrimps in the areas.
  - It is being conceived by **Nature Environment and Wildlife Society (NEWS), Global Nature Fund** and others.
  - It is **expected to restore the mangroves**.
- Mangroves are a group of trees and shrubs that live in **coastal intertidal zone.**
  - They **prevent erosion and absorb storm surge impacts** during extreme weather events.

5.11.3. 1ST ALL INDIA ANNUAL STATES' MINISTERS CONFERENCE

- 1st All India Annual States' Ministers Conference on **"Water Vision@2047" was recently held in Bhopal.**
- Following initiatives were launched during it:
  - National Framework on **Reuse of Treated Wastewater**.
  - National Framework for **Sedimentation Management**.
    - ✓ Sedimentation management enables **optimal utilization of reservoir capacity.** It focuses on Adaptive **structural and functional** measures.
  - Best practices under **Jal Shakti Abhiyan: Catch the Rain**
    - ✓ 'Catch the rain' aims to **nudge** Rainwater Harvesting Structures with **people's active participation.**
  - Inauguration of a **sub-portal of 'Jal Itihas'** under WRIS portal.
    - ✓ Jal Itihas showcases **selected water heritage structures** more than 100 years old.
    - ✓ **India- Water Resources Information System (WRIS)** provides **a single window solution** for all water resources data and standardized information.
  - **'Water Vision Park'** was proposed to be established to promote **idea of afforestation** to **achieve goal of water conservation**.
  - Also, key features of **Water and Allied Resources Information and Management (WARMIS)** were highlighted like Unified data repository, Intelligent Insight into data etc.
- **Significance of the conference:** It will bring in **synergies between different government programmes /schemes in terms of planning, process,** and implementation.
- **Constitutional provisions for water governance:**

- **State list, entry 17** (Water supplies, irrigation and canals, drainage etc);
- **Union list, entry 56** (Regulation and development of inter-State rivers and river valleys)



5.11.4. NATURE RISK PROFILE (NRP)

- **UN Environment Programme (UNEP)** and **S&P Global** has launched **Nature Risk Profile.**
- NRP is aimed at **enabling financial sector to measure and address nature-related risk** by providing scientifically robust and actionable analytics on nature impacts and dependencies.
  - Its methodology is based on **Kunming-Montreal Global Biodiversity Framework (GBF)**, adopted in December 2022.
  - GBF includes a **target for governments to take legal, administrative or policy measures** to encourage and enable businesses to regularly monitor, assess, and transparently disclose their risks, dependencies and impacts on biodiversity.

5.11.5. WILDLIFE CONSERVATION BOND (WCB)

- **Also Known as Rhino Bond**, WCB is a five-year $150m sustainable development bond, **to protect and increase black rhino populations** in two protected areas **in South Africa.**
- WCB is an **outcome-based World Bank structured bond** that channels **private capital to finance conservation activities.**
- Together **with financing from Global Environment Facility (GEF),** WCB transfers project risk from donors to investors.
  - It is **part of GEF's Blended Finance initiative** that shows how innovative finance can work to combat global environmental degradation.
  - GEF was **established at Rio Earth Summit**, 1992 **to help developing countries** and countries with economies in transition to meet **objectives of environmental conventions and agreements.**

5.11.6. ASIAN WATERBIRD CENSUS (AWC)

- Asian Waterbird Census (AWC) 2023 is being conducted in India.
- AWC, an annual event, is **a citizen science programme** supporting conservation and management **of wetlands and waterbirds.**
  - AWC is part of global **International Waterbird Census (IWC) coordinated by Wetland International (WI). It was initiated in 1987** in Indian subcontinent.
- **In India**, AWC is jointly **coordinated by Bombay Natural History Society (BNHS) and WI** (global not-for-profit organisation).
  - BNHS, **formed in 1883**, is a **non-governmental organization** engaged in conservation of biodiversity research.
  - BNHS has been designated as a **Scientific and Industrial Research Organization (SIRO)** by Department of Science & Technology.
- **AWC contributes to several conservation activities including**:
  - **Convention on Migratory Species (CMS)**, also known as Bonn Convention, provides a global platform for conservation of migratory animals and their habitats.
  - **Implementation of East Asian-Australasian Flyway Partnership Initiative** (EAAFP) and **Central Asian Flyway (CAF) Action Plan.**
    - ✓ EAAFP is an **informal and voluntary initiative**, to protect migratory waterbirds.
    - ✓ **CAF covers** area of Eurasia **between Arctic and Indian Oceans** and associated island chains. Geographically it **covers 30 countries of North, Central and South Asia** and Trans-Caucasus.
  - BirdLife International's **Important Bird Area Programme**.
  - IUCN/BirdLife International's **Global Species Programme** (Red List).
  - Wetlands International's **Waterbird Population Estimates programme.**

5.11.7. SPECIES IN NEWS

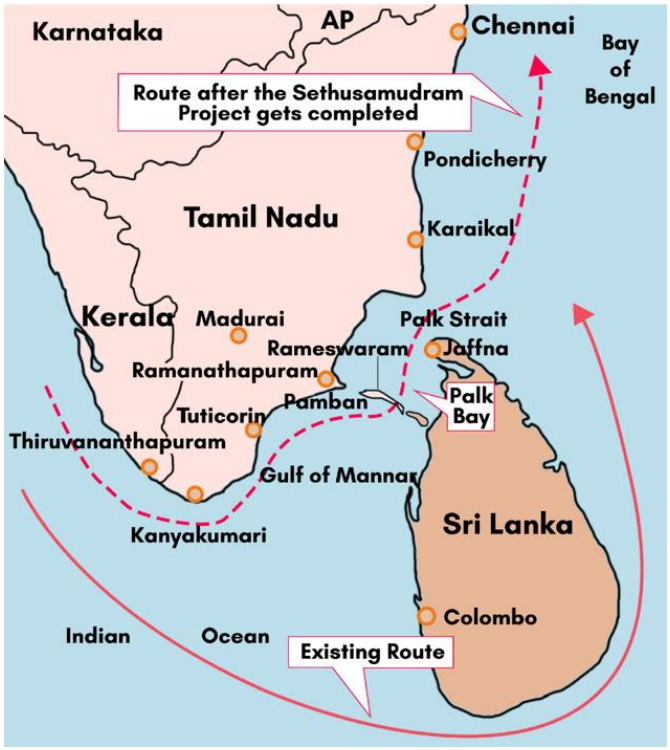
- **White tufted royal butterfly:** It is a **rare butterfly species** that was **spotted recently at Kalliyad (Kerala).**
  - It was earlier **spotted in Agasthyakoodam and Shendurney Wildlife Sanctuary.**
  - It is protected under **Schedule 2 of the Wildlife Protection Act**, 1972
  - **Butterflies,** along with the moths and the skippers, **make up the insect order Lepidoptera.**
  - **Lepidopteran life cycle has four stages**: egg, larva (caterpillar), pupa (chrysalis), and adult (imago).
- **Greater Scaup:** It is a **rare species of duck** (locally known as Sadangman) that was **recently sighted in Loktak lake** (Manipur) after a **gap of over 90 years.**
  - Loktak lake is **famous for Keibul Lamjao National Park** and **Sangai the dancing deer.**
  - Greater Scaup is a **migratory bird widely distributed across Arctic and Subarctic regions** where it mainly nests in coastal tundra habitats.
  - It **belongs to** the family of **Anatidae.**
  - IUCN status: **Least Concern**

5.11.8. NEELAKURINJI (STROBILANTHES KUNTHIANA)

- Ministry of Environment, Forest and Climate Change (MoEF) has **listed Neelakurinji under Schedule III of Wildlife (Protection) Act, 1972**, including it on **list of protected plants.**
- **About Neelakurinji**
  - It is a **shrub that grows in the shola forests of Western Ghats** in South India.
  - Neelakurinji flowers **bloom once every 12 years**.
  - Plant is **named after the famous Kunthi River** which flows through **Kerala's Silent Valley National Park**, where plant occurs abundantly.
    - ✓ Eravikulam National Park, near Munnar, is known for widespread blooming of kurinji.
  - **Blue colour of Kurinji** has given **Nilgiri hills its name**, literally meaning Blue Mountains.

5.11.9. RAM SETU

- Ram Setu, **also known as Adam's bridge**, is a **chain of limestone shoals between Pamban Island** or Rameswaram Island, **off the south-eastern coast of Tamil Nadu, and Mannar Island**, off the **north-western coast of Sri Lanka**.
  - Recently, **Tamil Nadu assembly also passed a resolution** urging Centre to resume work on Sethusamudram Ship Canal project (SSCP).
- National heritage status is sought **in the backdrop of SSCP** that envisages dredging of **a ship channel across the Palk Straits** between India and Sri Lanka.
  - **Two channels** were suggested - **one across Adam's Bridge** and **another through Palk Bay.**
  - **SC, in 2007, had stayed the work** for project and **Centre was also willing to explore another route** to SSCP without damaging Ram Setu.
- **Significance of SSCP**
  - **Reduce steaming distances** between east and west coasts of India.
  - **Strengthen national security by improving navigation** for Indian coast guards and naval ships.
- **Concerns raised against SSCP**
  - Would **destroy natural barrier between Bay of Bengal** and **Palk Bay.**
  - **Oil and marine pollution** associated with shipping traffic **will aggravate ecological stress** in region.
  - **Threats to coral reef platforms** in Gulf of Mannar.

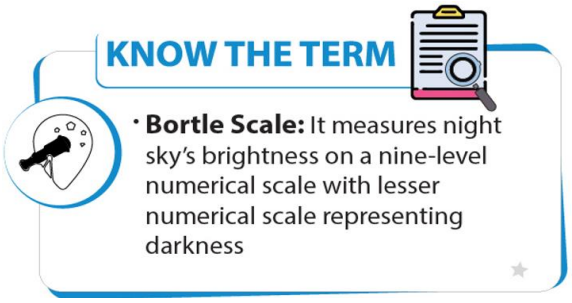


5.11.10. MUNROE THURUTHU ISLAND

- Study by **National Centre for Earth Science Studies (NCESS)** revealed anthropogenic interventions as main reason **for sinking of Munroe Thuruthu Island**.
  - Almost 39% of its land area has been lost in past 2 decades.
  - Island is in **confluence of Ashtamudi Lake and Kallada River in Kerala**.
  - Island's subsidence began with **construction of Thenmala dam under Kallada Irrigation Project**.
- **Proposed Mitigation measures:** Reverse Landscaping, Regulating Sand mining in Ashtamudi lake and Kallada River, **Improving Construction method** of buildings, etc.

5.11.11. DARK SKY RESERVE

- Talacauvery in Kodagu District, Karnataka has emerged as **South India's Hanle.**
  - Hanle (in Ladakh) is India's **first Dark Sky Reserve**.
- Dark Sky Reserve is a designation given to a public or private land with
  - exceptional or distinguished **quality of starry nights**, and
  - **nocturnal environment** that is specifically protected for its scientific, natural, educational, cultural, heritage and/or public enjoyment.
- Dark Sky location **depends on light pollution** which is **measured on Bortle Scale**.
  - Bortle Scale measures **night sky's brightness on a nine-level numerical scale** with **lesser numerical scale** representing darkness.



5.11.12. URANIUM CONTAMINATION IN GROUNDWATER

- A recent report by Central Groundwater Board highlighted that 12 states have uranium levels **beyond permissible limits** in their groundwater.
  - **Safe levels prescribed** by World Health Organization is **30 parts per billion (ppb).**
- **Punjab is worst-affected state** followed by Haryana.
- **Causes of uranium contamination:** Natural uranium content in aquifer rocks, overexploitation of groundwater, bicarbonates used to bring uranium out of source rocks etc.
- **Adverse health Effects of uranium contamination:** Impaired renal function and kidney disease, bone toxicity etc.

5.11.13. LAKES IN NEWS

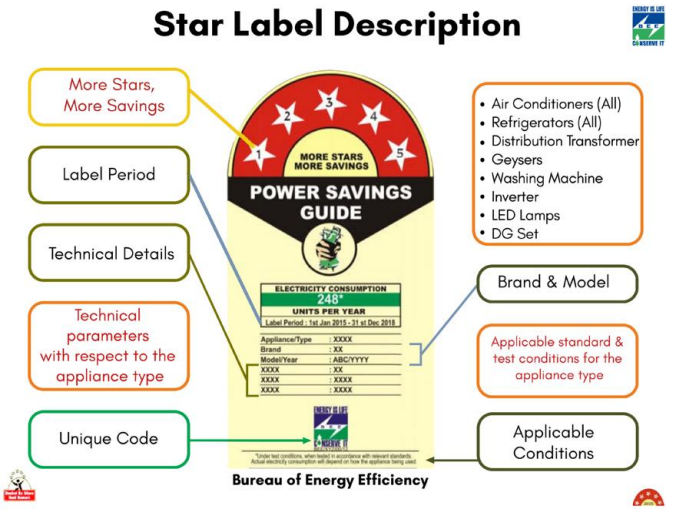
- **Lake Victoria (also called as Victoria Nyanza)**
  - Recently Delhi-based non-profit Centre for Science and Environment released a report on managing Lake Victoria water quality in Tanzania.
  - **Lake Victoria is largest lake in Africa** and chief reservoir of Nile.
  - It is shared by three countries, **Tanzania, Uganda and Kenya**.
  - Among **freshwater lakes** of world, it is exceeded in size only by Lake Superior in North America.
  - **Major threats to lake:** Deforestation, wetland degradation, discharge from urban areas etc.
- **Lake Chad**
  - Recently, a report highlighted **Climate change fuelling conflict in Lake Chad Basin.**
  - It is **freshwater lake** located in **Sahelian zone** of **west-central Africa** at **conjunction of Chad, Cameroon, Nigeria, Niger.**

5.11.14. HAWAII'S KILAUEA VOLCANO

- Hawaiian volcano kilauea erupted again recently.
- Kilauea volcano is **active shield volcano (erupts magma of low viscosity and hence less steep)** located on the Hawaiian island..
- Hawaii, USA is a **group of 8 volcanic islands in the central Pacific Ocean** stretching in a crescent from Kure Island in west to Hawaii in east.
  - Volcanoes **make up 51% of Hawaii Island landmass**.

5.11.15. STANDARDS AND LABELING PROGRAM (SLP) OF BUREAU OF ENERGY EFFICIENCY (BEE)

- **Ceiling fans have come under the ambit of mandatory star labelling** of Bureau of Energy Efficiency (BEE).
- Standards and Labeling Program **was launched in 2006**, under Energy Conservation Act, 2001.
- Under it, **a Star Rating was introduced on appliances for visual representation** of appliance's efficiency, i.e.:
  - **Lowest energy consumption appliances having highest star** and highest energy consumption having the least star.
  - **It is mandatory for several appliances** including Frost Free and Direct Cool Refrigerator, LED Lamps, Room AC (Variable and Fixed speed), Color TV, Refrigerators, TFL, Stationary Storage Type Electric Water Heater etc.



5.11.16. VIRTUAL POWER PLANTS (VPPS)

- Companies including **GM, Ford, Google would work together to establish standards** for scaling up use of VPPs.
- VPP is a **network of decentralized power generating units that pool together thousands of energy resources** like electric vehicles (EVs) or electric heaters.
    - VPPs **use advanced software to react to electricity shortages** with techniques like **switching households' batteries from charge to discharge mode** or prompting electricity-using devices to back off their consumption.
- VPPs will enable grid planners to **better manage growing electricity demand** and make **sure grid stays reliable even in extreme weather challenges** and aging infrastructure.

5.11.17. DISASTER MANAGEMENT PLAN (DMP) FOR POWER SECTOR

- **Central Electricity Authority** released disaster management plan (DMP) for power sector.
- DMP provides a **framework to utilities** in power sector **to evolve a proactive and integrated approach** to strengthen **disaster mitigation, preparedness, emergency response, and recovery** efforts.
    - Growth of power sector is **directly correlated with economic growth** of the country and **any disruption** due to disaster **creates severe hardship** to human beings.
- Under **Section 37** of **Disaster Management (DM) Act, 2005** every **Ministry/ Department** of Government of India shall prepare a **DMP.**
    - **DMP is also consistent with Sendai Framework** for Disaster Risk Reduction (DRR), **COP21** and **PM's Ten Point Agenda** for DRR.

- **Key features of DMP**
    - **A four-tier structure at Central, Regional, State and Local Unit Levels**, with intervention and response depending on severity of disaster /calamity.
    - **Risk assessment of power infrastructure**, i.e., electric power generation stations, transmission distribution etc. to evolve methods for finding quantitative risk involved.
    - While **uncertainty caused by climate change** is unavoidable, electric utilities **can manage risks by considering different climate scenarios and potential impacts** on their assets.
    - **Use of social media** for emergencies and disasters on an organizational level **to disseminate information as well as for emergency communications** and issuing warnings etc.

5.11.18. GLOBAL OVERTURNING CIRCULATION (GOC)

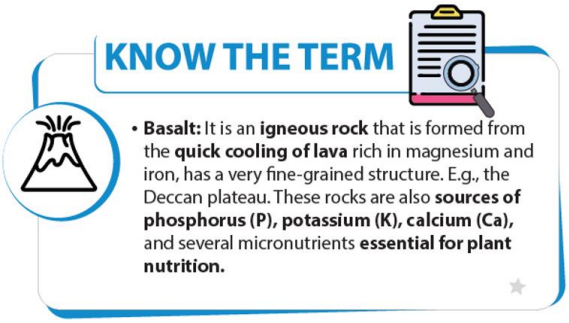
- GOC refers to **equatorward transport of cold, deep waters** and **poleward transport of warm, near-surface waters**.
    - It is **responsible for transport of carbon and heat** among ocean basins and between ocean and atmosphere.
- GOC is a **system of two connected overturning cells:**
    - **Upper cell** is linked to **formation of North Atlantic Deep Water** (NADW) and its shallower **return flow to form Atlantic Meridional Overturning Circulation** (AMOC).
    - **Lower cell** (referred as Southern Ocean Meridional Overturning Circulation) is associated with **formation of Antarctic Bottom Water** (AABW) and its **return flow as Pacific Deep Water** (PDW).
- Studies have indicated that **tectonically driven changes in ocean gateways** such as **closure of Central American Seaway** (CAS), since late Miocene period, **had impacted GOC.**
    - CAS is a **body of water** that once **separated North America from South America.**
- **Now,** National Centre for Polar and Ocean Research **reconstructed Deep Water Circulation record of Indian Ocean** and provided evidence in **support of theory that closure of CAS** led to evolution of **modern form of GOC.**
    - **Indian Ocean does not have any major deep-water formations** of its own. It acts only as **a host for both GOC components.**

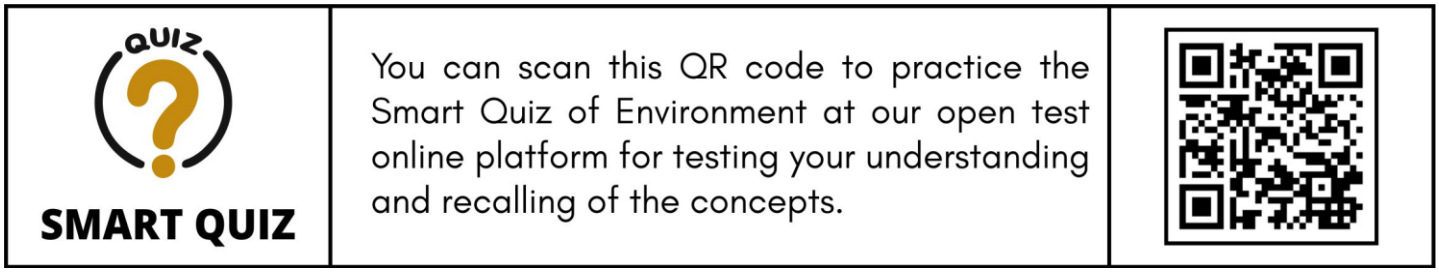
5.11.19. NEW PLATEAU TYPE DISCOVERED FROM MAHARASHTRA

- A rare **low-altitude basalt plateau** has been discovered **in Thane region** in Western Ghats (a **global biodiversity hotspot** and **UNESCO World Heritage site** in India).
    - This is the **fourth type of plateau to be identified in the region**; previous three are laterites at high and low altitudes and basalt at high altitudes.
    - **76 species of plants and shrubs** from 24 different families **have been found.**
- Plateaus are **dominant landscapes in Western Ghats**. They are **classified as a type of rocky outcrop.**
- Rocky outcrops are **geological features that protrude above the surface** of surrounding land.
    - They are **formed by weathering that happens at different rates**, causing the less weathered rock to remain exposed.

- They are **found on all continents**, in **most climate zones** and **vegetation types.**

- **Significance of rocky outcrops**
  - **Support high levels of species diversity** and endemism.
  - They have **seasonal water availability**, limited soil and nutrients, making them **ideal to study effects of climate change on species survival.**
  - They provide **critical breeding sites for many top order mammalian and avian predators**; **nesting sites** for colonial species such as seabirds, bats and swifts.





6. SOCIAL ISSUES

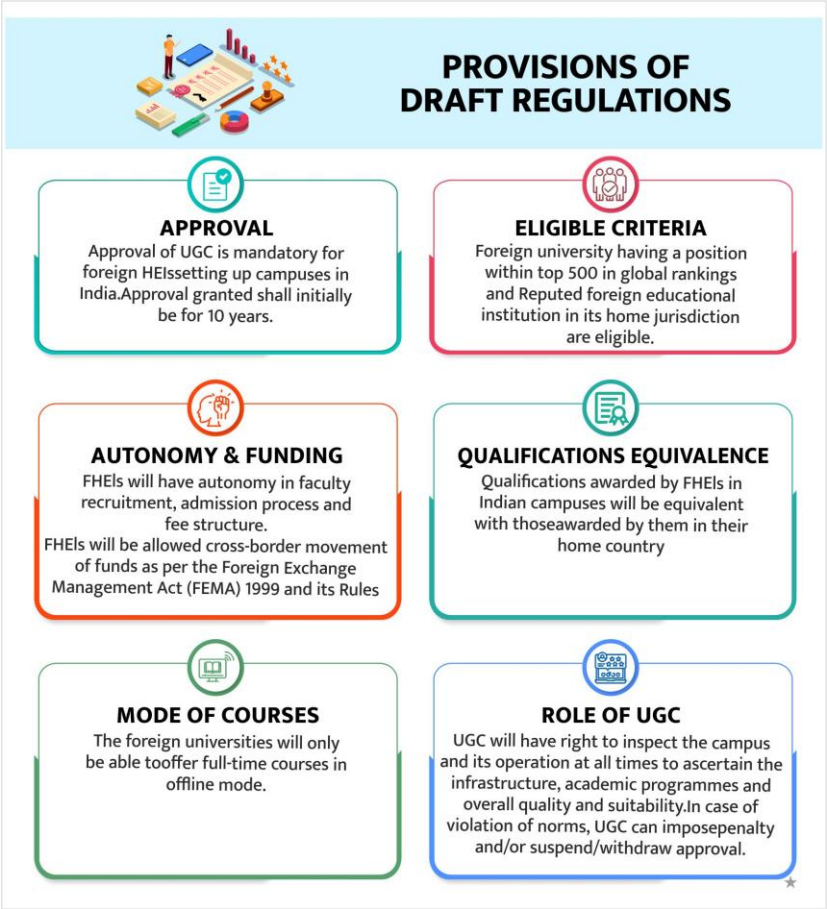
6.1. FOREIGN HIGHER EDUCATIONAL INSTITUTIONS (FHEIS) IN INDIA

Why in news?

