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Note:

- In our endeavour to further enhance the document in the interest of the aspirants, following additions have been incorporated:
  1. Different colours have been used in the document for easy classification and recollection of a variety of information.
  2. QR based Smart quiz has been added to test the aspirant's learnings and understanding.
  3. Infographics have been added to ease understanding, provide for smoother learning experience and ensure enhanced retention of the content.

This document also includes a section providing update on the Government schemes in news.

SMART QUIZ

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

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1. POLITY AND CONSTITUTION

1.1. 97TH CONSTITUTION AMENDMENT ACT, 2011

Why in news?

A three-judge bench of the Supreme Court annulled part of the 97th Amendment Act and Part IX B of the Constitution which governs the "Cooperative Societies" in the country.

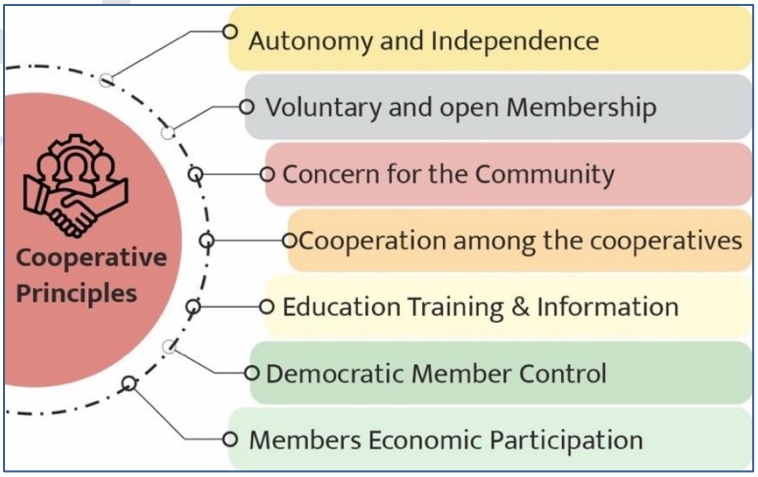
- **97th Amendment Act:** This Amendment Act relates to effective management of co-operative societies in the country. The change in the Constitution has **amended Article 19(1)(c)** to give protection to the cooperatives and **inserted Article 43 B and Part IX B,** relating to them.
  - **Article 19(1)(c):** It guarantees **freedom to form association or unions or cooperative societies** subject to certain restrictions.
  - **Article 43 B:** It says that **states shall endeavor to promote** voluntary formation, autonomous functioning, democratic control and professional management of **cooperative societies.**
  - **Part IXB of the Constitution:** It dictated the terms for running co-operative societies. It went to the extent of determining the number of directors a co-operative society should have or their length of tenure and even the necessary expertise required to become a member of the society.

More on news

- **'Cooperatives' is a 'State' subject.** However, the 97th Amendment Act was passed by the Parliament **without getting them ratified by State legislatures as required by the Constitution.**
- The Court declared that **Part IXB of the Constitution is operative only insofar as it concerns multi-State cooperative societies** both within the various States and in the Union Territories.
- The SC has held that **co-operative societies** come under the **"exclusive legislative power" of State legislatures.**

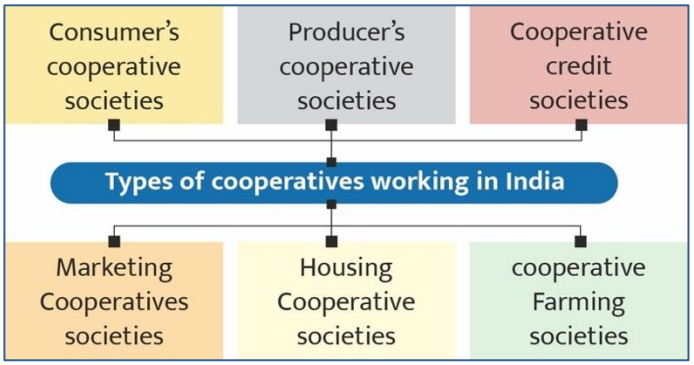
About Co-Operatives

- It is a **voluntary association of individuals** having common needs, who join hands **for attainment of common economic goals** and interests.
- Through formation of cooperatives, **people come forward as a group, pool their individual resources, utilise them in the best possible manner, and derive some common benefit out of it.**
- In a cooperative society, **people can enter it as per their wish** and they are free to leave a cooperative society, but they **cannot transfer their share.**
- Few examples of **successful co-operatives in India** are- Indian Coffee House, Self Employed Women's Association etc.