Recently, **University Grants Commission (UGC) released draft regulations** for establishment of foreign universities in India.

More on news

- In line with **National Education Policy (NEP) 2020,** the University Grants Commission (UGC) has released draft **UGC (Setting up and Operation of Campuses of Foreign Higher Educational Institutions in India) Regulations, 2023**.
- These regulations will **regulate the entry and operations of Foreign Universities/Institutions in India** to conduct higher educational programmes and award degrees, diplomas, and certificates in all disciplines.



India's current interaction with the global education ecosystem

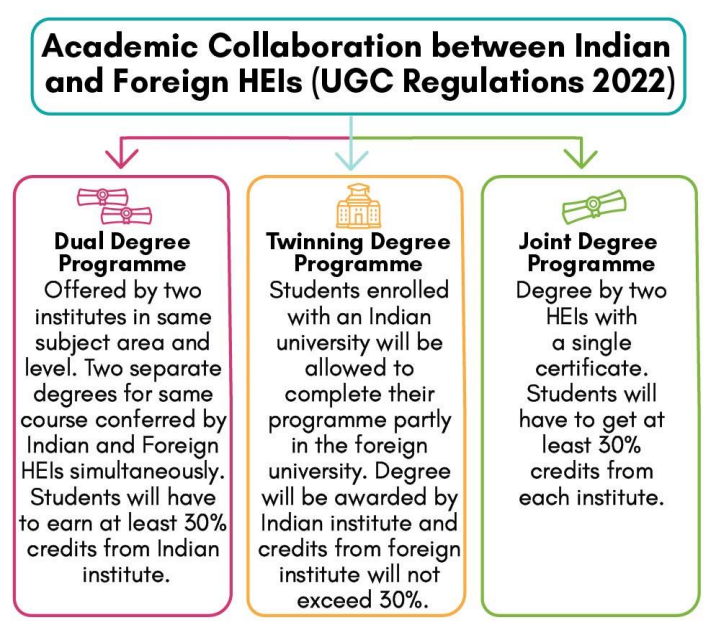
From India to the World

- **Indian students studying abroad:** According to Ministry of Education (MoE), **over 6.5 lakh Indian students went abroad in 2022** to pursue higher education.
  - Most Indian students **preferred Canada, the USA and UK** to pursue degree courses.

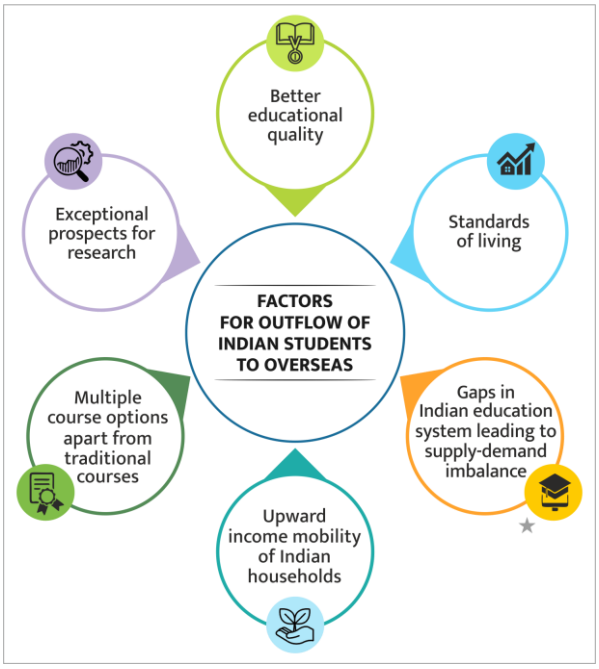
From the World to India

- **Brand India**: India is promoting **overseas operations of IITs** with the brand name **"India International Institute of Technology".**
- **Study in India (SII):** It is a flagship project of MoE to encourage **international students to study in premier Indian institutes**.

Collaboration



Significance of FHEIs in India



- **Increased access to quality education:** NEP 2020 has a target of 50% Gross Enrolment Ratio (GER) in higher education by 2030 from present level of 27%. Foreign HEIs will help in filling this gap.
- **Control of brain drain:** FHEIs in India would help limit brain drain by providing Indian students the opportunities to study and research in India itself.
- **Reduction in foreign exchange outflow:** Nearly ₹5 billion was lost in foreign exchange through students studying abroad in FY 2021-2022.
    - The requirement for FHEIs to establish campuses in India with adequate physical infrastructure, will result in curbing this outflow.
- **Research opportunities:** Stimulation to R&D in India and faculty to faculty research collaboration among various universities.
- **Improvement in Indian HEIs:** Element of competition in higher education sector will prompt improvement in quality and global standing of Indian institutions.
    - **Only 8 Indian universities made it to top 400 in the QS World University Rankings** 2022.
- **India as a hub for higher education:** India will attract students from different parts of the world, boosting India's soft power, apart from monetary benefits in form of inflow of foreign exchange.
- **Establishment of associated ecosystem:** Arrival of international students will give rise to associated industries such as rental housing, restaurants, part-time job opportunities, gig economy etc.
    - **Industry-academia linkage will significantly strengthen** due to strong emphasis on such partnerships in best ranking FHEIs.

Concerns from FHEIs

- **Commodification of higher education:** The entry of foreign universities may lead to a cultural shift towards a profit making ideology. Thus, valuing education solely from the perspective of return on investment.
- **High cost of learning leading to exclusion of vulnerable sections:** In the absence of reservation and quota-based scholarships in FHEIs, those seeking quota benefits, will be confined to state-funded universities.
    - Students with better financial resources will afford to have quality education in FHEIs and have higher employability while disadvantaged students will lack in this regard.
- **Competition for human and other resources:** FHEIs would compete with Indian HEIs for teachers, researchers, technicians and other resources like land. In the short term, this could create an issue of scarcity in some Indian HEIs.
- **Language barriers:** FHEIs will impart education only in English, driving up prospects for English education. This will be a pushback for language-inclusive higher education.
- **Repatriation of profits** earned from India to their home countries is a concern. As presently, FHEIs consider India as a market for sourcing students.
- **Western influences:** There are dangers of attempts from western countries to shape India's education sector in line with their interests or values, provoking erosion of cultural and linguistic diversity.

Way Forward

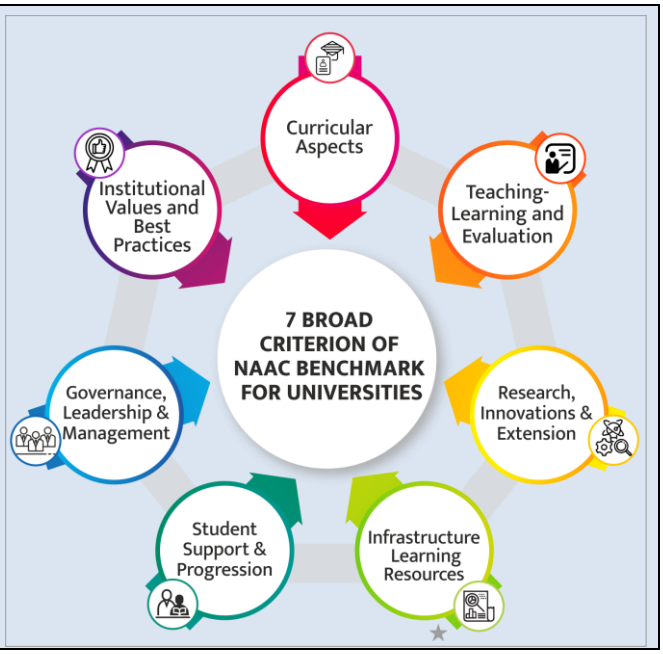
- **Creating collaborative structure between Indian Universities and FHEIs:** This would ensure that rather than competing, they complement each other vis-à-vis research, industry engagement or academic competitions etc.
    - Collaboration can increase cross-cultural, multi-disciplinary learning, and expansion of international reputation of Indian institutes.
- **Collaboration among Indian Institutions:** Several Indian institutions can establish a network of collaboration among themselves for effective resource management, better research possibilities, financial prowess etc.
    - Such collaboration can be seen in other countries such as Ivy League in USA, Russell Group in UK, C9 League in China etc.

- **International accreditation for Indian HEIs:** Top notch Indian institutions can diversify themselves by obtaining international accreditation to boost their international reputation.
- **Government support to vulnerable sections:** To reduce socio-economic inequalities, Government can provide scholarships to students from backward classes and marginalized sections for studying in Indian campuses of FHEIs.
- **Streamlining the regulatory ecosystem for involvement of FHEIs:** There is a need to evolve regulatory mechanisms with respect to academics, landholding, taxation, and faculty recruitments. It should also provide level playing field for Indian HEIs.
    - Proposed **Higher Education Commission of India (HECI)** can be granted statutory responsibilities for determining standards and uniform guidelines on Indian and Foreign HEIs.
    - **NAAC's benchmark** for assessing universities can be extended to those FHEIs which are setting up campuses in India.

Related News

NAAC releases new benchmark to access varsities, autonomous college

- National Assessment and Accreditation Council (NAAC) released the **benchmarks** it has set for universities and autonomous colleges.
    - NAAC was **established in 1994** as an autonomous institution of the **University Grants Commission (UGC),** with its Headquarters in Bengaluru, Karnataka.
    - The mandate of NAAC is to make **quality assurance** as an integral part of the functioning of Higher Education Institutions (HEIs).
- HEIs have been grouped under **three categories** namely, Universities, Autonomous Colleges and Affiliated/Constituent Colleges.



To know more about Higher Education, please refer to our following Weekly Focus Document.

Higher Education in India: The Cornerstone of our Future

Throughout history, universities have brought a lot of benefits to the individuals as well as the society in general. In the 21st century, as new discoveries keep appearing coupled with constant technological innovation, higher education has never been more beneficial to the individual and the society. But as several recent studies have revealed the overall state of Indian higher education is dismal and therefore poses a severe constraint on the supply of qualified manpower. The document digs deep into this issue and suggests ways and means to implement the fundamental principles, vision and goals of NEP 2020 so as to improve the quality and relevance of higher education in India.

6.2. NATIONAL DIGITAL UNIVERSITY (NDU)

Why in news?

Framework of National Digital University (NDU), as envisioned under the **National Education Policy, 2020** was revealed.

What is NDU and its framework?

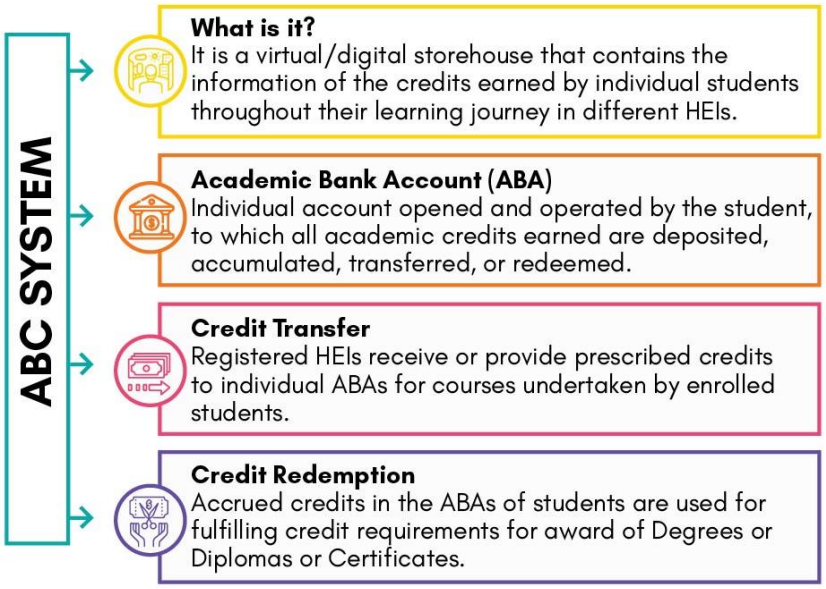
NDU is a university designed to bring together various higher educational institutions (HEIs) for providing online higher educational courses.

Following is the **framework for NDU:**

Samarth Portal

- Sponsored by Ministry of Education, Project Samarth under the **National Mission on Education through Information and Communication Technology**, NMEICT-II (now NMEICT-III) scheme in 2019.
- It integrates technology and **allows HEIs to deploy a digital framework** for planning, management, delivery, and monitoring of education services in a seamless manner.

- **Online Courses:** The university will offer **exclusively online courses** from its partner institutes (both private and public universities).
- **Functioning Model:** NDU will function under a **hub-and-spoke model**. The courses will be made accessible to students from the single platform - **Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) portal**.
  - IT and administrative services will be provided through the government's **Samarth portal**.
- **Courses type:** The students can opt for **certificate, diploma, or degree courses**.
  - **Autonomy to design curriculum**: Students will have the liberty to sign up for multiple courses form different HEIs and design their own curriculum.
  - **Credit based university degree**: Courses will hold a certain number of credits, and students will be eligible for a degree from a particular institute on accumulating 50% of the credits.
  - **NDU degree**: If a student earns credits from multiple institutions and crosses the credit threshold, the degree awarded will be by NDU.



- **Number of seats:** There will be an **unlimited number of seats** for every course, solving the problem of limited number of seats in higher education institutes.
- **ABC system:** NDU will use a standardised **Academic Bank of Credits (ABC) system,** established by the University Grants Commission (UGC) to facilitate academic mobility.

Significance of NDU

- **Fulfilment of skilling needs:** Constant **need of skill upgrades** in a rapidly developing and dynamic industry landscape.
  - The 2015 Report on National Policy on Skill Development and Entrepreneurship had estimated that **only 4.7% of the total workforce in India had undergone formal skill training.**
- **Increases access to higher education: It solves the problem of limited access to seats** within the higher education ecosystem.
- **Completion of education:** Flexibility in completing higher education due to **multiple entry and exit options.**
  - Presently, there is a **gap in enrolment and completion of education** in digital mode. For instance, less than 4% of enrolled students in SWAYAM courses completed their courses.
- **Increase in employability:** It will allow school pass-outs and working professionals to **pursue multi-disciplinary careers** fulfilling modern industrial demand for enhanced professional growth.
  - Presently, **only 45.9% of college graduates are considered employable** (2021 India Skills Report).
- **Significant for social sector:** NDU can be utilized also for **healthcare and welfare initiatives** such as skilling and training of ASHA workers, enhancing digital literacy and financial literacy of vulnerable sections.

Challenges with NDU

- **Concerns on credibility of courses:** There are concerns regarding the credibility and usefulness of the programme as course curriculum can be freely designed by the students.
  - **Ambiguity on whether industry recognizes equivalence** between traditional degree programs and digital degree programs or not.
- **Difficulties in standardised evaluation:** Concerns have been raised regarding modes of standardised evaluation and how it will be carried out for a large number of students and different course combinations.
- **Potential compromise in quality of education:** Concept of unlimited number of seats has raised concerns regarding dilution of quality of education.
- **Lack of practical skills development:** Educators are also concerned about the lack of experiences and skills in the absence of environment of a physical institution, such as interactions with fellow students and professors and acquiring skills like academic discussion and critical reasoning.
  - **Practical learning and training are not feasible** for various courses in the online learning mode.
- **Digital divide:** Gaps in digital infrastructure in rural areas and among vulnerable sections of society is a major challenge which will pose accessibility problems.

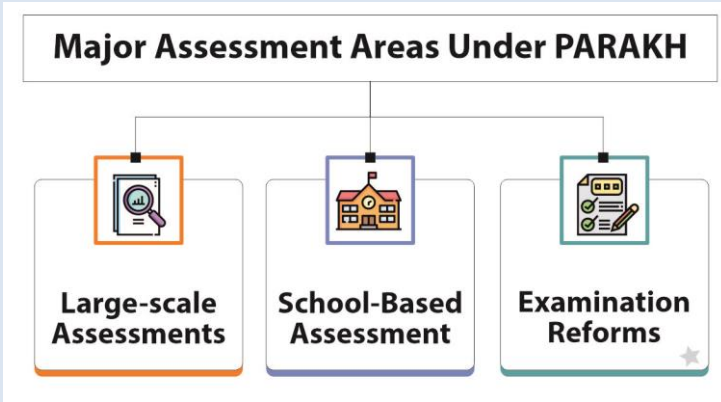
Way Forward

- **Strengthening Industry-academia linkages in the NDU** can help in preparing curated multi-disciplinary courses for ensuring higher employability and skill recognition. This would **directly attest the value and usefulness of the courses.**
- **Peer learning communities** can be formed, which promote feedback and competition among students. This will enhance their learning experience and development of practical skills.
- **Digital India Initiative** can be effectively leveraged for filling digital infrastructure gaps to enable accessibility and affordability among vulnerable sections and rural areas.
  - Governments can **provide financial assistance and technological assistance** (such as access to laptops, mobile devices) to vulnerable sections of society.
- **Collaborations with edtech platforms** can be promoted in early stages to incorporate emerging technologies and promoting **personalized learnings** through Artificial Intelligence (AI), Machine Learning (ML) and Virtual Reality (VR)/Augmented Reality (AR).
- **Communication network and engagement mechanisms** between students and counsellors/faculties/professionals should be established. This would improve course completion rates and emulate the offline mode to a greater degree.

Related News

PARAKH

- The National Council for Education Research and Training (NCERT) has **notified India's first national assessment regulator, PARAKH** (Performance Assessment, Review and Analysis of Knowledge for Holistic Development).
  - The Educational Testing Service (ETS), which administers international tests like TOEFL, TOEIC, GRE, and PISA among others in more than 180 countries, has won the bid to set up PARAKH.
- PARAKH has been launched **as part of the implementation of the National Education Policy (NEP)-2020**.
- PARAKH **will work on**
  - Setting norms, **standards and guidelines for student assessment and**
  - **Evaluation for all recognised school boards** in the country.



- PARAKH will be responsible for **conducting large-scale assessments**, including National Achievement Survey (NAS), State Achievement Survey (SAS) and monitor achievement of learning outcomes in the country.
- PARAKH will closely work with the state directorates of education, state education boards and international organizations working in assessment and evaluation.

6.3. EDUCATIONAL REPORTS IN NEWS

6.3.1. ALL INDIA SURVEY ON HIGHER EDUCATION (AISHE) 2020-2021

- Ministry of Education (MoE) released All India Survey on Higher Education (AISHE) 2020-2021.
- AISHE has been conducted since 2011 by MoE **covering all higher educational institutions located in country**.
  - It collects **detailed information on different educational parameters.**
  - For the first time, Survey **collected data using an entirely online data collection platform through Web Data Capture Format (DCF).**
  - **DCF** was developed by **Department of Higher Education** through the **National Informatics Centre (NIC)**
- **Key Findings:**

Specification	**2020-21**	**Trend w.r.t 2014-15**
Total student enrollment: UP, Maharashtra, TN, MP, Karnataka and Rajasthan are top 6 States in terms of number of student enrolled.	4.14 crore	21% **rise**
Female enrolment	2.01 crore	28% **rise**
Percentage of female enrolment to total enrolment	49%	**4% rise**
Gross Enrolment Ratio (GER): Percentage of students belonging to eligible age group (18-23 years) enrolled in Higher Education	27.3	**3-point rise**
Gender Parity Index (GPI): Ratio of female GER to male GER	**Increased** from 1 in 2017-18 **to 1.05**	----
• **Institutes of National Importance (INIs)** • **Enrolment in INIs**	• **149** • **61 %**	• **Almost doubled (75)** • **Increased**
Female per 100 male faculty	**75**	**Increased (63)**

6.3.2. ANNUAL STATUS OF EDUCATION REPORT (ASER) 2022

- Annual Status of Education Report (ASER) 2022 was released by NGO Pratham.
- ASER (first conducted in 2005) is an **annual, citizen-led household survey** to understand whether **children in rural India are enrolled** in school and **whether they are learning**.
  - Whereas, **National Achievement Survey (NAS)** is **undertaken by Ministry of Education**. It provides structured feedback on student learning levels at District, State, and national levels.
- ASER 2022 is **first field-based 'basic' nationwide ASER** since 2018.
  - In ASER 2022, around 7 lakh children in **age group of 3 to 16 years** were surveyed to record their **schooling status** and **assess their basic reading and arithmetic skills.**

Key Findings

Parameters	Trend
Overall enrollment in age group 6-14	98.4% ↑
Proportion of 15-16-year-old girls not enrolled	7.9% ↓
Children taking Paid private tuition classes from 1st to 7th standard	30.5% ↑
Reading ability of class 3	20.5% ↓
Arithmetic ability (subtraction) of class 3	25.9% ↓
Average teacher attendance	87.1% ↑
Schools with drinking water available	76% ↑
Schools with useable girls' toilets	68.4% ↑

6.4. DRAFT NATIONAL MEDICAL COMMISSION (AMENDMENT) BILL-2022

Why in News?

The Ministry of Health and Family Welfare (MoHFW) has **proposed a draft amendment, to the existing National Medical Commission Act-2019.**

Key Highlights of the draft bill

- It proposes for setting up a Fifth Autonomous Board, namely **Board of Examinations in Medical Sciences**, under National Medical Commission.

- It proposes to bring the accreditation of the diploma, diploma and postgraduate fellowship, and super-specialty fellowships institutes under the proposed **Board of Examinations in Medical Sciences.**
- It aims to alter the jurisdiction of **cases filed, by Medical Colleges or institutions**, in matter related to National Medical Commission and bring them all **under jurisdiction of Delhi High Court (HC) only**.
- **In cases of medical negligence** a new provision for patients and their relatives is provided by making the **Ethics and Medical Registration Board or the National Medical Commission as the appellate body** against decisions of the State medical council.

Reasons for the introduction of amendments

- **To Streamline the process:** The proposed board is to replace the existing **National Board of Examinations in Medical Sciences**, which currently conducts the **NEET-PG and the Exit tests.**
- **To reduce the delays:** Citing the delays in past PG admission cycles, various Resident Doctors Associations have requested to set up a separate body to reduce the delays.
- **To facilitate introduction of NeXT:** The proposed Board will facilitate the common exit test, which is for all the final year students and for the students from abroad, to get them registered in the National register of licensed practitioners.
- **To ease the litigation burden:** By altering the jurisdiction limits to Delhi HC, the Commission which is marred with litigations from various parts of the country can function better.
- **To appeal Over State Councils decisions:** The act provides for an appeal mechanism by making **Ethics and Medical Registration Board or the National Medical Commission** as the appellate body, over the decisions of the State Medical Councils in cases of medical negligence.

Issues in NMC and its functions

- **Subjugates Federalism:** The **nomination of important functionaries of the NMC rests exclusively with the Centre** and this reduces the role of states in the commission.
- **Lack of Co-ordination between various bodies**: The exam is currently a multi-headed process, which makes it cumbersome for students who reattempt the entrance exams.
    - **The National Testing Agency conducts NEET-UG, National Board of Examination conducts NEET-PG and Screening tests,** while the **admission counselling is carried out by Medical Counselling Committee** which is independent of NMC.
- **Lack of autonomy:** Some critics argue that the NMC lacks the necessary autonomy to function effectively, as it is beholden to the Ministry of Health and Family Welfare, which has the power to interfere with its decisions.
- **Accreditation standards:** The accreditation process **emphasizes on documentation of infrastructure and human resources** (head counting) rather **than measuring the quality of medical education** and outcomes.
- **Issues in Medical Education:**
    - **Low Doctor to Patient Ratio:** The Current Doctor to Patient ration is at 1:1511 (as compared to WHO's recommendation of 1:1000).
    - **Privatization of medical colleges:** Private medical colleges account for most of the newly created medical seats thereby making medical education a distant dream for marginalized sections of the society.