History of the cooperative movement

- **The cooperative movement first began in 1844 in Britain by 28 weavers.**
  - The first cooperative society was initiated by **Robert Owen in 1844 A.D. named "Rochdale Society of Equitable Pioneers".**



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- The main objective of this society was **to save poor people by providing goods at a lower price** from the market price, eliminate the middleman and supply better services to its members.

- In India, **Sir Frederic Nicholson,** who studied the problems of farmers after Madras famine**,** published a report in 1895 which led to establishment of cooperative agricultural credit societies and cooperative banks in India and **paved the way for the 'Cooperative movement'**.
  - Therefore, Sir Frederic Nicholson is known as **'Father of the Cooperative Movement'** in the country.

Recent Steps taken to promote co-operative culture

- New **Ministry of Co-operation** to streamline the co-operative movement in India.
  - Prior to this move, the Ministry of Agriculture and Farmers Welfare had the **Department of Agriculture, Cooperation and Farmers' Welfare** for the cooperative movement in the agricultural sector.
- The **Banking Regulation (Amendment) Act, 2020** which gives RBI the powers to supercede boards of Co-operative Banks and enables mergers and acquisitions in public interest.

1.2. CASTE CENSUS

Why in news?

Recently various political parties demanded to have a caste-based enumeration in the 2021 Census.

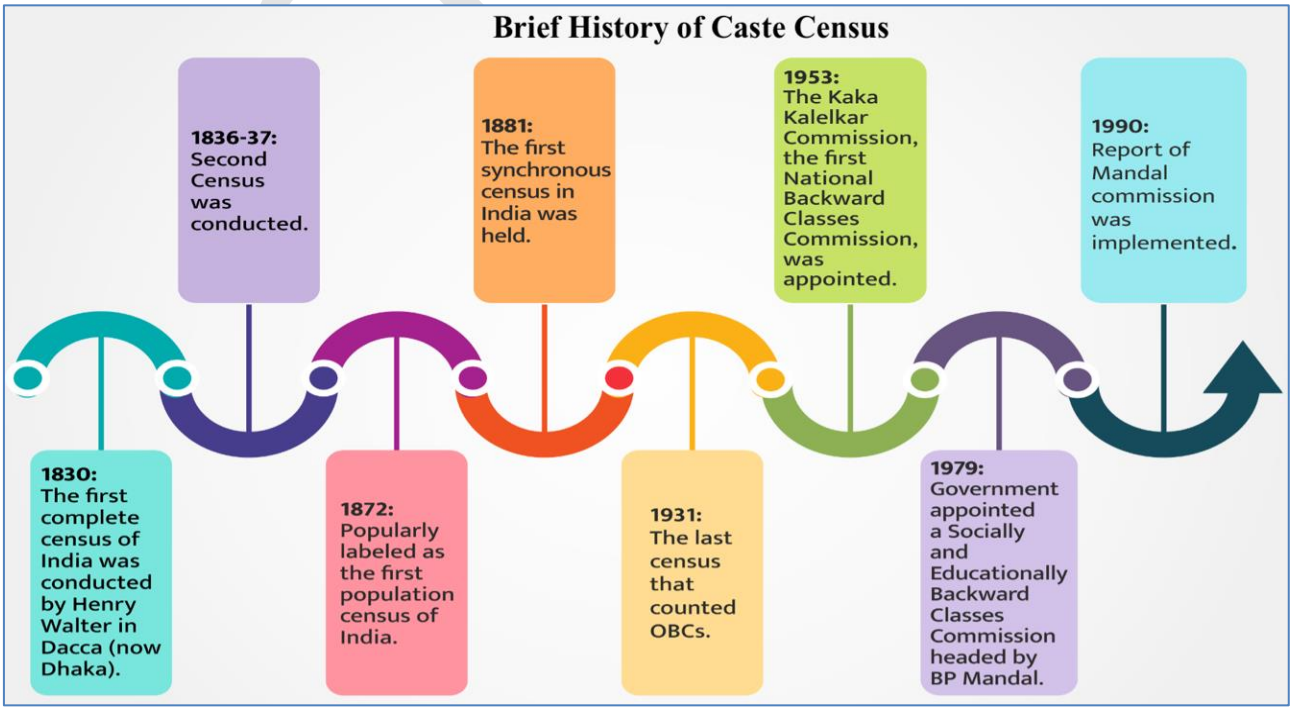
What is a caste census?

- Caste Census is the **caste-wise tabulation of population** in the census exercise.
- First introduced by the British from the 1881 census, the 1931 census is the last published caste census of India with population figures based on caste. The practice was stopped by the British in 1941 and the post 1947, the government did not revive it.
- While India publishes separate data on Scheduled Castes (SC) and Scheduled Tribes (ST), since the first exercise in independent India in 1951, the **Census does not include data on other castes**.

Previous attempts towards a Caste Census

Socio-Economic Caste Census (SECC), 2011

- This was a **distinct exercise from the Census of 2011.**
- It is a study of **socioeconomic status** of rural and urban households and allows **ranking of households based on predefined parameters.**
- It had **three census components**.
  - **Census in Rural Area:** Department of Rural Development (DoRD).
  - **Census in Urban areas:** The Ministry of Housing and Urban Poverty Alleviation (MoHUPA).
  - **Caste Census:** The Ministry of Home Affairs, Registrar General of India (RGI) and Census Commissioner of India.
- It provides information like- **structure of the houses of household** (Kuccha or Pucca), **ownership status, main source of income** among others. But the entire SECC data has not been made public.
- **Utility:** In 2017, Centre replaced poverty line, as the main instrument for identification of beneficiaries and transferring of funds for



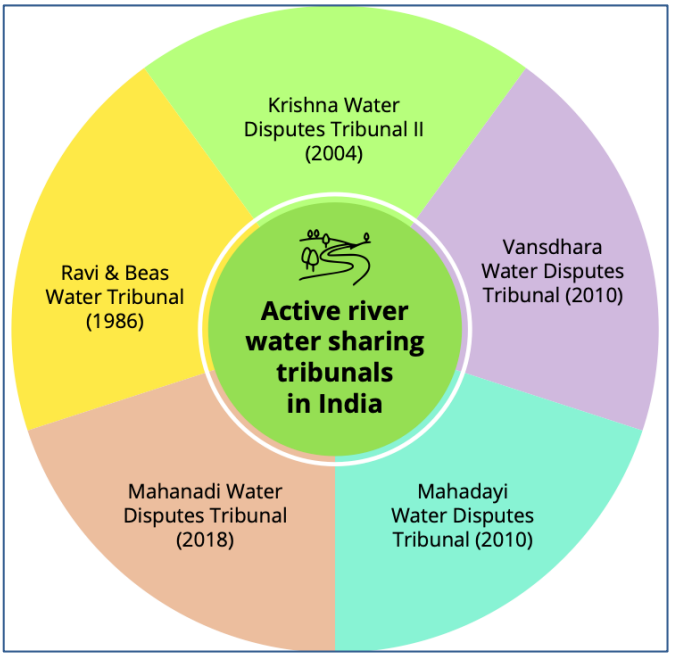
1.3. INTER STATE RIVER DISPUTE

Why in news?

Recently, the **Ministry of Jal Shakti** has notified the jurisdiction of **Godavari River Management Board (GRMB)** and **Krishna River Management Board (KRMB)** under the **Andhra Pradesh Reorganization Act (APRA) of 2014.**

Constitutional provisions for Inter State River water disputes

- **Under Seventh schedule:**
  - **Entry 17 of State List deals with water** i.e., water supply, irrigation, canal, drainage, embankments, water storage and water power.
  - **Entry 56 of Union List** gives power to the Union Government for the **regulation and development of inter-state rivers and river valleys** to the extent declared by Parliament to be expedient in the public interest.
- **Article 262** provides for the **adjudication of disputes or complaint relating to waters of inter-State rivers** or river valleys.