Way forward

- **Creating a separate autonomous body for Medical admission Counselling:** A separate **'Board of Counsellors or Counselling'** should be constituted under NMC, for medical admission process and eliminate confusion which arose recently, leading to wastage of medical seats.
- **Voluntary and grade based NEXT exam:** If at all, an exit exam was to be given, it should have been **made voluntary and grade-based**. So, if a MBBS practitioner wants grade-accredited, he/she could have taken it, as is the precedent in some countries.
- **Creating an SOP for medical students from abroad:** The Government should **make provisions easier for students from abroad**, to return back and serve for the country and also provide a backup plan, if in case they couldn't complete the course in the foreign country, as happened to the students from Ukraine.
- **Timely audits of the institutes and professionals:** Regular Inspection should be done with doctors' designated bodies and practitioners to keep it corruption free.
- **Increasing stakeholder's involvement:** In order to ensure fair decision making all stakeholders should be given the importance and also the role of state should be increased.
- **Other suggestions for medical education in India**
    - To re-evaluate and **create an efficient accreditation system**;

- To **promote an equal distribution of resources**,
- To **redesign curricula with stricter implementation and improved assessment methodologies**.

National Medical Commission (NMC)

- Constituted in 2020 by the **National Medical Commission Act, 2019.**
- **Succeeded the then Medical Council of India** which was constituted under the Indian Medical Council Act, 1956.

CHAIRPERSON

SECRETARY

MEDICAL ADVISORY COUNCIL

- **Platform through which the States and Union territories** may put forth their views and concerns before the Commission.
- To advise the Commission, and to co- ordinate maintenance of standards in medical education, training and research.
- To advise the Commission on **measures to enhance equitable access to medical education.**

Under Graduate Medical Education Board

- Determine standards and sets the curriculum of medical education at undergraduate level.
- Frame guidelines for setting up of medical institutions for imparting undergraduate courses.

Post Graduate Medical Education Board

- Determine the standards of medical education.
- To frame guidelines for setting up of medical institutions.
- To determine standards and norms for infrastructure, faculty.

Medical Assesment and Rating Board

- To determine assess and rate the medical institutions for their compliance with the set standards.
- To Grant permission for establishment of a new medical institution, any postgraduate course or number of seats.
- To issue warning, impose penalty, reduce intake.

Ethics and Medical Registration Board

- To Maintain National Registers of all licensed medical practitioners.
- To regulate professional conduct and promote medical ethics.
- To exercise appellate jurisdiction with respect to the actions taken by a State Medical Council.

Existing structure

Board of Examinations in Medical Sciences

- To conduct National Exit Test (NeXT)
- To accredit institutes for conducting diploma, diploma and fellowship post graduate.
- To grant degree and diploma for Diplomate and Fellowship qualifications;

Proposed Structure

FUNCTIONS OF NMC

To **frame policies** for regulating medical institutions and medical professionals;

To **assess the requirements** of healthcare related human resources and infrastructure;

To **exercise appellate jurisdiction** with respect to the decisions of the Autonomous Boards;

To **ensure compliance** by the State Medical Councils of the regulations made under the Act;

To **frame guidelines** for determination of fees for up to 50% of the seats in private medical institutions and deemed universities which are regulated under the Act.

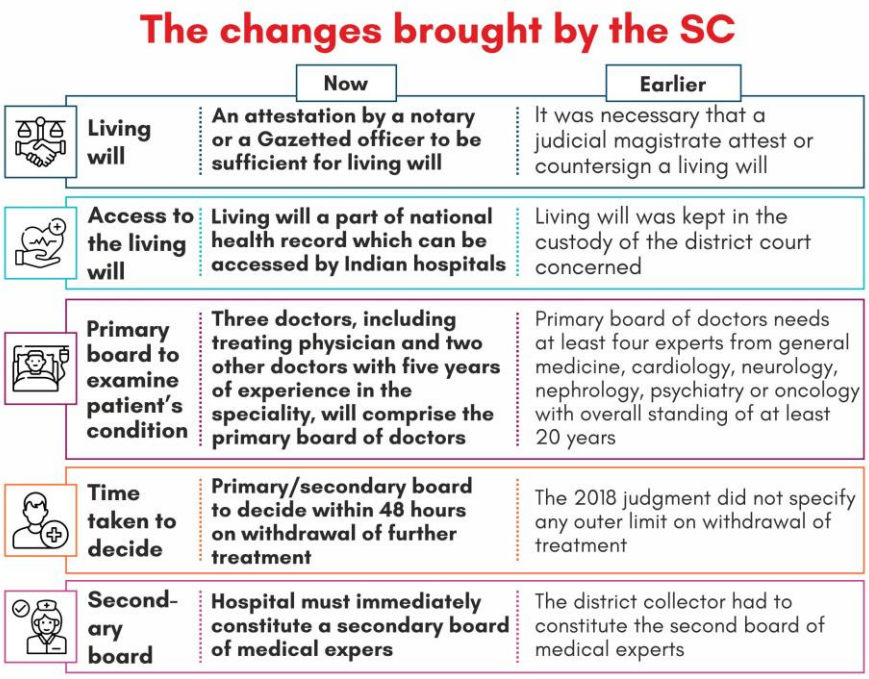
6.5. EUTHANASIA

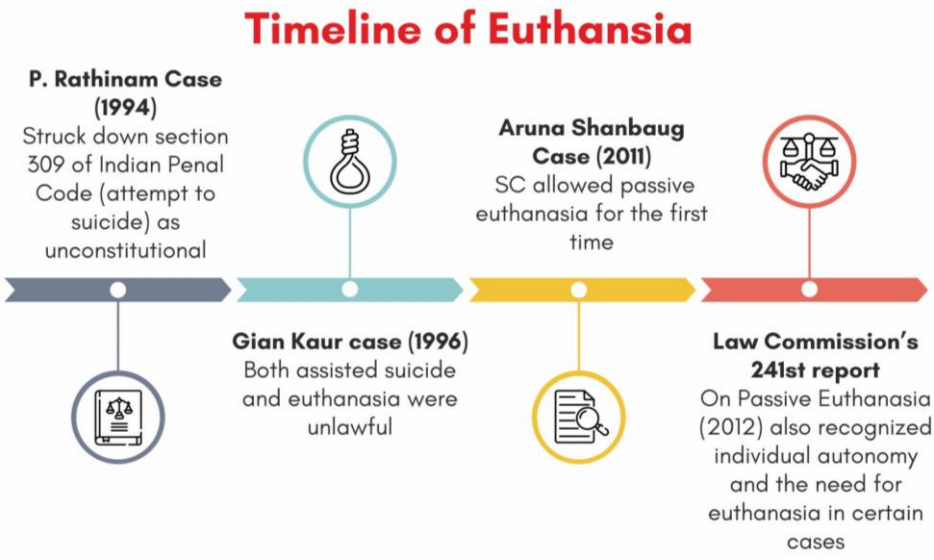
Why in News?

Recently, Supreme Court simplified its rules on passive euthanasia.

Background

- **In a 2018 judgement** (Common Cause v Union of India), **SC had recognised the right to die with dignity** as an inextricable facet of the right to live with dignity under Article 21 of the Constitution
  - It had, accordingly, **upheld the legal validity of passive euthanasia.**
- It was argued that the **directions had become virtually unenforceable** owing to the complexity of the procedure prescribed by SC.
  - Thus, **necessary amendments were sought** to make the judgement 'workable'.
- Accordingly, **several changes were introduced** by the five-judge bench **in the guidelines laid down in 2018** with respect to the execution and enforcement of advance care directives, as well as the procedure for passive euthanasia.





Other aspects of the Judgment	Now	Earlier
Surrogate decision-maker	**More than one guardian or close relative** can be named. Before a final opinion **consent of all the nominees** will be taken.	**Only one guardian or close relative** was to be named. Before a final opinion, the **consent of the guardian or close relative** would also be taken.
Role of district court registry	This **requirement has been deleted.**	Judicial magistrate to forward a copy of the document to the registry of the jurisdictional district court, which would have to retain the document in the original format.
Ascertaining authenticity	**Treating physician to execute** the advance directive after ascertaining its authenticity **with reference to the digital records** of the executor, or from the **custodian of the document appointed by the local government body**.	**Treating physician had to execute** the advance directive after **ascertaining its authenticity from the judicial magistrate.**
Appeal before High Court	If permission to withdraw treatment was denied a **writ petition at the jurisdictional High Court** can be filed.	If permission to withdraw treatment was denied a **writ petition at the jurisdictional High Court** can be filed.

Arguments in favour of Euthanasia

- **Right to self-determination:** Human beings should be free to make decisions about their own lives. This is especially true if they are facing a terminal illness from which there is no chance of recovery.
- **Caregivers burden:** Majority of such petitions are filed by the sufferers or family members or their caretakers. Caregiver's burden cuts across various domains such as financial, emotional, time etc.
- **Right to die with dignity:** Allowing people to 'die with dignity' is kinder than forcing them to continue their lives with suffering.
- **Encouraging organ transplantation:** It provides an opportunity to advocate for organ donation. This in turn will help many patients with organ failure waiting for transplantation.
- **Can be regulated:** If it's legal then the process can be controlled, including proper safeguards and checks to ensure this is really what the person wants.

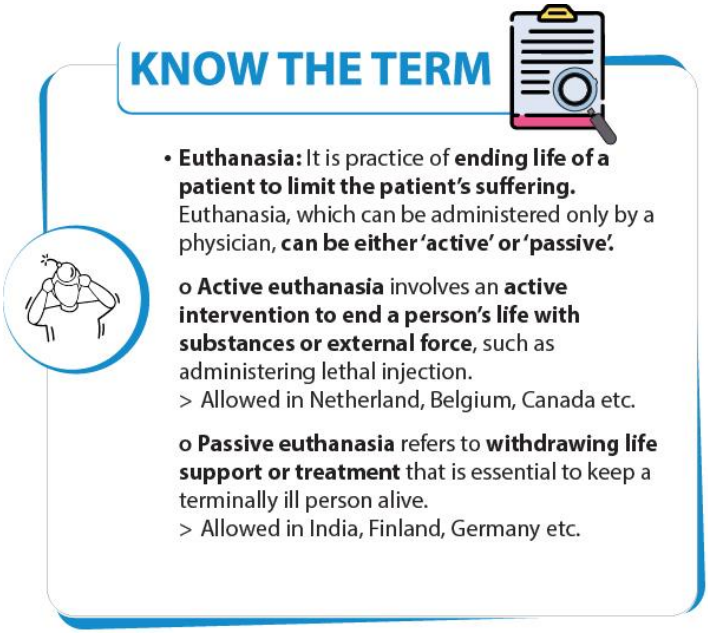
Arguments against Euthanasia

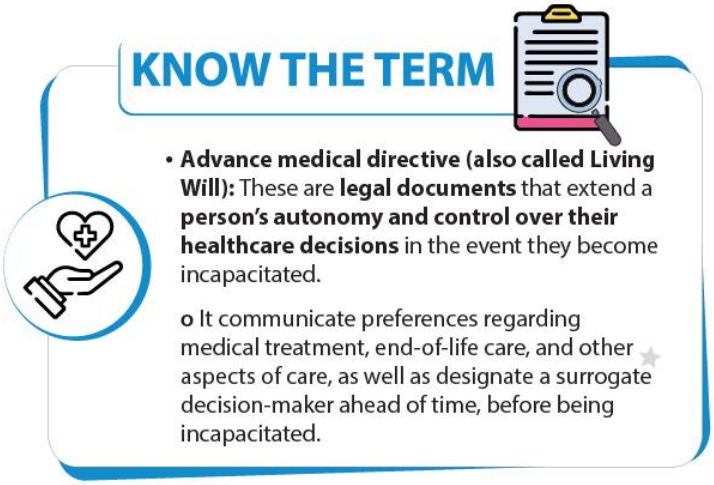
- **Eliminating the invalid:** Euthanasia opposers argue that if we embrace 'the right to death with dignity', people with incurable and debilitating illnesses will be disposed from our civilised society.
- **Malafide intention:** There is a possibility of misusing euthanasia by family members or relatives for inheriting the property of the patient.
- **Devaluation of life:** Euthanasia weakens society's respect for the sanctity of life as it leaves open various dangerous loopholes for exploitation, leading to the disposability of human existence.
- **Commercialisation of health care:** If euthanasia is legalised, then commercial health sector will serve death sentence to many disabled and elderly citizens of India for meagre amount of money.
- **Against Hippocratic oath:** To ask that doctors, nurses or any other health professional carry out euthanasia or assist in a suicide would be a violation of fundamental medical ethics, namely the Hippocratic oath.

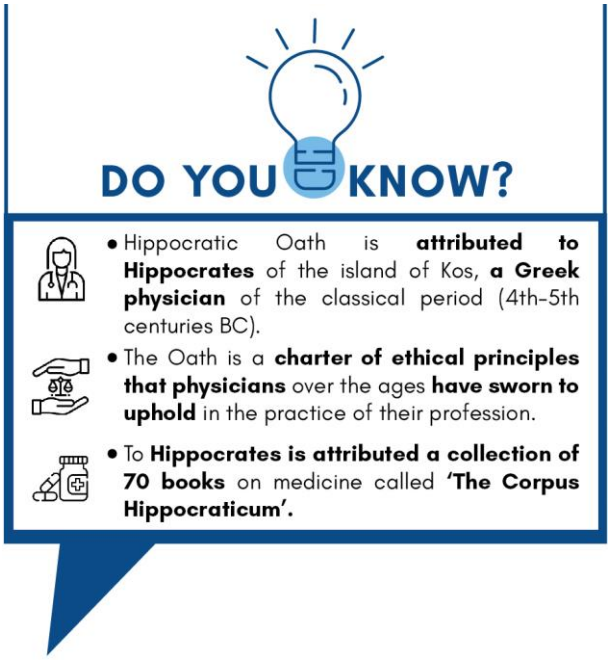
Conclusion

Euthanasia is something that cannot be always just looked at logically; there are many emotions involved as well. Each individual also has the right to make their own decisions when it comes to something of such a severe nature.

However, there is a need to focus on the procedures that helps the patient to get rid of the pain and not only does it stop the suffering of the person but also ends the suffering of the patient's family members. Also, proper attention should also be given to stop possible misuse of any such arrangement.







6.6. NEWS IN SHORTS

6.6.1. WORLD SOCIAL REPORT 2023: LEAVING NO ONE BEHIND IN AN AGEING WORLD

- It is a **flagship publication of Department of Economic and Social Affairs** of United Nations Secretariat**.**
  - Report **builds on framework of Madrid International Plan of Action on Ageing** (MIPAA) and **explores social and economic opportunities and challenges** that population ageing presents.
    - ✓ MIPAA was **adopted at second World Assembly on Ageing** in April 2002.
- **Key Findings**
  - Number of persons aged 65 years or older is **expected to double over next three decades surpassing** 1.6 billion in 2050 (accounting for **more than 16% of global population**).
  - **Northern Africa and Western Asia and sub-Saharan Africa** are expected to experience **fastest growth.**
  - **Poverty levels** at older ages are typically **higher among women**, due to lower levels of participation in formal labour markets, shorter working careers and lower wages compared to men.
- **Recommendations**
  - **Promote labour market participation**, increase **productivity**, uphold **good health and prevent poverty** throughout people's lifetimes.
  - **Policies to reduce inequality** and promote **economic security at older ages** in a **fiscally sustainable manner.**
- **Other global initiatives for older people**
  - **UN Principles for Older Persons**, 1991
  - UN designated **2021- 2030 as Decade of Healthy Ageing**

QUIZ
SMART QUIZ
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.

7. SCIENCE AND TECHNOLOGY

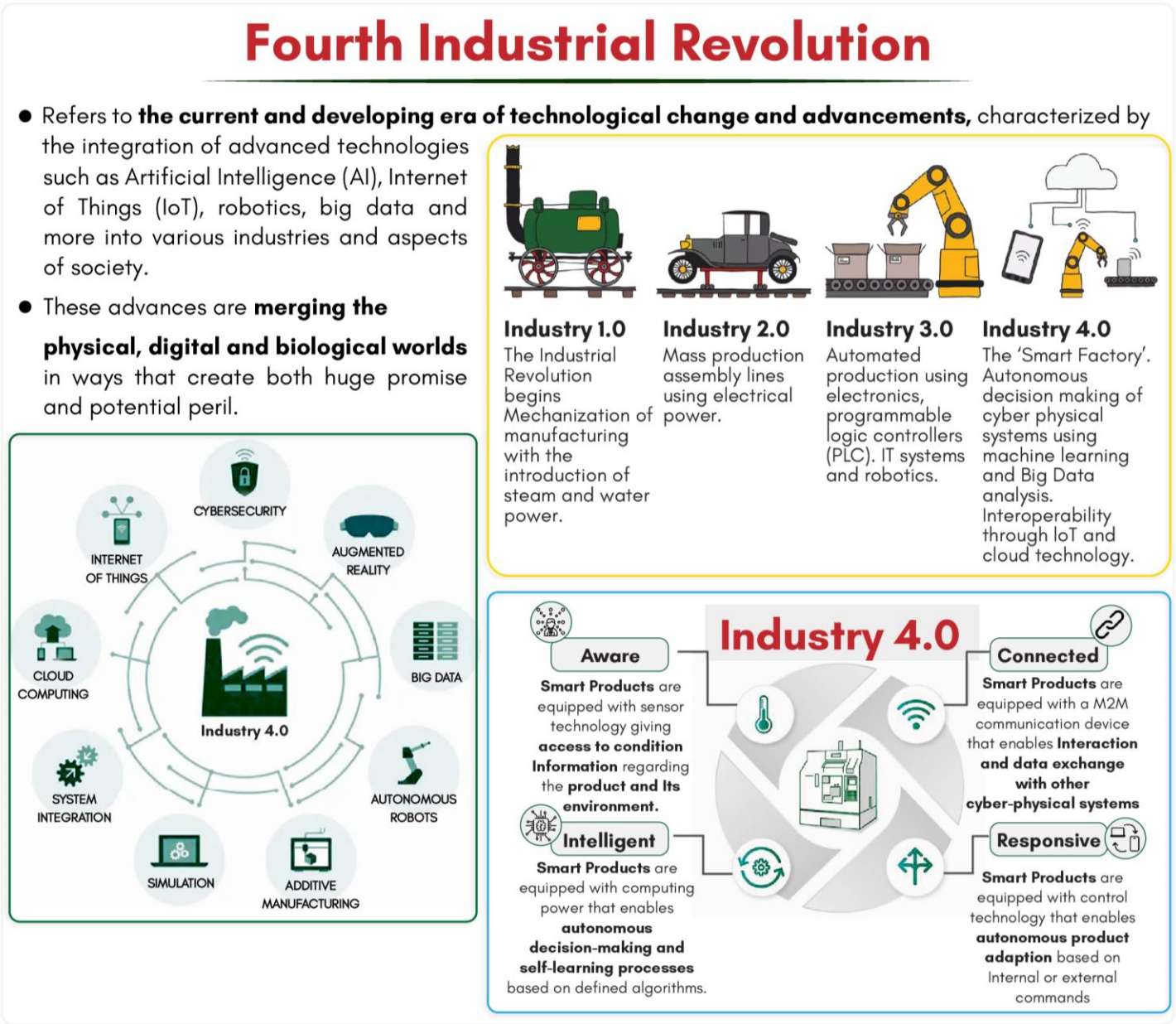
7.1. FOURTH INDUSTRIAL REVOLUTION- INDUSTRY 4.0

Why in News?

India's first Fourth Industrial Revolution Centre on healthcare, life sciences will be set up in Hyderabad.

More about the news

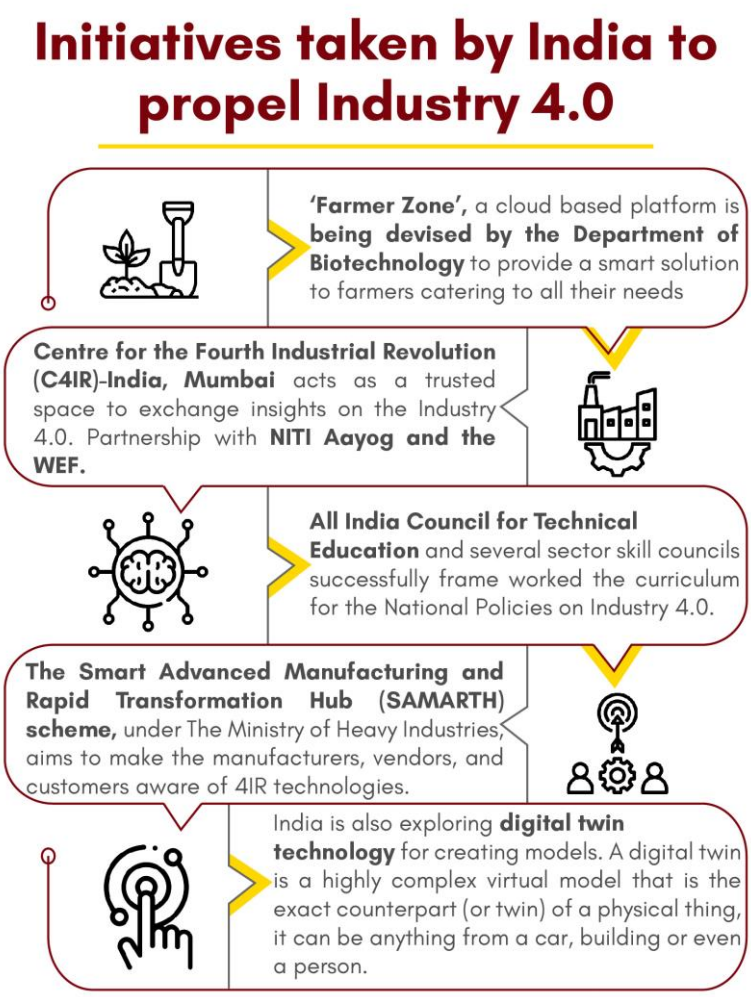
- The proposed centre is to be set up in **collaboration with the World Economic Forum (WEF)**.
- It will be established as an **autonomous, non-profit organisation** focusing on policy and governance for healthcare and life sciences.
- It will be **18th centre to join the WEF's Fourth Industrial Revolution Network**.



Need for India to adopt to Industry 4.0

- **To fuel the development:** In order to provide the impetus for the next surge in growth after the 1990 reforms, earlier adoption to the industry 4.0 is required.

- **To harness the potential of Big Data:** India's huge repository of Big Data, collected via Aadhaar, passport, PDS, voter card etc. can be used for creating better policies for the people.
- **To ease the Governance:** The Governance machinery marred with delays and red-tapism could be put to better use, for the billion plus population with the advent of new age technologies into the system.
- **To provide better employment opportunities:** By implementing a Industry 4.0 specific policy, more new jobs can be created in future with better income and improved standards.
- **To create an Indian global giant:** Adapting to Industry 4.0 earlier can provide us that opportunity to create a Tech-Global giant in Indian soil, like Alphabet, Tesla, Meta.
- **To achieve our Geo-political goals:** For India to have a better say in the world arena and geopolitics, it should also turn into a net exporter of technology to the world.



Benefits of Shifting to Industry 4.0

- **Optimizes decision making and Good Governance:** The data mining and the big data **can give varied permutations and combinations of possible outcomes** and will aid in better decision making in public policy.
- **Improves Flexibility and Customization of the products:** The **productivity and the product portfolio of the industries can be improved**, by adopting the Cyber Physical System frameworks and make them more flexible in operation.
- **Increases productivity and efficiency:** The **usage of real-time data and various check points will reduce the errors** in a process and also aid in increasing the productivity and efficiency of the particular industry.
- **Enhances communication and collaboration:** For Companies that function across different divisions and locations**,** the real time communication established by Industry 4.0 can enhance teamwork and produce optimized results.
- **Increases entrepreneurship:** Like Tech based start-ups in the area of education, e-commerce/m-commerce, financial services, ITES etc.

Constrains in moving to Industry 4.0

- **Fear of job loss:** While the majority of Indian workforce is in the informal sector, without social security. There is a fear that machines and technology will take jobs across many sectors.
- **High Capital Cost:** The creation of a new integrated Cyber Physical system, replacing the existing processes will lead to high capital cost during the establishment.
- **Lack of skilled workforce**: The introduction of the Automation and Cyber Physical System in the manufacturing process needs a better skilled workforce who understands the complexity of the process.
- **Issues of Cyber and Private Data Security:** The new technologies might handle huge quantities of private and sensitive data, there is a need to improve the existing Cyber Security and Privacy data laws to safeguard consumers.
- **Fuels Inequality:** The advancement of technology can lead to income inequality in an economy, as people from the specific sector may experience wage growth and others at the risk of losing jobs.
- **Interoperability:** Ensuring interoperability will be a challenge, as Industry 4.0 requires seamless integration between different systems and devices especially when working with multiple vendors and technologies.

Way forward

- **Enhancing regulatory framework:** Governments need **to review and update the regulatory frameworks** to ensure that they are appropriate for the digital age, while also protecting the rights and privacy of individuals.
- **Developing ethical guidelines**: Organizations **need to develop ethical guidelines to ensure that the technologies are used for the benefit of the society** and the Government should have a monitoring mechanism for the same.
- **Promoting digital literacy:** Promoting digital literacy, **particularly among those who may not have access to technology** or who may be at risk of being left behind, should be propagated by the Government.
- **Emphasizing on cyber security:** With the increasing use of technology, the risk of cyber-attacks is also increases. Organizations need to invest in robust cyber security measures to protect their data and intellectual property.
- **Investing in up skilling and reskilling:** Adapting to the **Industry 4.0 needs reskilling /up skilling of the existing work force** for the new age jobs and both Government and the industries should focus on bridging this gap.

7.2. GENERATIVE ARTIFICIAL INTELLIGENCE (AI)

Why in News?

Recently, Tech companies around the world are harnessing Generative AI for various use cases.

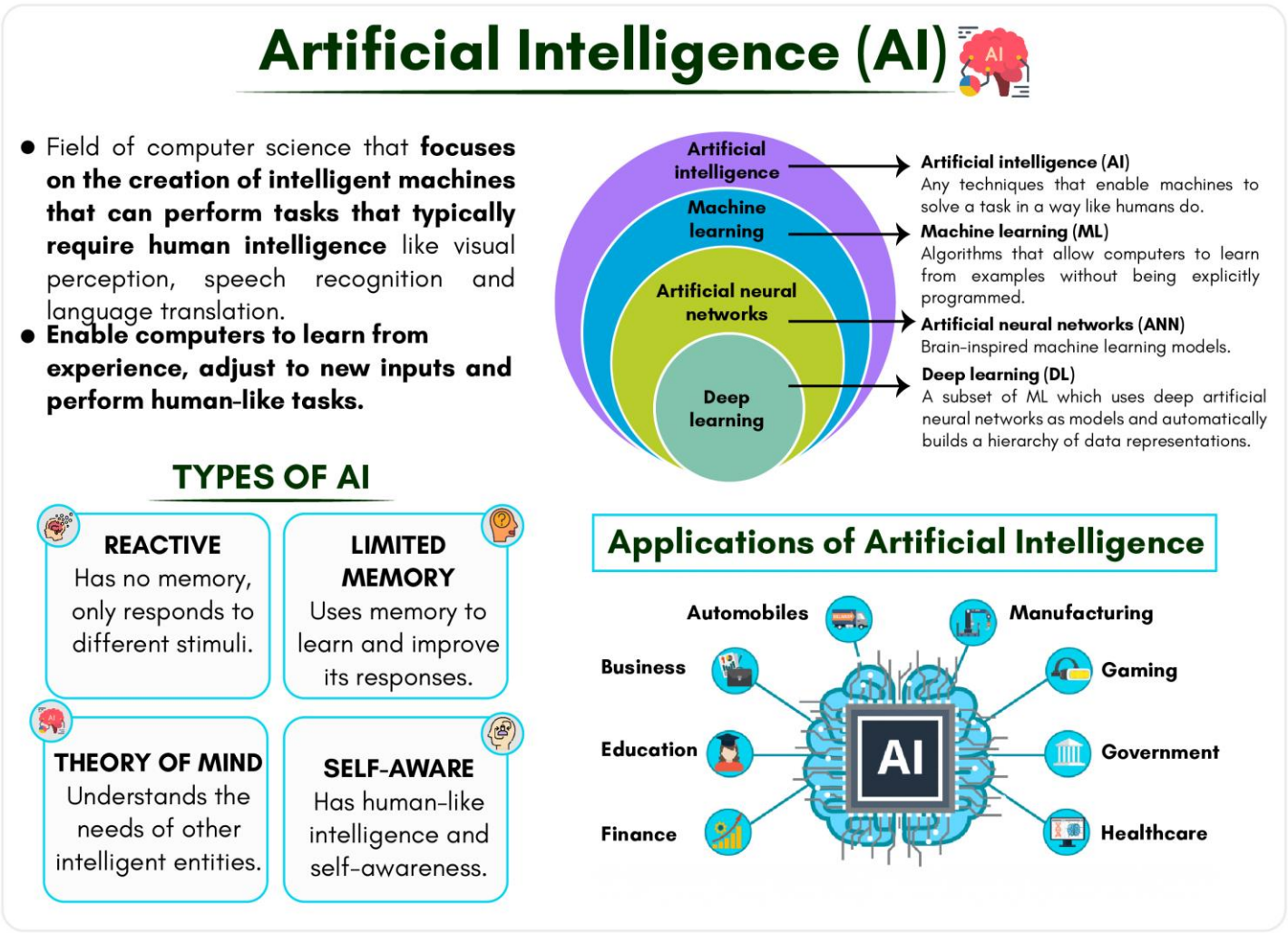
More about News

- There has been increasing popularity of generative AI programs, such as OpenAI's ChatGPT, Google's BARD AI, DALL-E, Codex, GPT-3 etc.
- These programs are a **conversational AI language based on deep learning model built on the transformer architecture**.
    - It **uses a deep neural network** and is trained on corpus of text data from the internet, allowing it to generate human-like text and to perform various tasks like question answering, and conversation.
    - It represents a significant advancement in the field of **natural language processing** and has the potential to revolutionize the way humans interact with computers.
- There are speculations that **these platforms can replace Google search and more so humans in the future.**

Generative artificial intelligence (AI)

- It describes **algorithms that can be used to create new content like audio, code, images, text, simulations, and videos.**
- It is **achieved by training machine learning models on large amounts of data using neural networks** and then using these models to generate new, synthetic data that is similar to the already existing data.
- Until 2022, **the purpose of existing AI was to analyse data, spot anomalies, detect fraud and perhaps,** make recommendations such as movies to watch or best holiday destinations.
    - Earlier AI models did this by analysing large chunks of data that it consumed.
    - However, with **generative AI, users can witness brand new content being created from scratch.**

- Presently, there are **3 prominent frameworks or models of generative AI** like **Generative adversarial networks (GANs), Transformer-Based Models (TBMs)** and **Variational AutoEncoders (VAEs)**.



Concerns in adopting AI

- **Adverse impact on Society:** The machine learning is indifferent to what is right or wrong in a society, **it works on the already existing set of data's** and there are chances of the existing biases, to be transferred to the AI as well.
- **Lack of Accountability:** There is **no clear distinction of who is to be held accountable**, in case there was an unfavourable outcome as a result of generative AI.
- **Ethical Concerns**: **Number of ethical issues related to equality, justice, and human dignity might pop up** and the responsibility of creators for the impact of their models should be ensured**.**
- **Lack of Transparency:** It will be **difficult to explain on how a decision was made by the AI**, as they can be designed to act favourable to particular set and **this can undermine the trust in the technology**.
- **Infringes Intellectual Property rights:** Many artists have claimed that their artworks were indiscriminately recreated by the AI, to create its own image rendering. Such acts infringe the Intellectual property rights and will curtail creativity.
- **Privacy Issues:** The use of AI can raise concerns about the collection, storage, and use of personal data, as the **potential for misuse of this collected information is high.**

Way forward

- **Establish ethical principles and guidelines:** The Government should **focus on establishing ethical principles and guidelines for the development and deployment of AI**, to ensure it is used responsibly and in accordance with social values and norms.

- **Regulate AI use:** Instead of open access **a regulated usage could be introduced and critical information data set can be isolated from the advent of AI** to ensure that the technology is used in a responsible manner.
- **Better collaboration and cooperation:** Technologies cannot survive in isolation, **for a technology to be successful it should collaborate with different stakeholders**, including government, industry, academia, and civil society.
- **Invest in research and development:** Increase in the Investment of research and development of AI technologies that prioritize social and ethical considerations of the AI usage.
- **Promote diversity and inclusiveness:** AI systems **should be designed and trained on diverse and inclusive data to minimize biasness** and ensure equitable outcomes.
- **Foster public trust and understanding:** Improve the engagement with the public and educate them about AI to foster trust and understanding of the technology, that it would be beneficial for them.

Conclusion

AI is a rapidly advancing field with **the potential to transform many aspects of our lives and economies**. However, to fully realize the benefits of AI and avoid negative consequences, **it is important to approach its development and deployment with caution and consideration for ethical and social implications**.

7.3. NATIONAL GREEN HYDROGEN MISSION

Why in News?

The Union Cabinet has recently approved the **National Green Hydrogen Mission.**

More about the Mission

- It is proposed **to make India a global champion in Green Hydrogen production**, thereby reducing the dependence on Fossil fuels gradually.
- The **Ministry of New and Renewable Energy (MNRE) is to formulate the guidelines** for the implementation of the mission.

Sub-Components of the Mission

- **Strategic Interventions for Green Hydrogen Transition Programme (SIGHT)**: Under it incentives are to be provided for **targeting domestic manufacturing of electrolysers** and for **production of Green Hydrogen**.
- **Pilot projects:** The Mission will **support pilot projects in emerging end-use sectors,** supporting large scale production or utilization of Hydrogen will be identified and developed as **Green Hydrogen Hubs.**
- **Strategic Hydrogen Innovation Partnership (SHIP):** Public-Private Partnership framework for **R&D will be facilitated under the Mission,** which will be goal-oriented and suitably scaled up for global norms.
- **Skill Development:** A skill development programme, for the workforce in the sector will also be undertaken under the Mission.

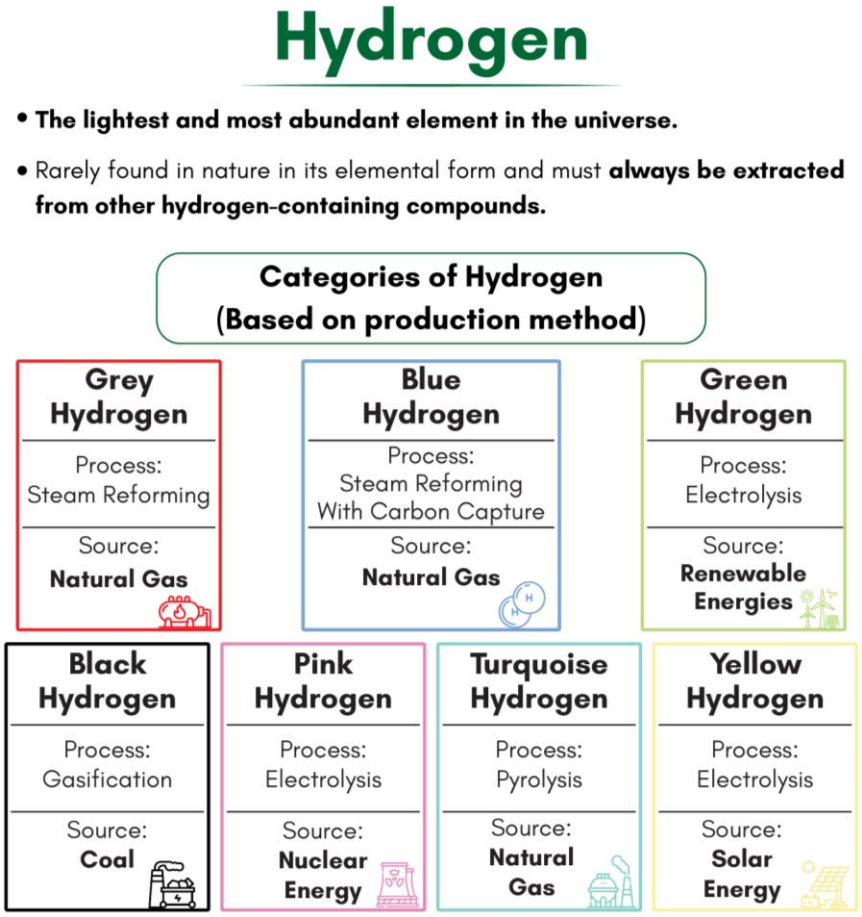
Advantages of Hydrogen over traditional Fuels

- **High Calorific Value:** Hydrogen **has almost 2.5 times the energy per tonne compared as to natural gas**, shifting to Hydrogen thereby reduces natural gas imports and also help in achieving our climate targets.

- **Alternative to Coke and Coal in Steel production:** Hydrogen can potentially **replace the coal and coke in iron and steel production**, decarbonising this sector will also have significant impact on India's climate goals.
- **Fuel Cells in Electric Vehicles:** Hydrogen can be **effectively used as a fuel for heavy duty vehicles** and the R&D is already at full pace in many automobile companies to achieve the feat
    - These vehicles **produce water vapour as it's by- product** and this will cut down the Green House Gas emission.
- **Refuelling at faster rate: Hydrogen run fuel cell vehicles can be refuelled at same pace as the petrol/diesel run vehicles**, which is an inherent advantage over electric vehicles.

Constraints in achieving the set Goals

- **Ambitious Target set: India has set an ambitious target of 60 -100 GW of Electrolyser Capacity**, which needs more amount of impetus from both Government and the Private players.
- **High Capital Cost:** The cost of the electrolyser technology and the capital for setting up a green hydrogen plant is too high.
- **High price of Green Hydrogen:** Current green hydrogen production costs range anywhere between ₹320 and ₹330 per kilogram in India, which is too high for many industries to utilise them at such a price.
- **Storage of Hydrogen:** Hydrogen is a **lightweight substance that is difficult to transport and store**. In order to store hydrogen, **it must be transformed into a liquid and kept at extremely low temperatures** or kept as a gas at high pressures.
- **Nascent Stage Technology:** The technology is still in its nascent stage and it discourages many private players from actively participating in its development.



Way forward

- **Infrastructure Creation:** Hydrogen storage and transportation infrastructure should be created in line with the mission implementation for better end use.
- **Impetus to MSME's:** Incentives should be announced at all scales, to help MSME's also to harness the benefits of the adaptation of the new fuel.
- **Better Coordination:** Coordination between various Ministries and the Departments should be streamlined, to fast track the mission process.

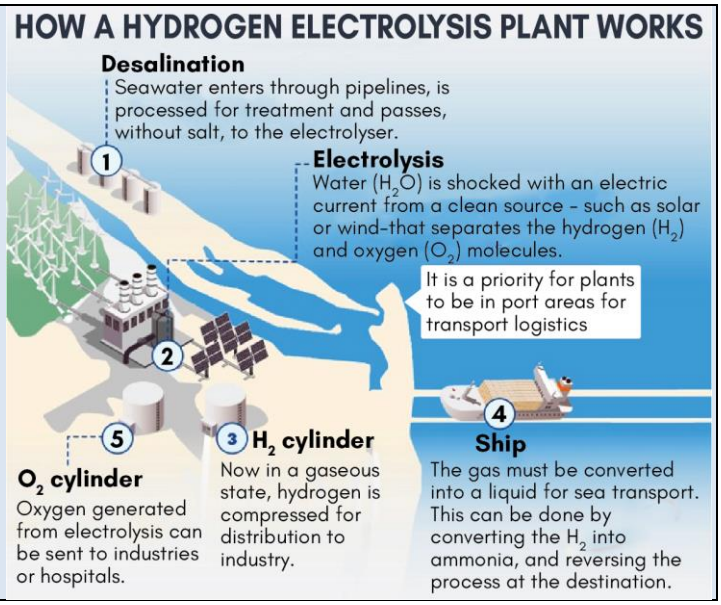
Electrolyser

- An electrolyser is a **device capable of splitting water molecules** into their constituent Oxygen (O2) and Hydrogen (H2) atoms.
- The splitting of the O2 and H2 atoms by **application of electrical energy is called electrolysis.**

Working

Types of Electrolysers

- Solid oxide electrolysis cell (SOEC)
- Alkaline electrolyser
- Proton exchange membrane (PEM) electrolyse



7.4. TRANSFAT

Why in News?

Recently, The World Health Organization (WHO) released a report titled Countdown to 2023: WHO report on global trans-fat elimination 2022.

About Partially Hydrogenated Oils (PHO)

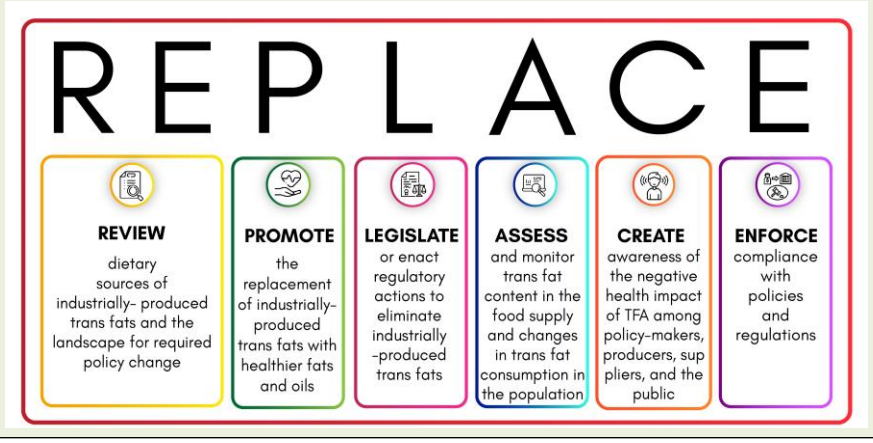
- Partially hydrogenated oils (PHO) are **solid at room temperature and prolong the shelf life of products.**
- They are **primarily used for deep frying** and as an ingredient in baked goods.
- PHOs were **first introduced into the food supply in the early 20th century** as a replacement for butter and lard.
- They are **not a natural part of the human diet and are fully replaceable**.

More in News

- This is fourth annual report which monitors global progress towards the 2023 target for global elimination of industrially produced trans-fatty acids (TFA).
- **Key highlight of the report**
  - **Mandatory TFA limits or bans** on partially hydrogenated oils (PHO) are **currently in effect for 3.4 billion people in 60 countries.**
    - ✓ Of these countries, 43 have best-practice policies in effect, covering 2.8 billion people around the world, or approximately 36% of the world's population.
  - In 2022, three countries – **India, Oman and Uruguay** – implemented best-practice TFA policies.
    - ✓ This **doubled the size of the population that is protected by best-practice TFA policies** to 2.8 billion people.
    - ✓ More than 99% of the increase is contributed by the population in India alone.
  - **Five billion people globally are exposed to harmful trans-fat**, increasing their heart disease and death risk.

Global Initiative

- **REPLACE initiative:** WHO has launched the REPLACE initiative, designed to support governments in ensuring elimination of industrially produced TFA from the food supply by 2023.
- **WHO Certification Programme for Trans Fat Elimination**: to recognize countries that have eliminated industrially produced TFA from their national food supplies.



About Transfat

- Trans fat, or trans-fatty acids, are unsaturated fatty acids that come from **either natural or industrial sources**.
  - **Naturally occurring trans-fat** come from ruminants (cows and sheep).
  - **Industrially produced trans-fat are formed in an industrial process** that adds hydrogen to vegetable oil converting the liquid into a solid, resulting in "partially hydrogenated" oil (PHO).
- The use of trans fats in the food industry has been popular because they are **inexpensive, have a longer shelf life, and can improve the texture and taste of foods.**
- Trans fats increase bad cholesterol, i.e., Low Density Lipoproteins (LDL) cholesterol and decrease High Density Lipoproteins (HDL) cholesterol, which can **increase the risk of heart attack or stroke**.
- International expert groups and public health authorities recommend **limiting consumption of trans fat (industrially produced and ruminant) to less than 1% of total energy intake**, which translates to less than 2.2 g/day for a 2,000-calorie diet.

Best-practice TFA policy
Legislative or regulatory measures that limit industrially produced TFA in foods. The two best-practice policies for TFA elimination are

- **Mandatory national limit of 2 g of industrially produced TFA** per 100 g of total fat in all foods.
- **Mandatory national ban on the production or use of PHO** as an ingredient in all foods.

Initiatives taken to eliminate industrially produced TFA

- **Regulatory measures:** Food Safety and Standards Authority of India (FSSAI) **has notified several crucial regulations to regulate transfat** in industrial products, encouraged edible oil industry and food business operators to eliminate transfat from their products.
  - FSSAI regulate the use of trans fats in the food industry.
- **Best-practice policy:** India became the first lower-middle-income country to implement a best-practice policy in 2022.
- **Mass media campaign**: FSSAI has launched a **mass media campaign "Heart Attack Rewind"** to **create awareness** about the harmful effects of trans fat.
- **Mandating Food Labeling:** The FSSAI has mandated the labeling of trans-fatty acids on packaged foods, making it easier for consumers to make informed choices about the foods they consume.

Way forward

- WHO recommends that countries take the following actions to eliminate TFA.
  - **Develop and implement best-practice policies** to set TFA limits or to ban PHO.
  - **Invest in monitoring and surveillance mechanisms**, such as laboratory capacity to measure TFA content in foods.

- Start the discussion on **healthy replacement oils and fats, and country-specific alternative techniques, and develop a replacement roadmap.**
- **Advocate for regional or subregional regulations** to expand the benefits of TFA policies.

- **Implement trans-fat bans:** FSSAI need to pursue local governments to improve surveillance, inspection of food premises, sampling of food products, regular training of officers, upgradation of food labs, etc.
- **Encourage restaurants to eliminate trans fats:** Several food manufacturers have voluntarily committed to reduce or eliminate trans-fats from their products. For example, McDonald's and KFC have both pledged to phase out the use of trans-fats in their fried foods.
- **Educate the public:** The public can be educated about the dangers of trans fats and encouraged to choose healthier alternatives.

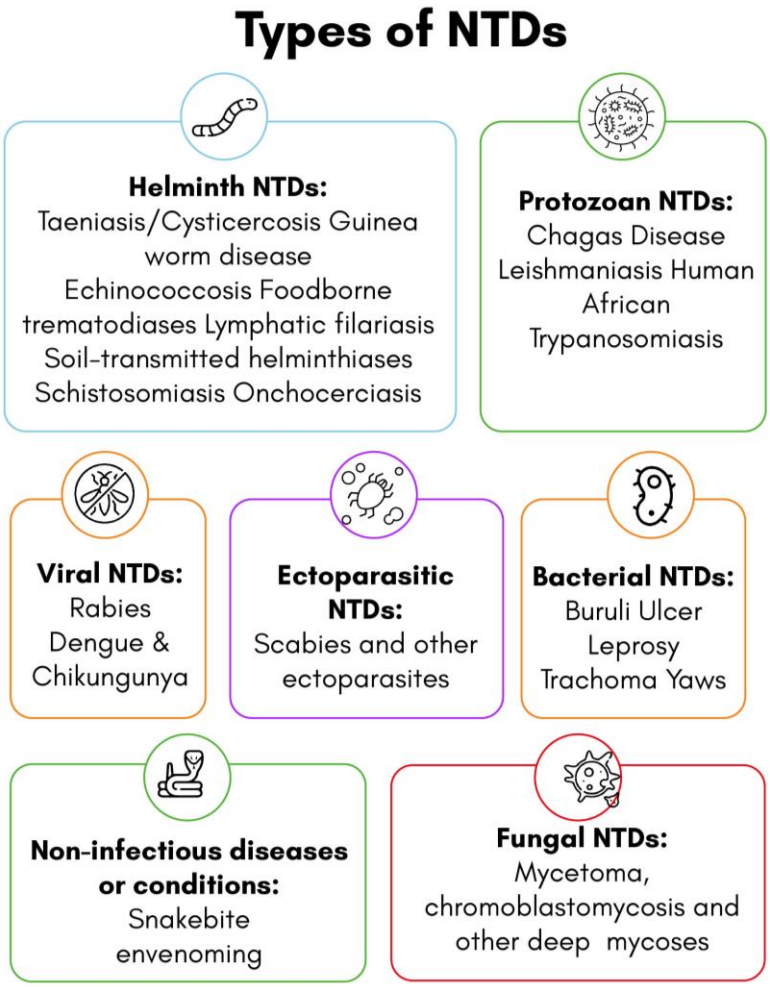
7.5. NEGLECTED TROPICAL DISEASES

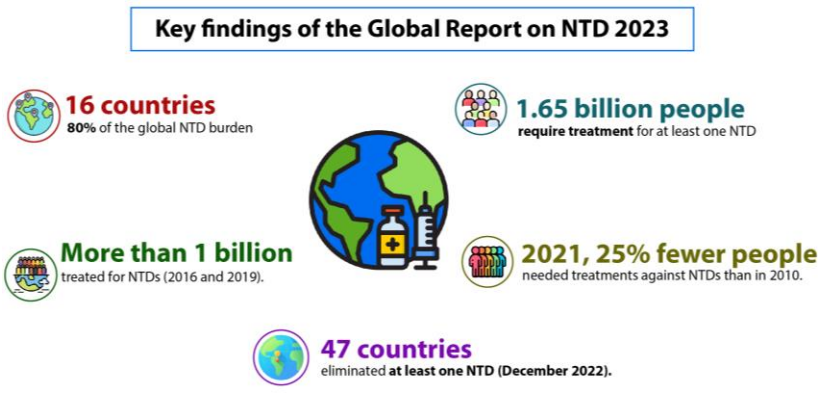
Why in News?

World Health Organization (WHO) released Global report on neglected tropical diseases 2023.

About Neglected tropical diseases (NTDs)

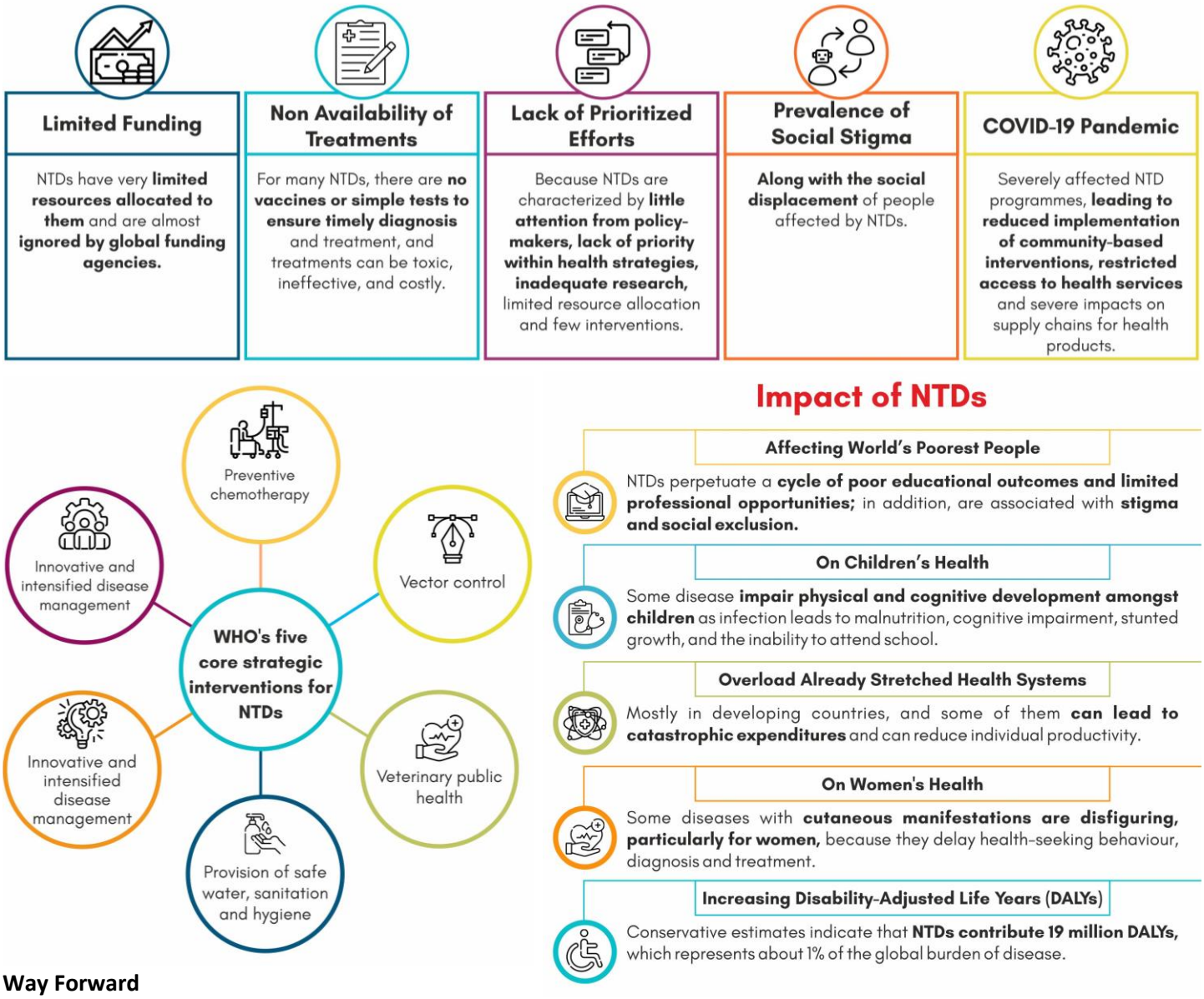
- NTDs are a **diverse group of 20 conditions mainly prevalent in tropical areas**, where they affect more than 1 billion people who live in impoverished communities.
  - They are 'neglected' because they are **almost absent from the global health agenda**.
- **NTDs are caused by a variety of pathogens** including viruses, bacteria, parasites, fungi, and toxins. Their epidemiology is complex and are **often related to environmental conditions.**
- **NTDs flourish mainly in rural areas**, in conflict zones and hard-to reach-regions. They thrive in areas **where access to clean water and sanitation is scarce** – worsened by climate change.
- NTDs **tend to affect regions without quality healthcare, leaving poor populations vulnerable** to these often-debilitating diseases and newly emerging threats.





India and NTDs

- **India has the world's largest absolute burden of at least 10 major NTDs**, including dengue, lymphatic filariasis, leprosy, visceral leishmaniasis or kala-azar and rabies.
  - **High-disease-burden NTDs** in India are **not evenly distributed**, but instead focused in areas of urban and rural poverty.
  - However, **India has already eliminated several NTDs,** including guinea worm, trachoma, and yaws.



Way Forward

- The report **recommends to**
  - Invest in **innovative operations and financing solutions** that foster integration and cross-sectoral collaboration.
  - Boost **global support for countries** with highest burdens.
  - Facilitate **country ownership and sustainability** of NTD programmes.
- **NTD interventions can be made more efficient by**:
  - **addressing all NTDs cohesively** through a whole-health-system approach.
  - **scaling up cross-cutting interventions** outside the health sector (education, nutrition, water, sanitation and hygiene (WASH), animal and environmental health).
  - **filling operational gaps**, for example, through the development of better medicines and better diagnostic tools.
- **Greater efforts and investments are required** to reverse delays caused by COVID-19, ensure that past gains are not lost, and to accelerate progress towards the 2030 road map target.
- **A steady flow of resources is required** to support NTD programmes worldwide within the wider framework of primary health care and health system strengthening.

WORLD HEALTH ORGANIZATION (WHO)

HQ Geneva, Switzerland.

About

- **Founded in 1948**, WHO is the **United Nations agency dedicated to global health** and safety.
- WHO's Constitution **came into force on 7 April 1948** – a date now **celebrated every year as World Health Day.**

Objectives

- WHO works globally to **promote health, expand universal health coverage** and **respond to emergencies.**
- WHO's **Thirteenth General Programme of Work 2019-2023** aims **to achieve the Triple Billion targets:**
  - **One billion more people** are benefiting from **universal health coverage.**
  - **One billion more people** are better protected from **health emergencies.**
  - **One billion more people** are enjoying **better health and well-being.**
- **WHO also responds to emergencies** including natural disasters, conflicts and displaced populations.

Membership

- **194** Member States.
- WHO **Member States are grouped into 6 regions**: WHO Africa, WHO Americas, WHO Eastern Mediterranean, WHO Europe, WHO South-East Asia, and WHO Western Pacific.

Other Key Information

- **World Health Assembly is the decision-making body** of WHO and is attended by delegations from all Member States.
- **Director-General is WHO's chief technical and administrative officer**. A Director-General can be re-appointed once.

Initiatives Taken

Global

- **WHO's first NTD road map (2012–2020)** delineated milestones and targets, the **new roadmap for 2021–2030** sets out key actions and programmatic shifts to drive progress towards a world free of NTDs by 2030.
- **World NTD Day observed on January 30** every year.
- **Adoption of the Abu Dhabi Declaration** on Eradication of Guinea Worm Disease
- **Adoption of the Kigali Declaration** on Neglected Tropical Diseases.
- **London Declaration** on NTDs

In India

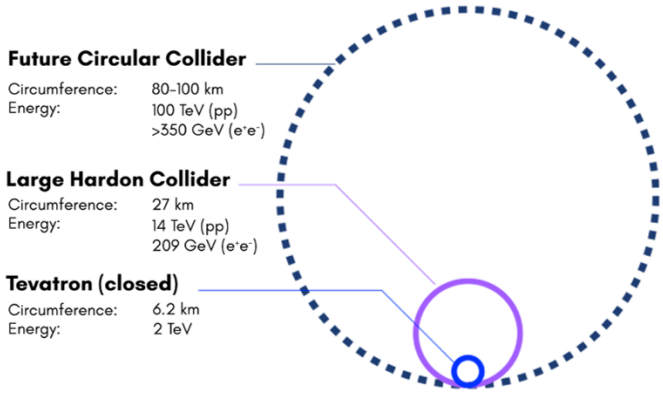
- **Accelerated Plan for Elimination of Lymphatic Filariasis (APELF)**
- **Bangladesh, India, and Nepal** jointly **established a regional alliance to eliminate kala-azar**, supported by WHO.
- **National Vector Borne Diseases Control Programme** for prevention and control of vector borne diseases namely Malaria, Japanese Encephalitis, Dengue, Chikungunya, Kala-azar and Lymphatic Filariasis.
- **Recently, Mass Drug Administration (MDA) was launched by** Union Ministry of Health and Family Welfare **to eliminate LF by 2027.**
- State and central governments have also **introduced wage compensation schemes for those suffering from Kala-Azar.**

7.6. NEWS IN SHORTS

7.6.1. LARGE HADRON COLLIDER

- Known for discovering '**god particle' in 2012**, **CERN** has **shortened running period of their Large Hadron Collider (LHC)** to reduce its energy intake.
  - Higgs boson or God particle is **fundamental force-carrying particle of Higgs field**, which is responsible for granting other particles their mass.
- LHC, first started in **2008**, is **world's largest** and **most powerful particle accelerator** ever built that pushes **protons or ions to near the speed of light**.
  - It consists of **27-kilometer ring of superconducting magnets** with several **accelerating structures** to boost the energy of particles.
  - LHC is used to **smash accelerated protons** or **lead ions** to measure **energies, directions** and **velocities** of these particles at **four particle detectors**- **ATLAS, CMS, ALICE** and **LHCb**.
  - **Purpose:** To find answers to open questions left in **Standard Model of Particle Physics** such as **origin of mass evidences of supersymmetry, dark matter, dark energy** etc.

- CERN has proposed to develop a **Future circular collider (FCC),** a successor to current LHC.
  - FCC is **next generation of higher performance particle colliders** planned to have a **100 km circumference** and reach **100 TeV (tera electron Volts) of collusion energy**.
- CERN, founded in 1954, is a **Geneva-based particle physics laboratory** that provide a unique range **of particle accelerator facilities that enable research** at forefront of human knowledge.
  - Currently, it has **23 member states**.
  - India is an **Associate Member State of CERN** along with others while **Japan, US, UNESCO** and **EU** hold **observer status**.



7.6.2. SMART PROGRAM

- **SMART (Scope for Mainstreaming Ayurveda Research in Teaching Professionals) program** has been launched by National Commission for Indian System of Medicine **(NCISM)** and Central Council for Research in Ayurvedic Sciences **(CCRAS) under Ministry of Ayush** (MoA).
  - It is aimed to **boost scientific research in priority healthcare research areas** like Iron Deficiency Anaemia, Obesity, etc. through Ayurveda colleges and hospitals.
  - It will **motivate teachers for taking up projects in designated areas of healthcare research** and create a large database.

About NCISM	About CCRAS
• Statutory body established **under MoA through NCISM Act, 2020** for regulating medical education. • Works to **improve access to quality and affordable medical education**, ensures **availability of adequate and high-quality medical professionals** of Indian System of Medicine in all parts of country etc.	• **Autonomous body** of MoA. • Apex body for **undertaking, coordinating, formulating, developing and promoting research on scientific lines in Ayurvedic Sciences**. • Its research activities include **Medicinal Plant Research** (Medico-Ethno Botanical Survey, Pharmacognosy and Tissue Culture), **Drug Standardization**, etc

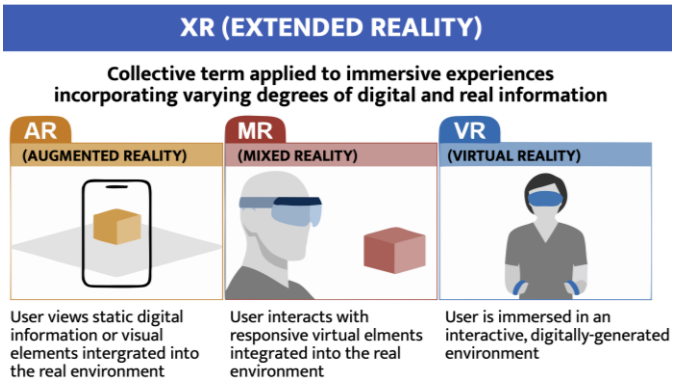
- **Initiatives to promote Ayurveda**
  - Central Sector Scheme for **Ayush Oushadhi Gunavatta evam Uttpadan Samvardhan Yojana** (AOGUSY).
  - **9th World Ayurveda Congress in Goa** (showcase efficacy and strength of AYUSH systems of medicine at Global level).

7.6.3. DIGITAL INDIA AWARDS (DIA)

- **President conferred the Digital India Awards**, 2022.
- DIA aims **to encourage and honour innovative digital solutions/ exemplary initiatives by various government entities** (startups also for 2022) at all levels.
  - DIA has been **instituted by Minister for Electronics & Information Technology**, under aegis of **National Portal of India.**
- **Winners this year includes:**
  - **e-NAM:** Pan-India electronic trading portal to create a unified national market for agricultural commodities.
  - **e-Vivechna App** (MP): To help in crime investigation.
  - **Mine Mitra (UP):** For online approval of Mining plan.
  - **DUARE SARKAR (WB):** For service delivery and welfare schemes at peoples' doorsteps.

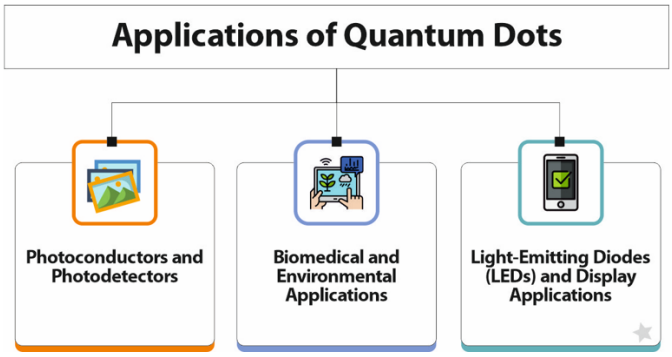
7.6.4. XR (EXTENDED REALITY) STARTUP PROGRAM

- **MeitY Startup Hub**, an initiative of Ministry of Electronics & Information Technology (MeitY), and Meta have announced the list of **120 startups and innovators for XR Startup Program**.
- XR Startup Program includes an **Accelerator and a Grand Challenge**.
  - **Accelerator Program** is supporting **40 early-stage start-ups** working in XR technologies**.**
  - **Grand Challenge** will encourage early-stage innovators in sectors like Education, Learning and Skills, Healthcare, Gaming and Entertainment, etc.
- XR refers to all **real-and-virtual combined environments** generated by **computer technology and wearables**.
  - It includes representative forms such as **augmented reality, mixed reality, virtual reality etc.**



7.6.5. QUANTUM COHERENCE

- Recently an international team of scientists made a breakthrough **in retaining the quantum coherence** of quantum dot spin qubits.
- **Quantum coherence:** Ability of a quantum state to maintain its entanglement and superposition in the face of interactions.
  - It deals with the idea that **all objects have wave-like properties.**
  - If an object's wave-like nature split in two, then two waves may coherently interfere with each other in such a way to form a single state that is a superposition of 2 states **(a qubit is a superposition of the 0 and 1 states).**
- Spin-photon interfaces are **elementary building blocks** for quantum networks that allow converting stationary quantum information (such as the quantum state of an ion or a solid-state spin qubit) into light (**namely photons**) that can be distributed over large distances.
  - **A major challenge** is to find **an interface** that is both good at storing quantum information and efficient at converting it into light.
- Optically active semiconductor **quantum dots are the most efficient spin-photon interface** known to date **but extending their storage time beyond a few microseconds** has puzzled physicists in spite of decade-long research efforts.
  - Recent research provides a solution to the problem that **improves the storage of quantum information beyond hundred microseconds.**
- **Quantum dots (QDs) are a unique type of nanocrystalline semiconductor** whose electronic and optical properties are dependent on the size and shape of the dots.
  - For spins in quantum dots, short coherence times were the biggest roadblock to applications in quantum technology.



7.6.6. BharOS

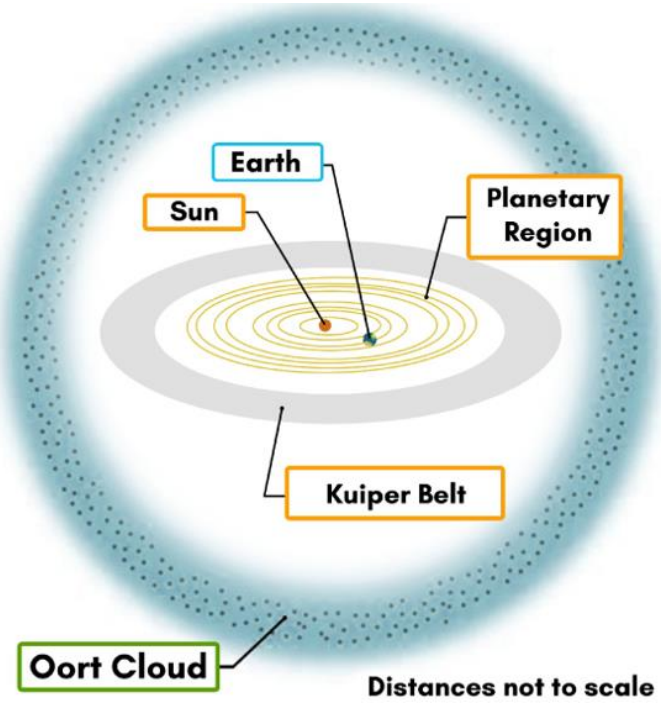
- BharOS is **an AOSP (Android Open-Source Project) based operating system** with **no Google apps or services**.
  - It is **developed by JandK Operations Private Limited**, a non-profit organization **incubated at IIT Madras**.
- **Major difference** between BharOS and Google's Android OS is that **BharOS does not ship with Google services.**
- It will be **a barebone operating system**, which allows **users to install apps of their own interest.**

7.6.7. SOLITARY WAVE (SW)

- Indian scientists reported first evidence of **presence of SW in Martian magnetosphere** with help of data recorded by **MAVEN spacecraft of NASA**.
  - SW are **Distinct electric field fluctuations** (bipolar or monopolar) that **follow constant amplitude-phase relations.** Their **shape and size are less affected** during their propagation.
- **Mars Atmosphere and Volatile Evolution (MAVEN)** explore the Mars atmosphere, ionosphere and how they interact with Sun and solar wind.

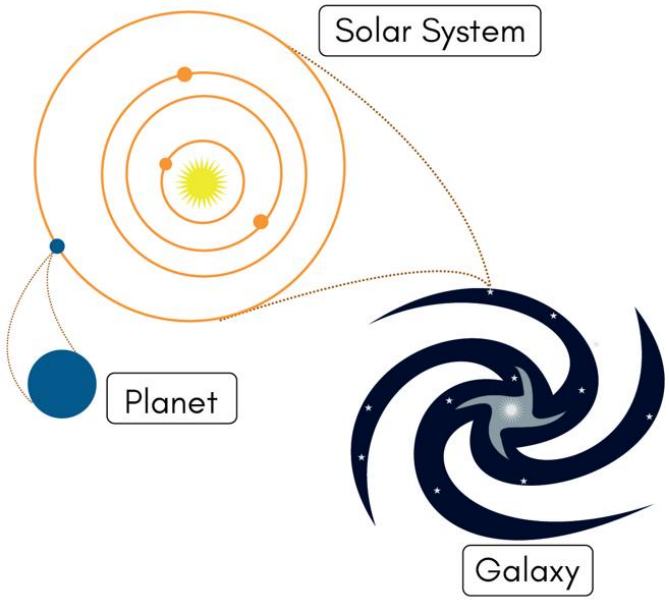
7.6.8. C/2022 E3 (ZTF) COMET

- **Recently discovered** (by Palomar Observatory, USA) **Comet** will appear for the first time in 50,000 years.
- Comets are **frozen leftovers from formation of solar system** (4.6 billion years ago) **composed of dust, rock, and ices.**
- **When a comet's orbit brings it close to Sun**, it heats up and spews dust and gases (forming a tail) **into a giant glowing head** larger than most planets.
- **Billions of comets** are orbiting our Sun **in Kuiper Belt** (called **short-period comets)** and even more **distant Oort Cloud** (called **long-period comets)**.



7.6.9. RR LYRAE STARS

- **More than 200 distant variable stars** known as RR Lyrae stars **discovered in Milky Way's stellar halo**, a spherical cloud of stars surrounding the galaxy.
  - RR Lyrae stars are **known for their fluctuating brightness**, therefore **helping in measuring distances**.
- A **galaxy is a huge collection of gas, dust, and billions of stars** and their solar systems, all **held together by gravity.**
  - Galaxies **can be spiral, elliptical or irregular**.
  - Our galaxy, **Milky Way** (spiral in shape), **also has a supermassive black hole** in the middle.



7.6.10. IMMUNE IMPRINTING

- Recently, Scientific studies have found that **immune imprinting can make bivalent boosters less effective.**
  - Bivalent boosters are variant specific booster shots of vaccines to develop better immunity against coronavirus.
- Immune imprinting is a **tendency of the body to repeat its immune response** based on the **memory of first infection** through infection or vaccination.
  - Imprinting acts as a **database for immune system**, helping it put up a better response to repeat infections.
  - This makes the **variant specific booster dose less effective**.
- Concept of immune imprinting **came to light for the first time in 1947.**

QUIZ

SMART QUIZ

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

8. CULTURE

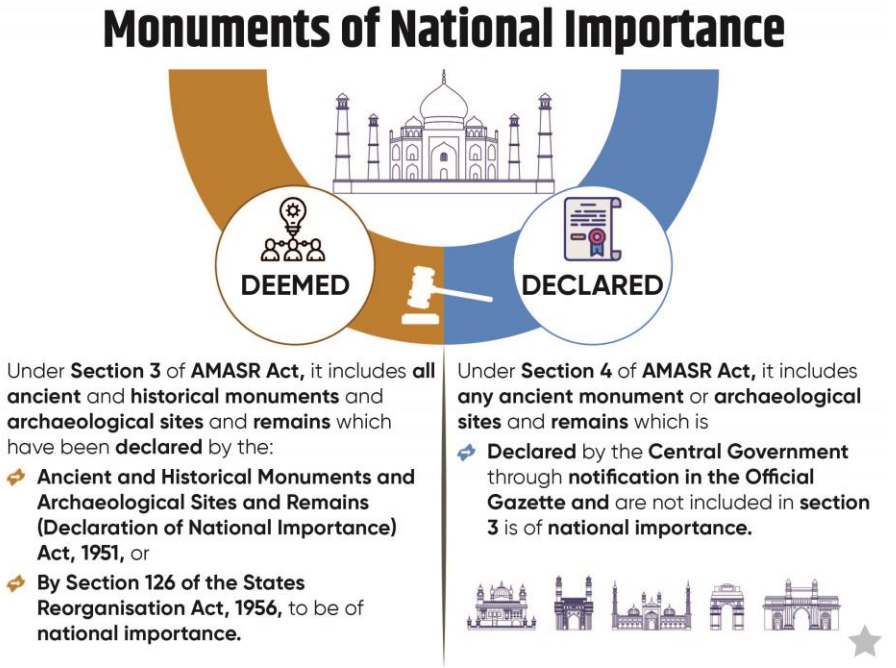
8.1. MONUMENTS OF NATIONAL IMPORTANCE (MNI)

Why in news?

Recently, the **Economic Advisory Council to the Prime Minister (EAC-PM)** has released its report '**Monuments of National Importance: Urgent Need for Rationalization**'.

India's Cultural Heritage and Provisions for its Protection

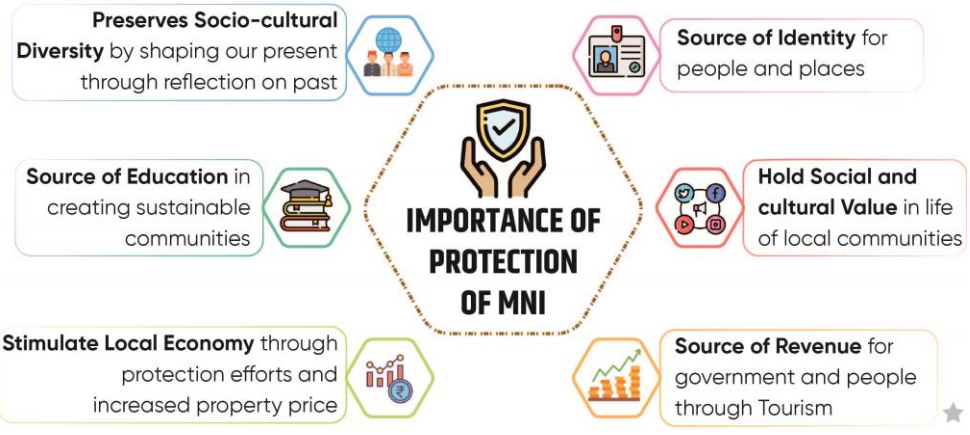
The **historical monuments of India** represent the **glorious** and **diverse cultural history**. Representing India's **tangible cultural heritage** spread across the country, it includes **40** properties inscribed on the **UNESCO World Heritage List**.



- **Legal protection to MNIs: Article 49 of the Constitution of India** directs the state to protect monuments and places and objects of national importance across the country.
  - Accordingly, **the Ancient Monuments and Archaeological Sites and Remains Act, 1958 (AMASR Act, 1958)** was enacted to better preserve India's historical and archaeological treasure.
  - **The AMASR Act (amended in 2010)** provides for the preservation of ancient and historical monuments and archaeological sites and remains which are **deemed or declared to be of 'national importance' under the law (refer image).**
- **Management of NMI: The Ministry of Culture** manages all the **Centrally Protected Monuments (CPMs)** of N**ational Importance**, through the **Archaeological Survey of India**.
  - The **National Monuments Authority (NMA)**, established in **2010** under '**The Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010**', helps Central Government in grading and classifying **Monuments of National Importance (MNI)**.
  - NMA also **looks after the limits of prohibited and regulated areas.**

Archaeological Survey of India (ASI)

- **Established in 1861**, it is an attached office of the Ministry of Culture.
- It is the premier organization of India for the **archaeological research** and **protection of the cultural heritage of India**.
- It is engaged in **protection, preservation,** and **conservation** of **Centrally Protected Monuments/Sites** of **national importance** including **24 World Heritage Property**.
  - As of **August 2022**, India had **3695** MNI under the **AMASR Act, 1958**.
  - Also, we have over **4500 State Protected Monuments** in the country.



- ✓ **Prohibited Area**, i.e., **100-meter (m) radius** of the monument having a **ban on construction activities**, and
- ✓ **Regulated Area**, i.e., **200 m** further away from prohibited area with **regulations on construction**.

Challenges in Protection of MNI

- **Legal Ambiguity:** Lack of a clear definition of 'national importance' in the AMASR Act, 1958 itself or in the National Policy for Conservation (2014).
- **Lack of Byelaws:** NMA, through the 2010 amendment, was mandated to prepare byelaws for all the 3695 monuments. However, since then, byelaws have been prepared only for a few monuments (around 126 MNI till 2021). **Most of them are awaiting the nod of ASI.**
- **Selection Errors:** The lack of definition, substantive process and criteria leads to selection errors such as:
  - **Minor monuments** such as colonial graves and cemeteries being considered as MNI.
  - **Inclusion of movable antiquities** such as inscriptions, tablets or small statues with no fixed address being included as MNI.
  - **Untraceable/Missing Monuments** still considered as MNI.
- **Absence of Survey/review of monuments:** No comprehensive survey of MNIs to identify monuments which are of national importance or of those which had lost their stature.
- **Geographically Skewed Distribution of Monuments:** Though spread across the country, the geographical distribution of MNIs is imbalanced with:
  - Over **60%** of MNIs are in just **five states** (Uttar Pradesh, Karnataka, Tamil Nadu, Madhya Pradesh, and Maharashtra).
  - **Delhi** alone has **173 MNIs** but a large state like **Telangana** has only **8**.
- **Inadequate Expenditure on Upkeep of Monuments:** The budgetary allocation for MNIs preservation and protection is woefully little and inadequate. E.g.
  - In 2019-20, the budgetary allocation for "**conservation, preservation and environmental development**" of **3695 MNI** was only ₹428 crores or ₹11 lakhs per MNI.
  - **The fiscal imbalance is further aggravated** as the Ministry of Culture or ASI isn't allowed to use the revenue collected at monuments through various ticketing, photography, filming, etc.
- **Vacancies in ASI:** ASI has large **vacancies** of **Monument Attendants** and **security guards** who are responsible for day-to-day maintenance and security of the monuments.
- **Lack of Clarity on NMA's role and responsibility:** The Separation of responsibilities between ASI (maintenance of monuments) and NMA (development of surrounding area) lacks clarity.

Missing Monuments of India

- **92 monuments missing**: In 2013, the Comptroller and Auditor General's (CAG) Performance Audit of Preservation and Conservation of Monuments and Antiquities found 92 MNIs missing based on physical inspection of only 1655 monuments.
- **ASI traced/identified 42 monuments** that physically existed, **14 affected** due to **urbanization** and **12 submerged** under reservoirs dams.
  - The remaining **24 monuments** and **sites** still **remain untraceable**; including 11 monuments from Uttar Pradesh and two each in Delhi and Haryana.
- **No concept of missing monuments**: CAG Survey highlighted that ASI had no cognizance of these monuments prior to its study. Add to that, the AMASR Act doesn't include the concept of **Missing Monuments**.
  - **Section 35 of the AMASR Act** provides for **removal of monuments if they cease to be of national importance.**

Way Forward

- **Proper definition, clear criteria, and a multi-layered procedure** for declaring monuments to be of national importance. The **Operational Guidelines** of **UNESCO** on **World Heritage Sites** can help in this regard.
- **Immediately scrutinize and rationalize the MNI list** through survey of the remaining CPMs which were not covered by CAG in its Audit survey.
  - Also, the ASI could maintain **digital logbooks** of each MNI with its attributes (image, exact location etc.) and mandatory fixed time schedule surveys from ASI in future.
  - It will help in having **monument-specific prohibited** and **regulated areas** as well as in digitization of the whole approval process for residents living near the monuments.
- **Formation of State Level Coordination Committees** for coordination and resolution of important issues between centre and states.

- Also, **monuments with local importance** should be handed over to the respective states for their protection and upkeep.

- **Trace Missing Monuments** by using **scientific tools** and **archival records**. E.g., use of satellites, field explorations and periodic surveys with the help of old revenue records, revenue maps and published reports.
- **Empower NMA** by making it an autonomous body under ASI and giving ASI responsibilities on monument maintenance to NMA.
  - The main focus of ASI should be on archaeology research, excavation, restorations and maintenance of museums.
- **Fill vacant positions and use Technology** for round-the-clock watch on MNIs with periodic inspection of cleanliness.
  - Local Panchayats and police can also be involved in safeguarding the monuments and if necessary, the AMASR Act may be amended in this regard.
- **Increase fund allocation** for protection and preservation of MNI through special budget allocation for protection, preservation, and restoration.
  - **Opening new revenue streams** for MNI through tickets, events, fees etc. and encouraging participation of local people, NGOs, and societies (like INTACH). E.g., **Adopt a Heritage** initiative by the Ministry of Tourism along with the Ministry of Culture and ASI.

8.2. CHARAIDEO MAIDAMS (AHOM BURIAL MOUNDS)

Why in News?

The Government of India has decided to nominate Assam's **Charaideo Maidams or Moidams (Ahom Burial Mounds)** for the UNESCO World Heritage Centre for the year 2023.

More on News

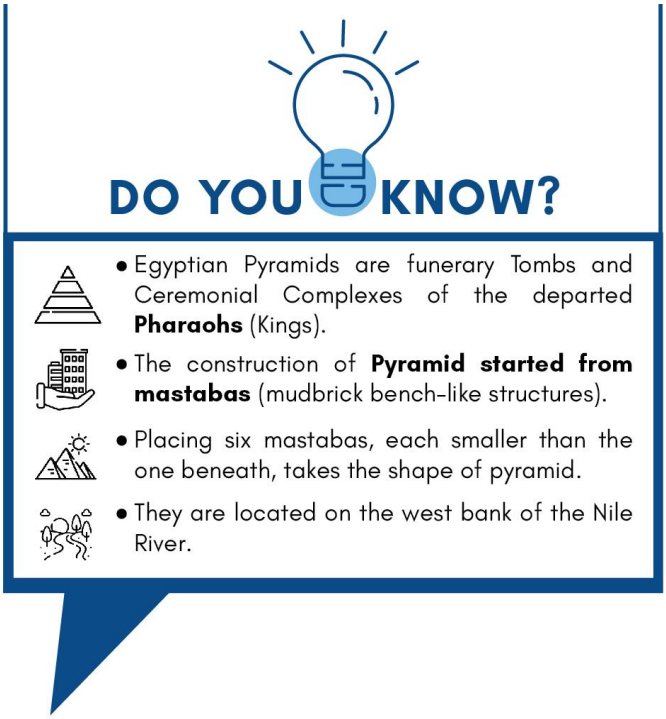
- The announcement was made in the backdrop of 400th birth anniversary of **Lachit Barphukan**, legendary Ahom (Also known as Tai Ahom) general.
- **If it gets selected as a World Heritage Site then it would be first cultural heritage in the northeast.**

About Charaideo Maidams

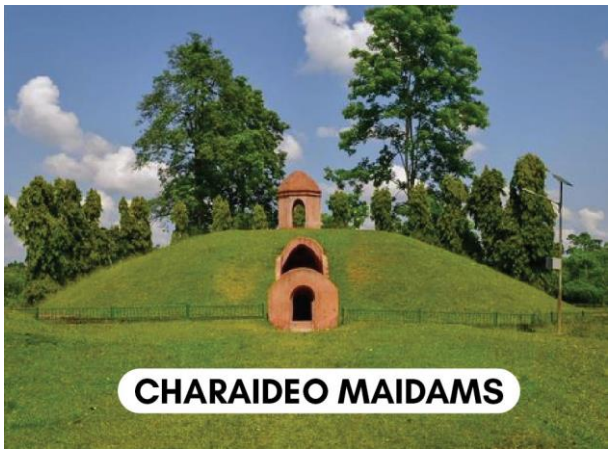
- Charaideo Maidams are **mounds containing the remains of the royalty of the Ahom dynasty**.
- **Features and Location**
  - Mounds are located along the foothills of the **Patkai range**.
  - These are commonly known as the **Pyramids of Assam**.
- **Source of Information**
  - The **Changrung Phukan** (canonical text developed by the Ahoms) provides detail about the different aspects of the Maidams.
- **Structure**
  - They are **vaulted chamber**. They are often double storied.
  - **Hemispherical mud-mound layers** of bricks and earth is laid at the top.

UNESCO World Heritage Site

- **World Heritage Site** is the designation for places on Earth that are of outstanding universal value to humanity or any of various areas or objects inscribed on the **United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage List.**
- Sites are designated as World Heritage Site under the '**Convention Concerning the Protection of the World Cultural and Natural Heritage**', which was adopted in the year **1972**.
- **As of January 2023**, there are **1157 World Heritage** Site. These Sites are categorized into three types namely **Cultural site**, **Natural site** and **Mixed site**.
- **World Heritage Site in India**
- There are **40 World Heritage Sites**. Out of these, **32 are cultural**, **7 are natural**, and one, the **Khangchendzonga National Park (Sikkim)**, is of mixed type.



- ✓ And, the base of the mound is reinforced by a polygonal toe-wall and an arched gateway on the west.
  - Each vaulted chamber has a centrally **raised platform** where the body was laid.
  - Excavations have also found that several objects used by royal family like royal insignia, objects made in wood or ivory or iron, gold pendants, etc. were also buried with them.
- **Decline of this Burial System**: After 18th century, many converted to Buddhism and others adopted Hindu method of cremation.
  - Then, they began entombing the cremated bones and ashes in a Maidam.



Phases of Maidams Construction		
Period	**13th CE to 17th CE**	**18th CE Onwards**
Material Used	**Wood** was used as the **primary material** for construction.	**Stone and burnt bricks of various sizes** were used for construction.

Ahom Dynasty

- **Ahom dynasty** was founded by **Chao Lung Siu-Ka-Pha** in **1228**. He was a **Shan prince of Mong Mao** who came to Assam from Myanmar, crossing the Patkai Mountains.
- **Charaideo** (east of Guwahati) was the **first capital** of the Ahom dynasty.
  - **Charaideo means dazzling city above the mountain.**
- In 16th century, under the rule of Suhungmung, Ahom **captured territories** of the **Chutiya** and the **Kachari** kingdoms.

Lachit Barphukan (legendary general or Commander in chief of Ahom dynasty)
In 1662, Army of Mughal Emperor Aurangzeb invaded Assam and captured Guwahati. In the **Battle of Saraighat** (1671), Lachit Barphukan defeated Mughal force and recovered the territories which were captured by Mughals.

Administration:

- **Ahom** king was known as **Swargadeo.**
- **Council of ministers** was referred as **patra mantris.**
- **Borbarua** (**military and judicial head)** and **Borphukan (military and civil)** were important officers.
- They replaced the older political system of the **bhuiyans (landlords).**

Society and Religion

- Society was divided into **clans** or **khels**. A khel often controlled several villages.
- Several elements from the Hinduism such as Varna system was adopted by them.
- In beginning, they worshiped **tribal gods.**
- They **adopted Hinduism**, during the reign of **Sudangpha** (1397-1407). However, they did not totally give up their traditional beliefs.
- The king **granted land** to the **temples and Brahamanas.**

Economy:

- **Paik system** was followed by them, in which people worked as a **corvee labour** (**unpaid** or **forced** labour).
- They introduced **wet rice cultivation** in **upper Assam** that was largely a marshy and thinly **populated land.**

Military:

- Ahom Army consisted of infantry, navy, artillery, elephantry, cavalry and spies.
- Adult recruited under Paik system **were used as a militia in return for a land**.
- The Ahom soldiers were expert in **guerrilla fighting**. By this tactic, they were succeeded in thwarting the mighty Mughals.

End/Decline:

- Ahom rule came to end with the annexation of Assam by British in 1826 (**Treaty of Yandaboo).**

8.3. SAMMED SHIKHAR AND SHETRUNJAY HILL

Why in News?

Jain community organised protests across the country over the religious site of Sammed Shikhar on Parasnath hill in Jharkhand and Shetrunjay hill in Palitana of Gujarat.

More on News

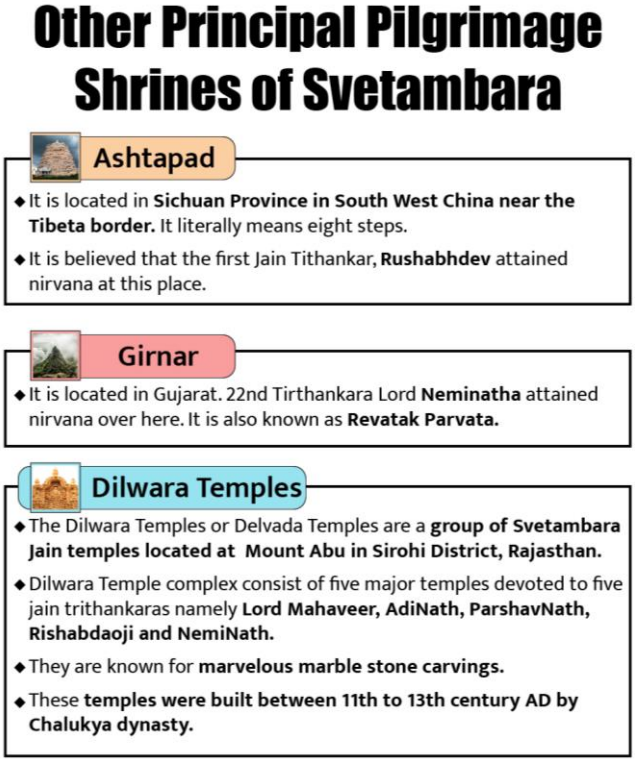
- In Jharkhand, the issue is about **Parasnath hill being declared a tourist spot and an eco-sensitive zone**.
  - The Jain community has been protesting against the Jharkhand government's **tourism policy which intended to develop Sammed Shikharji in Parasnath hills as a tourist destination.**
  - Also in 2019, Parasnath hill was declared as an eco-sensitive zone by the Union Ministry of Environment, Forest and Climate Change. Ministry planned to develop eco-tourism over here.
  - Jain community believes that it will **deteriorate sanctity of their religious site**.
- In Gujarat, the row is over the vandalising of **Adinath Dada's Pagla, a marble carving representing the feet of Lord Adinath, the first Jain Tirthankar.**
  - Jain community also expressed their concern over the **illegal commercialisation, mining of Shatrunjaya Hill.**
  - The Jains are demanding that Shetrunjay hill and the area around it be protected so as to maintain its holiness.

Santhals assert their claim over Parasnath Hill

- In the backdrop of protest from Jain community**, Union Ministry of Environment, Forest and Climate Change banned sale of liquor and non-vegetarian food** within 10 km radius of the Parasnath hill.
- This decision was **opposed by the Santhals**, the largest tribal community of Jharkhand.
  - They consider **Parasnath hill as their Marang Buru (hill deity)**.
  - This decision will affect their religious rituals such as animal sacrifice.
- During British Period, **the dispute between Santhal and Jains over Parasnath hill was heard by Privy Council** [the highest court in the British empire].
  - The Council ruled in the favour of the Santhal Tribe.

Sammed Shikhar

- Also known as **Sammet Shikharji** (literal meaning is venerable peak) or Shikharji.
  - It is also called '**Siddha Kshetra'** and **'Tirtharaj' in Jainism**, which means, 'King of Pilgrimages'.
- It is situated on the **Parasnath hill** in Jharkhand.
  - It has been named after the **23rd Jain tirthankara 'Parshvanatha'**.
- It is believed that **20 of the 24 Jain Tirthankars (**Except bhagvan Rishabdev, bhagavan Vasupujaya, bhagvan Nemihatha and bhagvan Mahavira**) have attained salvation** ("moksha" after meditating) at this Shikhar.
  - Tirthankara means **"full moon",** which is a **metaphor for Keval Gnan.**
  - A Tirthankar is **not an incarnation of the God**.
  - He is an ordinary soul that born as a human and attains the states of a Tirthankar as a result of intense practices of penance, equanimity and meditation.
- Shikharji is worshiped by both the **Digambaras** and the **Svetambaras**.
- Shikharji is also part of **'Svetambara Pancha Tirth'** (five principal pilgrimage shrines), the other four are **Ashtapad, Girnar, Dilwara Temples of Mount Abu** and **Shatrunjaya**.



Shetrunjay hill

- It is situated at **Palitana in Bhavnagar district of Gujarat**.
- It is also known as **Pundarikgiri (named after Pundarika, grandson of Adinath).**
- It is situated on the **banks of the Shetrunji River**.

- It rises at **Chachai hills in Gir Forest of Junagadh district**.
- It is an east flowing river and empties into the gulf of Cambay.

- Adinath or Rishabhanatha, the first Tirthankara delivered his first sermon at this hill.
- The temples over the hill were built in the **eleventh** and **twelfth** century.

8.4. ROOTS OF DEMOCRATIC VALUES IN INDIA

Why in News?

In a recent episode of Mann ki Baat PM while observing that India is a democratic society by nature stated that democracy has been an integral part of our daily lives for centuries.

Institutions/practices mentioned by PM

Particulars	About	Democratic Values
Uthiramerur Inscriptions	• This inscription **dated around 920 A.D** in reign of **Parantaka Chola-I (907-955 AD).** • It is an **ancient Chola village** once known **as Chaturvedimangalam** and is located near Chennai in Tamil Nadu. • Chola self-government was built upon **'general assemblies' or 'sabhas' or 'maha sabha' of villages.** • As per Uthiramerur inscriptions on **Chola Kudavolai Election System,** every village was categorised as **kudumbu (ward in modern day parlance)** where representatives of **general assembly were elected.** • **Qualification for contesting: Must own land, own a house built** on legally-owned site, have knowledge of 'Mantrabrahmana', and **above 35 years of age** and **below 70 years.** • **Disqualification**: of elected members for acts of misconduct included accepting bribes, misappropriating else's property.	Elected Representatives, Voting Rights, Conduct of elected representatives
Anubhava Mantapa of Lord Basaveshwara	• It was established by **Lord Basaveshwara** to facilitate **gathering for philosophy and experience.** • **Anubhava Mantapa** was one of the **earliest Parliament in history of mankind.** ○ **Prabhudeva,** a great **Yogi,** was the **President** and **Lord Basava** acted as the **Prime Minister.** • Only difference between the present-day parliament and Anubhava Mantapa is that members **were not elected by people but** were **picked up or nominated by higher authorities of Mantapa**. **Lord Basaveshwara (1105-1167)** • He was a **12th century poet and born in Karnataka**. • Known for **Socio-Religious Reforms, Anubhava Mantapa, Vachana Literature and Lingayat Movement** in south India. • **Basava Purana**, written by Palkuriki Somanatha in 13th-century, holds full account to Basavanna's life and ideas.	Parliamentary Democracy
Kakatiya Tradition	• It ruled the region comprising present-day **Telangana and Andhra Pradesh from 12th to 14th centuries**, with **Warangal as Capital.** • There were **elected committees in the villages** to look after installation and maintenance of tanks, canals, and reservoirs.	Local Self-government
Bhakti movement	• Bhakti movement **facilitated the accommodation of interpretations of freedom and equality** and paved the way for the **emergence of a secular democratic society**. • It also aimed at **supporting the cause of establishing egalitarian society, women empowerment,** and **community development** based on social democracy.	Right to Equality, Secularism, Equality of opportunity, Promotion of welfare of the people.

Other evidences of democratic values in earlier India

	About		Democratic Values
Democracy in Ancient India	• **Two sets of assembly, namely, 'sabha' and 'samiti'** figuring in the 'Atharva Veda' and said they were similar to the present-day Lok Sabha and Rajya Sabha. • **Buddhist and Jain texts** list several **republican states of the time**. **Lichchavi state of Vaishali**, in particular, deserves special mention. • The **villages ruled by their elected representatives** and were, therefore, autonomous and self-governing administrative units. • In the **Mahabharata's Shanti Parva**, **republics are mentioned** along with the essential features of administering them.		Adult Franchise, Elected bodies, Local self-government, Protection of life and personal liberty
Principles of democracy in ancient scriptures	• **Vedas describe at least two forms of republican governance**. The first would consist of elected kings and second where power vested in a council or sabha.		Duties of the King (like present day PM duties), Cabinet System, Federalism, Protection of Rights of citizens, Remedies for violation of rights.
	Aitareya Brahaman	• It has a logical bifurcation of various types of kingdoms **including Swa-rajya** as an important form of government.	
	Dharma shastras	• They impressed upon **kings to look upon the subjects as God** and serve them with love and reverence.	
	Atharvaveda	• All human beings have **equal rights over food and water.**	
	Smritis and Puranas and **Vedic samhitas**	• They were collections of **rules of Dharma** including civil rights and criminal liabilities as also Raj Dharma (Constitutional law). • **King was to govern as per Dharma** (similar to Article 13 which provides for protection of rights of people). • **Kings who failed in protection** and welfare of subjects **were deposed by subjects** (Dusthiritu of Daspurush dynasty). • There is a mention of both **unitary and federal form of systems**.	
	Kautilya's Arthshastra	• **Various departments** – Defence, Revenue and Agriculture among others.	
Democratic tradition among the tribes of Northeast India	• **Monaps** (one of the ethnic groups in Arunachal Pradesh) during 11th century began to **establish a system of democratically elected village chiefs** with decentralized self-governing councils. • **Village of Adi Tribe** (Siang districts of Arunachal Pradesh) are **self-governing and an independent administration** with legislative and executive powers. • **Traditional Khasi polity has a three-tier system**. At the lowest level is the village, middle level is Durbar Raid and at apex is the Durba Hima or the State assembly. • **Among several Naga tribes**, despite **chief having the highest authority** in the village, authority he enjoyed is **subjected to conformity of the village council.**		Three-tier government, Local self-government, Elections, Duties, and responsibilities of the Chief authority.

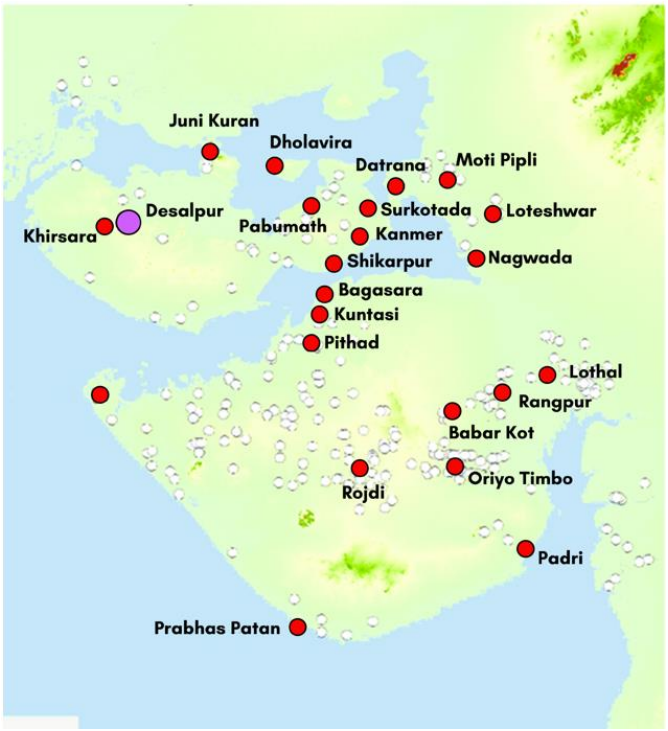
8.5. NEWS IN SHORTS

8.5.1. EXCAVATION AT HARAPPAN SITE IN GUJARAT

- **Excavations at Juna Khatiya village** (Kutch district) found **rows of graves** with skeletal remains, **ceramic pots, beaded jewellery, animal bones etc.**
  - These are **from 3,200 BCE to 2,600 BCE**, (pre-urban Harappan) **predating several other Harappan sites** in the state.
- **Key findings**
  - Other sites like Dholavira have a cemetery in and around the town, but **no major habitation has been discovered here.**
  - Site demonstrates **transition from earth-mound burials to stone graves.**
  - **Pottery have features and style similar** to those excavated from early **Harappan sites in Sindh and Balochistan.**
  - **Pebbles of local rock, basalt, etc were used for construction**, and clay was used to bind them together.
- **Major burial practises of Indus Valley Civilization** (also known as Harappan Civilisation)

- Although **varied across sites**, there were **three known types** of burial customs: **complete burial, fractional burial and urn burial** (Burial of the ashes after cremation).
- **Most common burial method** was placing body with **head towards north** in a simple pit or brick chamber.
- **Grave goods** including food, pottery, tools and ornaments **can be found along with the body.**
- **Lothal** provides evidence of **burial of pairs of male and female** together.

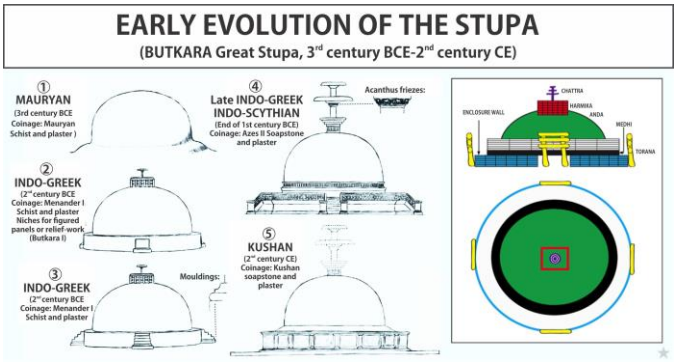
Major Harappan sites in Gujarat



8.5.2. NALANDA MAHAVIHARA

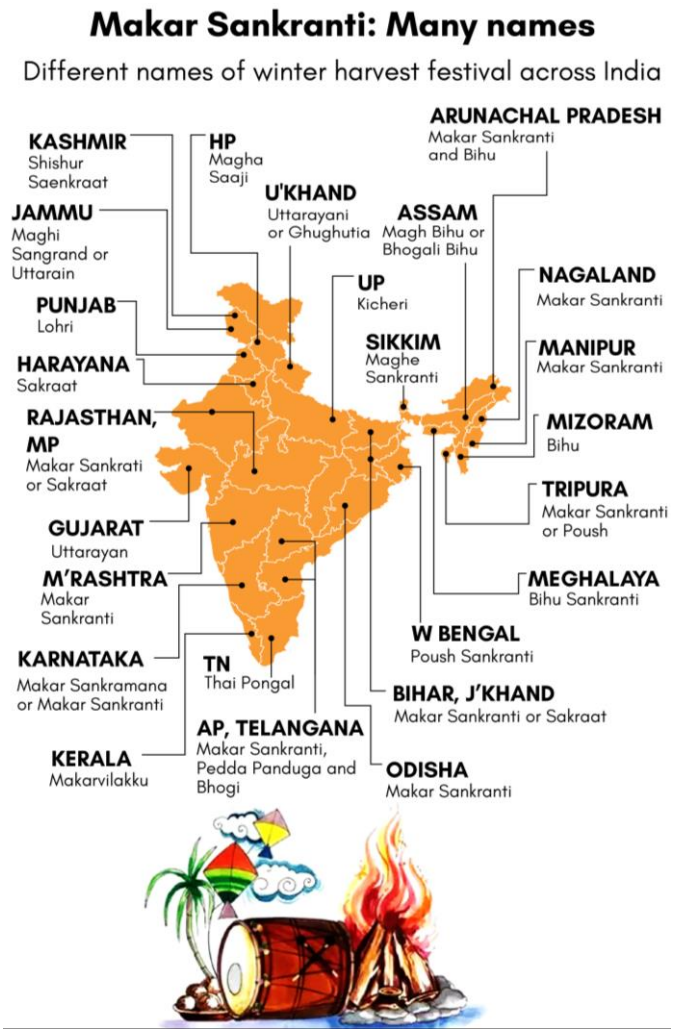
- Archeological Survey of India discovered two 1200-year-old miniature **votive stupas** at Nalanda Mahavihara.
- Votive stupas (offered in fulfillment of a vow) **were discovered near Sarai Tila mound** within premises of **Nalanda Mahavihara in Bihar.**
- **Stupa**, Sanskrit for heap, **is a mound-like** (hemispherical) **burial structure** containing **relics of Buddhist monks.**
  - E.g., **Sanchi Stupa** built over Buddha relics.
- **Architectural features of Stupa:**
  - A **hemispherical mound** or **anda's shaped dome**
  - **A square railing or harmika**
  - **Central pillar supporting a triple-umbrella form (*chattra*),** representing three jewels of Buddhism**.**
  - Enclosure wall with **decorated gateways** (***toranas***) at cardinal directions.
  - **A circular terrace (*medhi*)** for ritual circumambulation.

- **About Nalanda Mahavihara**
  - It is a **UNESCO World Heritage Site with archaeological remains** of a monastic and scholastic institution **from 3rd century BCE to 13th century CE.**
    - ✓ **Gautam Buddha** as well as **Mahavira stayed at Nalanda.**
    - ✓ **Other famous scholars at Nalanda** Nagarjuna, Dharampala, Dinnaga, Jinamitra Santaraksita etc.
    - ✓ Imminent **pilgrim monks like Hiuen Tsang** and **I-tsing** also visited.
  - It prospered under **Gupta Dynasty**, **Harsha** of **Kannauj** and **Pala Dynasty.**
  - It includes **stupas, shrines, viharas** (residential and educational buildings) and important **art works in stucco, stone** and **metal.**



8.5.3. HARVEST FESTIVALS

- Makar Sankranti is **major harvest festival celebrated** across India and different states celebrate festival **under different names, traditions, and festivities.**
  - Festival is **dedicated to Sun God**, Surya and **marks the first day of sun's transit into Makara** (Capricorn).
  - Makar Sankranti **heralds end of winter** and **start of longer days** as sun moves northward.



8.5.4. THULLAL

- **Ottanthullal (or Thullal)** is a **recite-and-dance art-form of Kerala** that is **famous for its humour and social satire.**
  - It **was introduced in 18th century by** legendary **poet Kunchan Nambiar.**
- It is **marked by its simplicity** as opposed to more **complex dance-forms** like **Kathakali** and **Koodiyattam**.
- Thullal **performer is supported by a singer** who repeats the verses and is **accompanied by an orchestra** of mridangam or thoppimaddalam (percussions) and cymbals.
- It has **spawned into three separate versions** which include **Ottanthullal, Seethankan thullal and Parayan thullal.**

8.5.5. PADMA AWARDS PRESENTED BY THE PRESIDENT

About	• Padma Awards are **one of the highest civilian honours of India.** • **Instituted in 1954,** it is announced **every year on the occasion of Republic Day** except for brief interruption(s) during 1978 and 1979 and 1993 to 1997. • Award **does not amount to a title** and **cannot be used as a suffix or prefix**.
Categories	• 3 Categories- ○ **Padma Vibhushan** for exceptional and distinguished service. ○ **Padma Bhushan** for distinguished service of a high order; and ○ **Padma Shri** for distinguished service.
Awarded for	• Award **seeks to recognize achievements in all fields or disciplines** where an element of public service is involved. ○ An illustrative list of the fields includes **Art, Social Work, Public Affairs, Science & Engineering, Trade & Industry, Medicine, Literature & Education, Civil Service, Sports** etc.
Recommen-dations /Nomi-nations	• They are **conferred on the recommendations made by Padma Awards Committee**, which is constituted by Prime Minister every year. ○ Even **self-nomination can be made.** ○ However, **Government servants** including those working with PSUs, except doctors and scientists, **are not eligible for these Awards.**
Other relevant information	• **Total number of awards** to be given in a year (excluding posthumous awards and to NRI/foreigners/OCIs) **should not be more than 120.** ○ Award is **normally not conferred posthumously** (exception for highly deserving cases). ○ A **higher category of Padma award** can be conferred **only where a period of at least five years has elapsed** (exception can be made) since conferment of earlier Padma award. • Awardees are **presented a Sanad** (certificate) **signed by the President and a medallion**. There is **no cash prize.**

8.5.6. PARAM VIR CHAKRA (PVC)

- On Parakram Diwas, **21 largest unmanned islands of Andaman & Nicobar Islands** were named after **21 Param Vir Chakra (PVC) awardees**.
  - Parakram Diwas is celebrated on occasion of the birth anniversary of **Netaji Subhas Chandra Bose**.
- PVC is **India's highest military decoration**, awarded for displaying distinguished acts of valor during wartime.
  - It was designed by Mrs. **Savitri Khanolkar**.

- Cast in **bronze**, it carries **state emblem** at centre on a **raised circle** surrounded by **four replicas** of **Indra's Vajra**, flanked by **sword of Shivaji**.
    - **Major Somnath Sharma** (Posthumous) was **first PVC awardee.**

8.5.7. KEHLO INDIA YOUTH GAMES (KYIG), 2022

- Khelo India Youth Games is being held in **Bhopal, Madhya Pradesh**.
    - A **special mobile application** has been launched to ensure that participating athletes, coaches, support staff etc have **access to all related information**.
- **About KYIG**
    - KIYG were **first hosted in 2018** in New Delhi.
    - Current edition (**fifth**) of KIYG will feature athletes taking part in **the U-18 age category**.
        - ✓ Also, **water sports being included for first time** in history of games.

8.5.8. JEEVAN RAKSHA PADAK SERIES OF AWARDS-2022

- President approved conferment of Jeevan Raksha Padak Series of Awards-2022.
- Awards is **given to a person for meritorious act of human nature in saving the life of a person**.
    - It is **given in three categories**, namely Sarvottam Jeevan Raksha Padak; Uttam Jeevan Raksha Padak and Jeevan Raksha Padak.
    - Persons of all walks of life are eligible for these awards.
    - It can also be **conferred posthumously**.

QUIZ

SMART QUIZ

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

Emphasis on conceptual clarity to train the aspirants for developing an understanding to solve ethics case study from basic to advance level

Case studies covers all the exclusive topics from contemporary and current issues as well as previous Year UPSC Paper Case studies

To discuss on Various techniques on writing scoring answers.

One to one mentoring session

ETHICS

Case Studies Classes

ADMISSION OPEN

Focus on contemporary issues and interlinking case studies with topics of current interest.

Regular Doubts clearing session and personal guidance for the ethics paper throughout your preparation

Daily Class assignment and discussion

Comprehensive & updated ethics material

9. ETHICS

9.1. ETHICS OF INFLUENCER ENDORSEMENTS

Introduction

The Centre has released the **endorsement guidelines for celebrities and social media influencers titled as the "Endorsements Know-hows!"**. These guidelines have been issued under the overall ambit of **Consumer Protection Act 2019.**

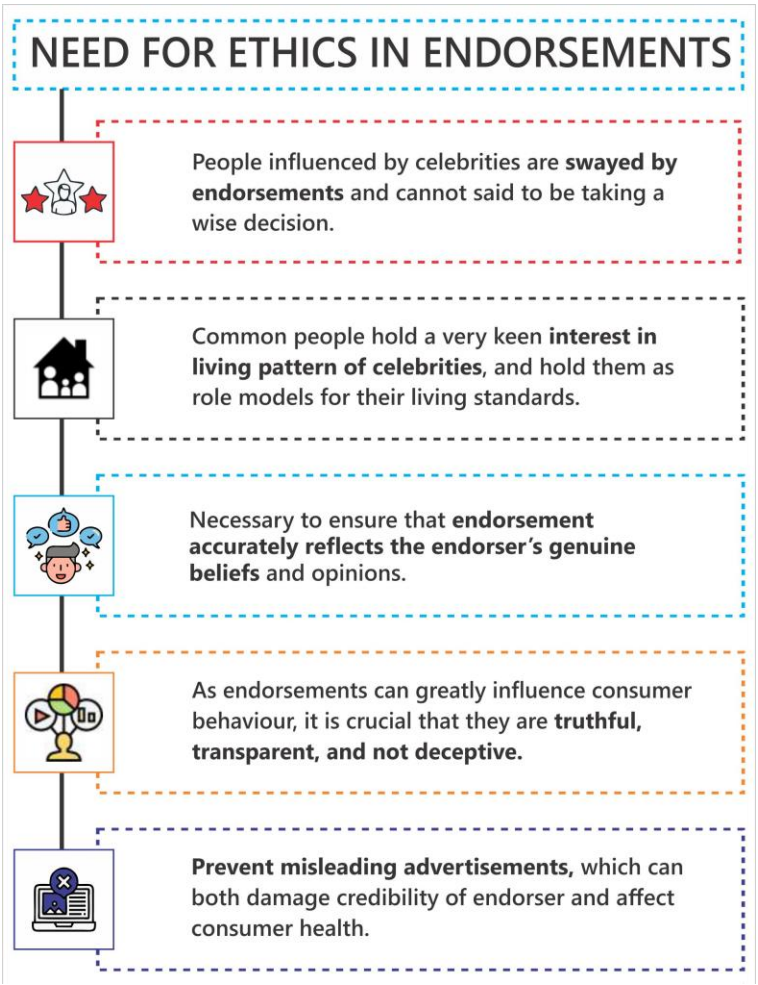
What are Celebrity Endorsements?

Endorsements are a **form of advertising that uses famous personality or celebrities or social media influencers** who command high degree of recognition, trust, respect or awareness among the people.

Endorsement by celebrities or influencers have **a greater capability to persuade buyers** as they are viewed as role models in a society.

What are the prevalent ethical issues in influencer endorsements?

- **Instances of misuse of Trust: Followers are bound in a strong manner** with the influencer. They trust that influencers would not recommend something that is harmful, or low quality. However, this is **not the case with brand marketing** by such influencers.
- **High influence but less responsibility:** Influencers have **higher ability to persuade consumers**. However, **there is no responsibility mechanism for checking the endorsed products.**
- **Difficult to distinguish commercial messaging:** Promotion by influencers often do not look like commercials but rather as general advices.
    - Advertisements are posted **without any such disclosure** and are difficult to identify.
- **Lack of understanding of nature or quality of product by influencers:** Sometimes, influencers themselves have **limited idea of the quality of product** they are promoting. This was evident in **Fyre festival fraud**.
- **Conflict of interest and deceptive marketing:** Often the products are advertised showing that they have been made keeping the benefits of consumer in mind but are actually promoted based **solely on profit motive**.
- **Targeting of vulnerable groups** such as children or teenagers, that may **not be able to critically evaluate** the products that influencers are promoting.



Perspective of influencers

- **Unreasonable expectation of detailed due diligence:** Celebrities are often blamed for not performing due diligence on brands they endorse. This **expectation of due diligence is often open-ended and unreasonable**.
    - Also, appropriate data for such due diligence may not be in public domain.
- **Brand responsibility:** Influencer groups have argued that **Brands should be made equally responsible** for framing a misleading advertisement in the first place.
- **Moral boundaries**, in the case of products like carbonated beverages and fairness creams, should be **drawn by the individual celebrity himself/herself**.
    - For instance, P. Gopichand decided not to endorse carbonated soft drinks owing to their deleterious health effects.
- **Influencers reputation and credibility is at stake** in a brand's endorsement. So, they themselves are often mindful about endorsement decisions as their name is associated with the brand image for a long time.

Endorsement Know-hows: Guidelines for Celebrity and Social Media Influencers

- **Compulsory disclosure of monitory or material benefits of a product or a brand** they are promoting through their social media platforms.
  - Benefits and incentives, and monetary or other compensation, trips or hotel stay, media barters, coverage and awards, free products with or without conditions, discounts, gifts and any family or personal or employment relationship come under material benefits.
- **Penalty:** Failure of compulsory disclosure will attract a **penalty up to ₹ 50 lakh**.
  - If there are any violations, the **penalty prescribed** for misleading advertisements **under the Consumer Protection Act (CPA) 2019** will be applicable.
- **Clear communication**: The disclosures must be prominently and clearly displayed in the endorsement and **terms such as 'advertisement', 'sponsored' or 'paid promotion'** should be used for all sort of endorsements.
- **Advertise responsibly:** They should **not endorse any product or service** in which due diligence has not been done by them or that they have **not personally used or experienced**.

Penalties under CPA 2019

The Central Consumer Protection Authority (CCPA) can impose a penalty of **up to ₹10 lakh on manufacturers, advertisers and endorsers** and for repeated offences, a penalty of up to ₹ 50 lakh can be imposed.

The CCPA can also **prohibit the endorser of a misleading advertisement from making any endorsement** for up to one year and for subsequent contravention, prohibition can extend up to three years.

Way forward

- **Code of ethics for social media influencers:** It should include **establishment of authenticity** of the products by them and promoting safe and beneficial products to their audience.
  - Such code can be interpreted in terms and conditions of social media intermediaries and they should inform influencers about various aspects of such code.
- **Self-regulation by celebrity or influencer groups:** Influencer marketing industry should come up with a **set of guidelines and best practices** that influencers can follow to ensure that their promotions are ethical and transparent.
- **Effective age restrictions and parental controls:** To prevent targeting of children or teenagers to such misleading advertisements.
- **Creation of a governmental due diligence structure:** Government can form a committee or a forum to consistently check products or services for their claims. This will limit the onus of due diligence on celebrities and will **create a sense of brand responsibility**.

10. SCHEMES IN NEWS

10.1. PM SVANIDHI

Why in news?

Recently, the Government has extended deadline of the PM Street Vendor's Atma Nirbhar Nidhi (PM SVANidhi) Scheme till 2024.

Objective	Features

• To **facilitate working capital loan** up to `10,000 at subsidized rate of interest.
• To **incentivize regular repayment of loan**; and
• To **reward digital transactions**.
	• It is a Central Sector Scheme.
	• It was launched **by the Ministry of Housing and Urban Affairs in 2020** for **providing affordable working Capital loan to street vendors** to resume their livelihoods that have been adversely affected due to Covid-19 lockdown.
	• The duration of the scheme initially was until March 2022.
	• It has been **extended till December 2024**, with focus on:
	  ○ **Extension of lending period till December 2024**;
	  ○ Introduction of **3rd loan of upto ₹50,000** in addition to 1st & 2nd loans of ₹10,000 and ₹20,000 respectively.
	  ○ To extend '**SVANidhi Se Samriddhi' component** for all beneficiaries of PM SVANidhi scheme across the country.
	• **Interest subsidy:** The vendors, availing loan under the scheme, are eligible to get an interest subsidy @ 7%.
	• **Target beneficiary:** Street vendors/ hawkers vending in urban areas, as on or before March 24, 2020, including the vendors of surrounding peri-urban and rural areas.
	• **Criteria for eligible vendors:**
	  ○ Street vendors in possession of Certificate of Vending / Identity Card issued by Urban Local Bodies (ULBs).
	  ○ The vendors, who have been identified in the survey but have not been issued Certificate of Vending / Identity Card.
	• **Eligibility of States/UTs:** The Scheme is available for beneficiaries belonging to only those States/UTs which have notified Rules and Scheme under Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014.
	  ○ Beneficiaries from Meghalaya, which has its own State Street Vendors Act may, however, participate.
	• **Digital transactions:** The scheme will incentivize digital transactions by vendors through cash back facility.

	• **Lending Institutions:** Scheduled Commercial Banks, Regional Rural Banks, Small Finance Banks, Cooperative Banks, Non-Banking Financial Companies, Micro-Finance Institutions and SHG Banks.
	SVANidhi se Samriddhi programme
	• **'SVANidhi se Samriddhi' is** an additional program of PMSVANidhi was launched on 4th January 2021 in 125 cities in Phase 1.
	• Objective
	  ○ To **map the socio- economic profile** of the PM SVANidhi beneficiaries and their families
	  ○ **Assess their potential eligibility for various Central welfare schemes** and facilitate the linkages to these schemes. For eligible schemes (See infographics)
	• **Quality Council of India (QCI)** is the implementing partner for the programme.

10.2. JAL JEEVAN MISSION

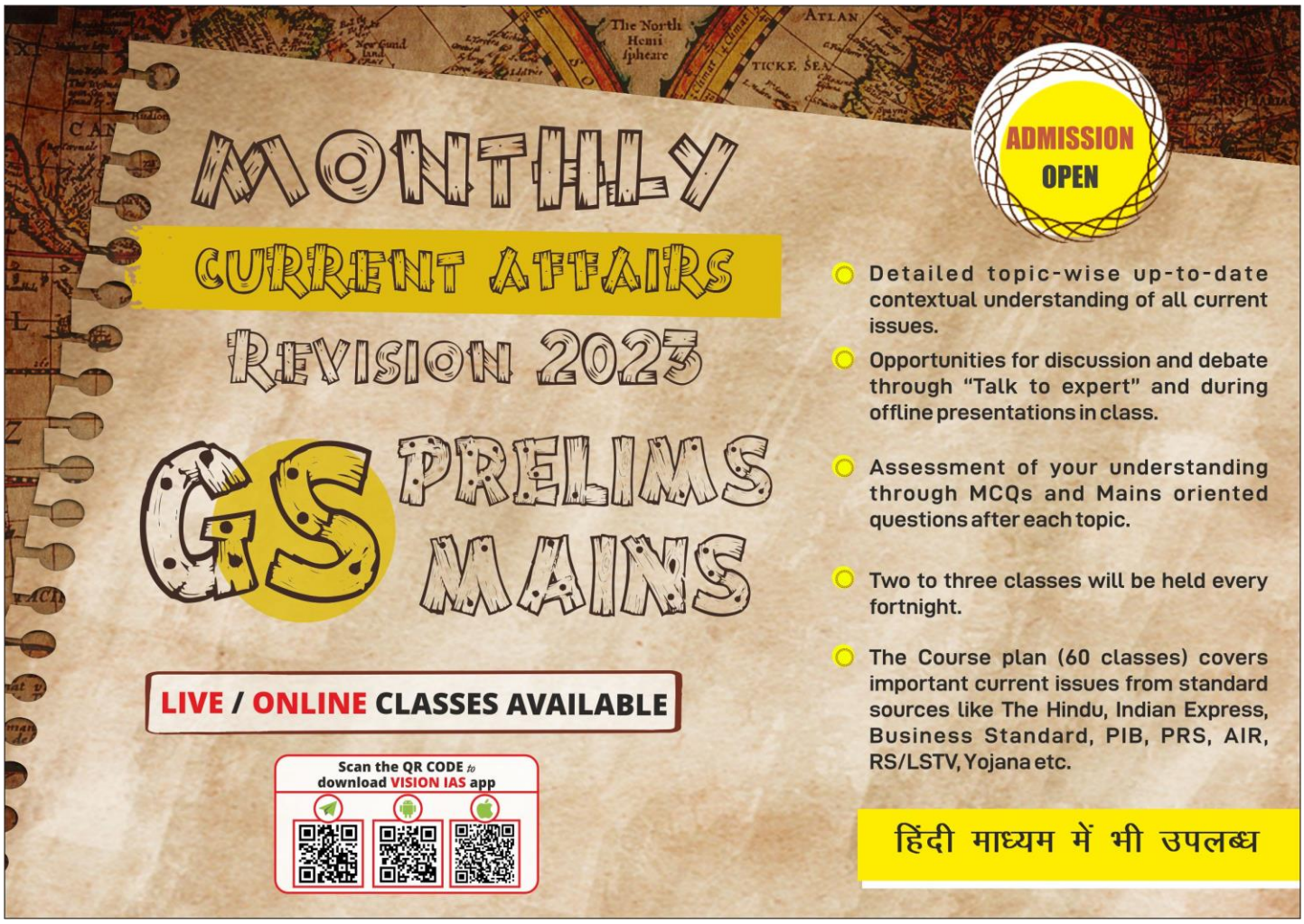
Why in News?

Union Ministry of Jal Shakti informed that over 11 crore rural households of the country have access to tap water connections.

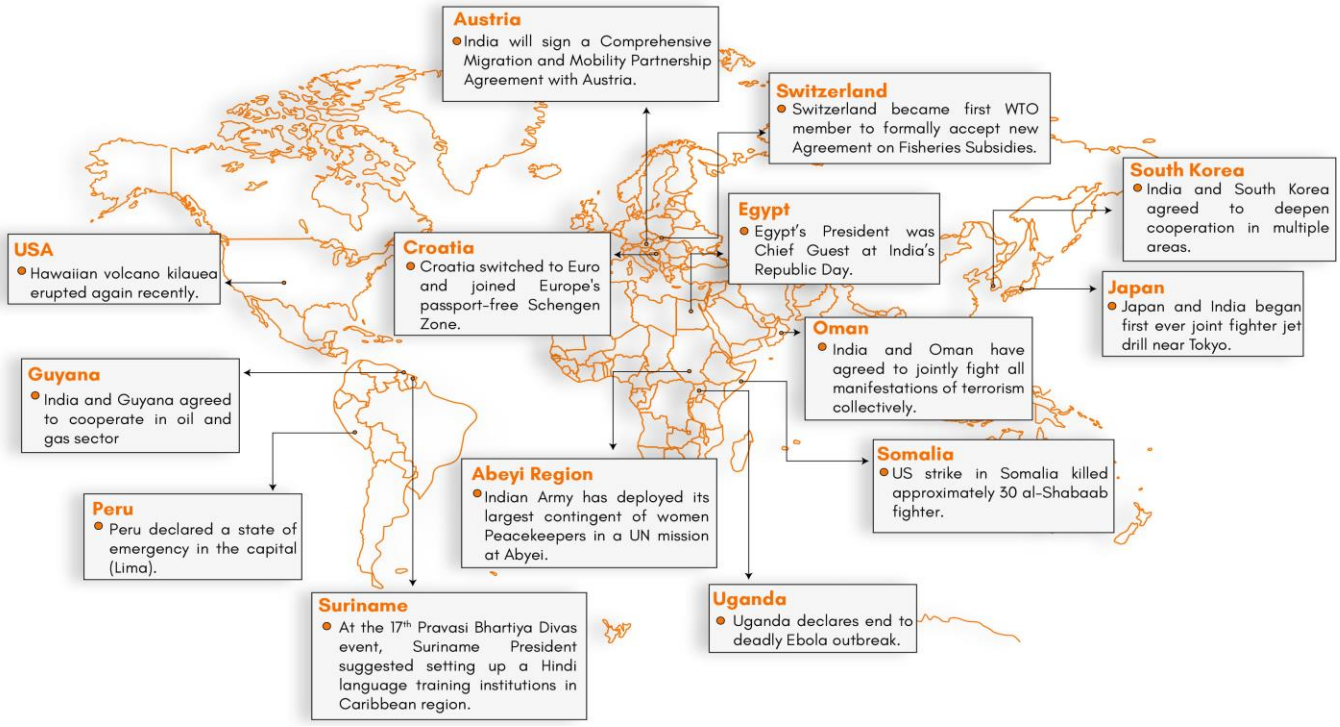
Objective	Key features

• To provide **functional household tap connections (FHTC) by 2024 to every rural household.**
• To **prioritize provision of FHTCs** in quality affected areas, villages in drought prone and desert areas, Sansad Adarsh Gram Yojana (SAGY) villages, etc.
• To provide **functional tap connection to Schools, Anganwadi centres,** GP buildings, Health centres, wellness centres and community buildings
• To **monitor functionality of tap connections**.
• To promote and **ensure voluntary ownership among local community** by way of contribution in cash, kind and/ or labour and voluntary labour (shramdaan).
• To **empower and develop human resource** in the sector.
• To bring **awareness on various aspects and**
	• The program is implemented by the **Ministry of Jal Shakti** in collaboration with state governments.
	• **Key features**
	  ○ Shift of focus for water supply from **'habitations to households'**
	  ○ Focus on **'service delivery' & 'functionality'** – public utility
	  ○ **Community ownership** to ensure 'long-term sustainability' of water supply schemes
	  ○ **Central role of women and weaker sections** in managing water supply
	  ○ **Special focus on children** – piped water supply in schools, anganwadi centres and ashramshalas
	  ○ **Potable drinking water** in quality-affected habitations
	  ○ **Surveillance of water quality** by the local community involving women.
	• **Institutional mechanism for the implementation of JJM**
	  ○ National Jal Jeevan Mission (NJJM)
	  ○ State Water and Sanitation Mission (SWSM)
	  ○ District Water and Sanitation Mission (DWSM)
	  ○ Village Water & Sanitation Committee (VWSC)/ User Committee
	• **Components under JJM**
	  ○ Efforts should be made to **source funds from different sources/ programmes and convergence is the key**
	  ○ **Development of in-village piped water supply infrastructure** to provide tap water connection to every rural household.
	  ○ **Development of reliable drinking water sources** and/ or augmentation of existing sources to provide long-term sustainability of water supply system
	  ○ Wherever necessary, **bulk water transfer**, **treatment plants and distribution network** to cater to every rural household
	  ○ **Technological interventions** for removal of contaminants where water quality is an issue

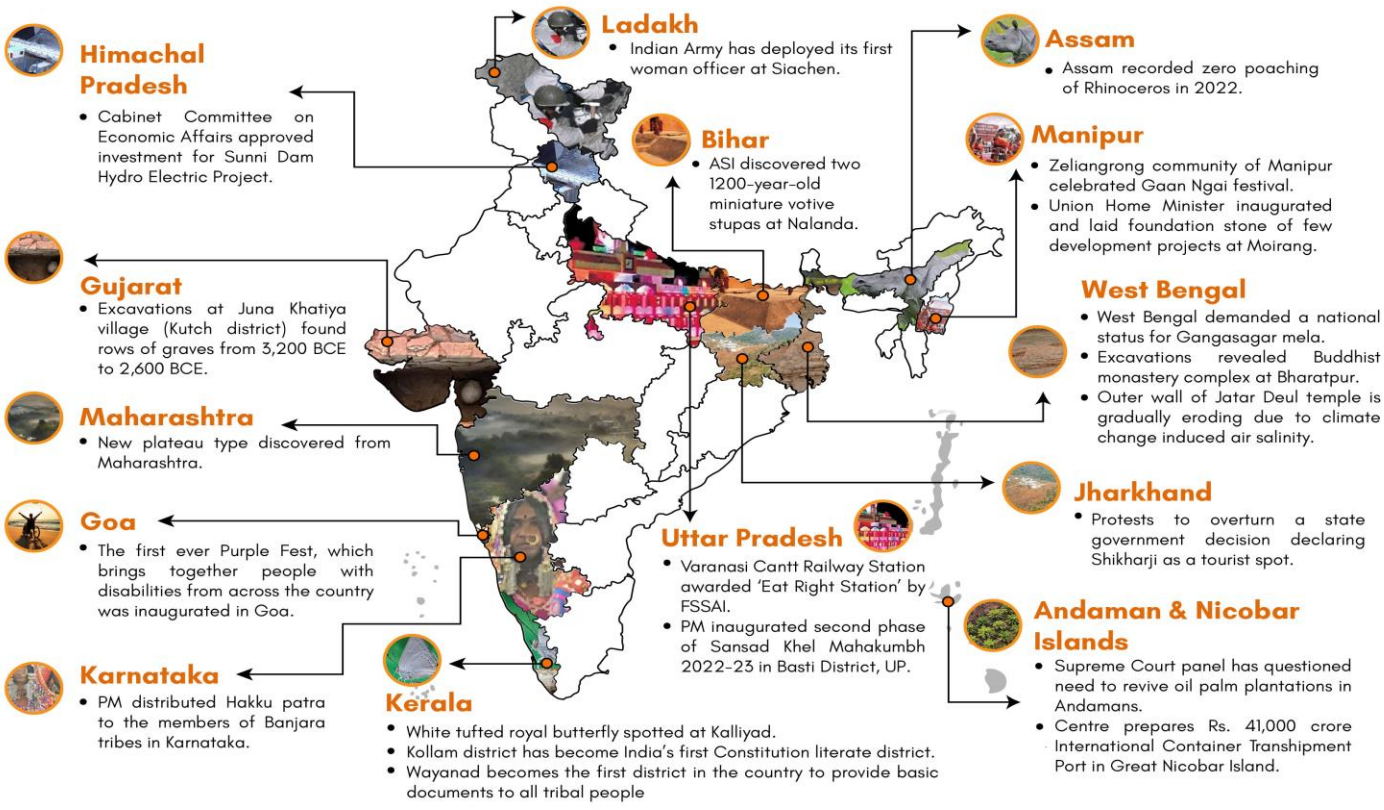
significance of safe drinking water.	○ **Retrofitting of completed and ongoing schemes** to provide FHTCs at minimum service level of 55 lpcd; ○ **Greywater management** ○ **Capacity building** of various stakeholders and support activities to facilitate the implementation. • **Fund sharing pattern** ○ 100% for Union Territories without legislature ○ 90:10 for North Eastern & Himalayan States and UTs with legislature and ○ 50:50 for rest of the States. • **Water Quality Monitoring & Surveillance (WQM&S):** Under JJM, States/UTs can utilize upto 2% of their annual allocation of funds for WQM&S activities which includes setting up and strengthening of water quality testing laboratories, procurement of equipment, etc.



Places in News: World



Places in News: India



Personalities in News

Personalities	About	Ethical Values exhibited by the Personality

Thiruvalluvar	• Thiruvalluvar Day observed on 15 January as a part of Pongal celebrations to mark his birth anniversary.
	• He is also **known as Valluvar.** He was a **Tamil poet-saint and philospher.**
	  ▸ It is **belived that he was born in Mylapore**, a neighbourhood in present-day Chennai and flourished between 4th century and 6th century.
	  ▸ In early 16th century, a **temple was built within Ekambareswarar temple complex** in Mylapore and it was **dedicated to Thiruvalluvar.**
	  ▸ In 1976, a **temple-memorial called Valluvar Kotam** was built in Chennai and houses one of largest auditoriums in Asia.
	  ▸ **133-foot tall statue of Thiruvalluvar** stands at **Kanyakumari.**
	  ▸ He is **best known for his work — Tirukkural,** a collection of couplets on politics, love, ethics, and matters concerning economics.
		Commitment to ethical living
		• He wrote the first ever book on ethics in human history.
		• He described the importance of both professional and personal ethics in determining well-being of an Individual and society.

Rani Velu Nachiyar (1730 - 1796)	• Rani Velu Nachiyar, also known as **Veeramangai (brave women** in Tamil language) was **daughter of King Chellamuthu Vijayaragunatha Setupathy of Ramanathapuram.** • She became the **queen of Sivaganga estate** (in present day Tamil Nadu) from **1780-1790.** • She built an **army of women called Udaiyaat.** • She was the **first queen to wage war against East India Company.** • She formed an **alliance with Hyder Ali** against British in 1780.	**Fortitude and Self-Confidence** • According to legend, Rani's self-confidence was so strong that she decided to take Britishers on herself but later after advised formed alliance with others and inflicted incalculable damage to the enemies. • A **trained fighter with proficiency in multiple languages** (English, French, Urdu etc.), she personifies **women empowerment** with virtues of **indomitable courage, bravery and strong determination**
Veer Narayan Singh	• Government of Chhattisgarh named **"Shaheed Veer Narayan Singh International Cricket Stadium"** to honour him. • He was a **landlord from Sonakhan, Chhattisgarh.** • He **spearheaded the 1857 war in Chhattisgarh**. He is also considered as **"The 1st Chhattisgarhi freedom fighter".** • His **ancestors were from the Gond tribe**. Later on, they changed their affiliation from the Gond to the Binjhwar tribe .	**Determination and courage** • Despite facing significant challenges and obstacles, Veer Narayan Singh remained determined in his efforts to fight against British army in Chhattisgarh and bring about change. • The British arrested him in 1856 for looting a trader's grain stocks and distributing it amongst the poor in a severe famine year.
Mannathu Padmanabhan (1878- 1970)	• He was **born in Perunna** village in Kottayam district of **Kerala.** • He started his career as a **teacher in 1893** and started **practicing law in Magistrates Courts.** • In 1915, he formed **Nair Service Society** for **providing modern education, positive outlook, a sense of purpose** and competitive edge to community. • He joined Indian National Congress in 1947 and took part in **Travancore State Congress agitation.** • He was honoured with **Padma Bhushan in 1966 and Title Bharata Kesari.**	**Social Reform and Community Empowerment:** • He was a strong advocate for social reform and worked to end the caste-based discrimination and inequalities that existed in Kerala. • He believed in empowering the Nair community and worked to improve their educational and economic status.

Satyendra Nath Bose (1894- 1974)

- **His 129th birth anniversary** was celebrated on 1st January.
- **Key achievements**
  - **His work involves theoretical physics** and he has made some fundamental conceptual contributions in **development of Quantum Mechanics and Quantum Statistics.**
  - **He went on to work with Einstein** and together they developed **Bose-Einstein statistics.**
  - **Derived Planck's law for black body radiation** (which refers to spectrum of light emitted by any hot object) without any reference to classical electrodynamics.
  - **Joined laboratory of Maurice de Broglie** where he learnt techniques of **X-ray spectroscopy and crystallography.**
  - Was awarded **Padma Vibhushan in 1954.**

Scientific aptitude and Knowledge

- He consistently contributed through his research to the field of Quantum Mechanics.
- His research, later led to establishment of the S.N. Bose National Centre for Basic Sciences by an act of Parliament in Calcutta in 1986.

Copyright © by Vision IAS

All rights are reserved. No part of this document may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior permission of Vision IAS.

WEEKLY FOCUS

Weekly Focus Topic Descriptions

ISSUE	DESCRIPTION	READ MORE
Capital Market in India: Channelling Finance for Growth	Indian capital markets have shown tremendous growth in the post Liberalization era and remained one of the most resilient globally. As global economy moves for imminent recovery, raising capital is a strategic priority across India and role of Capital Markets has assumed far greater importance and urgency. This document attempts to discuss the structure and role of capital market and analyses the steps that need to be taken so as to overcome the challenges faced in tapping the potential of capital markets in India.	
Understanding India's Economic Diplomacy	With the unfurling of the era of liberalisation and globalization, India brought significant alterations in its economic policies, particularly those pertaining to foreign trade. This was the beginning of the saga of Indian business enterprises playing crucial role in advancing India's economic interests abroad. This document seeks to provide an understanding of the tenets of economic diplomacy and the extent to which India, is cementing economic relationships around the world.	
Constitutional Ethos: Democracy for Social and Economic Welfare	The Constitution of India aims to create a Moral Code of Conduct in our society and governance. As part of it, it pledges to secure Justice through principles like Democracy and Socio-Economic Welfare. This document seeks to explore the application of these principles in the Indian context, their interactions with other values, associated concerns and way to collective achievement of the idea of Justice.	
Future of Food: Food Sustainability for 8 billion populace	To feed 10 billion persons by 2050, we need to get the trade-offs right between sustainability, food security, food safety, and make better use of food already produced. However, our food systems are failing to produce the foods essential for healthy diets in sufficient quantity and at affordable prices. They are also driving degradation of the natural environment – soil, water and air quality, biodiversity loss and climate change. This document explores the meaning of and need for a sustainable and resilient food system for humanity's future.	

VISIONIAS
INSPIRING INNOVATION

Stay in touch with Your Preparation

FOLLOW US ON SOCIAL MEDIA

/c/VisionIASdelhi

/VisionIAS_UPSC

/vision_ias

/Vision_IAS

/visionias.upsc

8 IN TOP 10 SELECTIONS IN CSE 2021

from various programs of VisionIAS

CIVIL SERVICES EXAMINATION 2020

1 AIR

SHUBHAM KUMAR

2 AIR

ANKITA AGARWAL

3 AIR

GAMINI SINGLA

4 AIR

AISHWARYA VERMA

5 AIR

UTKARSH DWIVEDI

6 AIR

YAKSH CHAUDHARY

7 AIR

SAMYAK S JAIN

8 AIR

ISHITA RATHI

9 AIR

PREETAM KUMAR

YOU CAN BE NEXT

HEAD OFFICE Apsara Arcade, 1/8-B, 1st Floor, Near Gate 6, Karol Bagh Metro Station
+91 8468022022, +91 9019066066

Mukherjee Nagar Centre
635, Opp. Signature View Apartments, Banda Bahadur Marg, Mukherjee Nagar

DELHI

JAIPUR 9001949244 | **HYDERABAD** 9000104133 | **PUNE** 8007500096 | **AHMEDABAD** 9909447040 | **LUCKNOW** 8468022022 | **CHANDIGARH** 8468022022 | **GUWAHATI** 8468022022

/c/VisionIASdelhi /vision_ias /visionias_upsc /VisionIAS_UPSC