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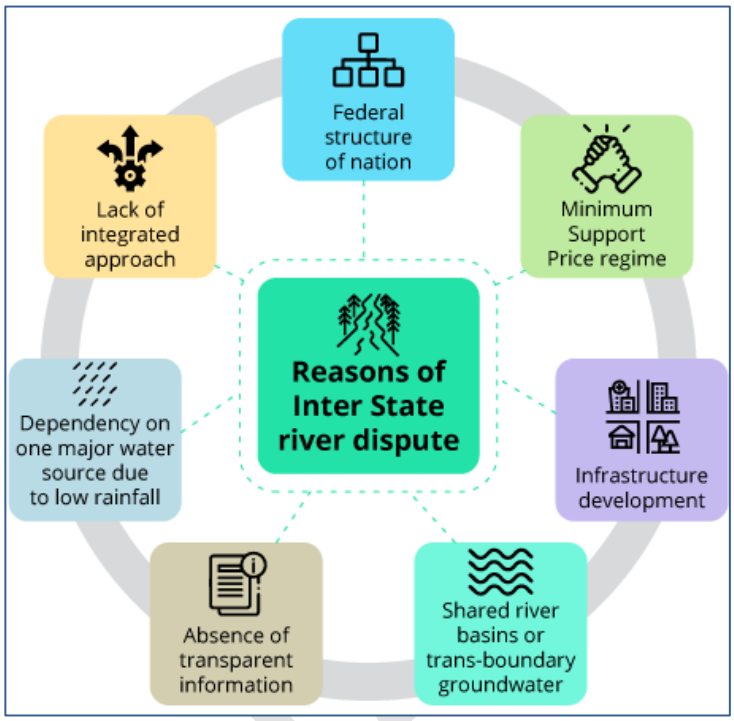
- Parliament by law provides that **neither the Supreme Court nor any other court is to exercise jurisdiction** in respect of any such dispute or complaint.



Steps taken by government to minimize the Inter- State River disputes

- Parliament has enacted two laws:
  - **River Boards Act, 1956**, provides for the **establishment of River Boards**, for the regulation and development of inter-State rivers and river valleys. River boards are established by central government on the request of the concerned state.
  - **Inter-State Water Disputes Act, 1956** empowers the central government to **set up tribunal** for the adjudication of inter- state river dispute. The **decision of the tribunal is final and binding** on the parties to the dispute.
- **Inter-State River Water Disputes (Amendment) Bill, 2019** to streamline the adjudication of inter-state river water disputes and make the present institutional architecture robust.
- **River Basin Management Bill, 2019**, proposes to establish a **River Basin Authority** for regulation and development of inter-state rivers and river basins.
- **National Water Informatics Centre (NWIC)** has been established under **National Hydrology Project** to **maintain a comprehensive water resources data** and collaborate with leading research institutes to provide technical support to central and state organizations dealing with water emergency response of hydrological extremes.
- A web-based **Water Resources Information System (India WRIS)** has been set up and all unclassified data of Central Water Commission and Central Ground Water Board have been uploaded on the website.

1.4. JUVENILE JUSTICE (CARE AND PROTECTION OF CHILDREN) AMENDMENT BILL, 2021

Why in news?

Parliament passed Juvenile Justice (Care and Protection of Children) Amendment Bill, 2021, which seeks to amend the Juvenile Justice Act, 2015.

Brief Background

- A juvenile is a **person less than 18 years** of age. The Juvenile Justice (Care and Protection of Children) Act, 2015 addresses **children in conflict with law and children in need of care and protection.** It provided for the **trial of juveniles in conflict with law in the age group of 16-18** years as adults in certain cases.
- The Act was brought to **replace the Juvenile Delinquency Law and the Juvenile Justice (Care and Protection of Children Act) 2000.**
- It fulfils India's commitment as a signatory to the **United Nations Convention on the rights of the child, the Hague Convention on Protection of Children and Co-operation in respect of Inter-country Adoption (1993)**, and other related international instruments.
- The recent amendment has been brought based on a **report filed by the NCPCR** in 2018-19 in which the over 7,000 Child Care Institutions (or children's homes) were surveyed and **several inadequacies** prevailing in the system were highlighted.

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Changes made by the Bill

	Related Provisions in JJ Act,2015	Features of Bill
Adoption	• Adoption of a child is final once a **civil court** issues an adoption order.	• **District Magistrates, including Additional District Magistrates**, can issue adoption orders (both for intra-country and intercountry adoptions) in order to ensure **speedy disposal** of cases and enhance accountability. • **Additional functions of DM:** o Empowers the DM including ADM to **effectively coordinate and monitor the functions of various agencies** responsible for implementation of the provision of the principal act. o They have been empowered to **supervise the District Child Protection Units and Special Juvenile Protection Units,** and conduct a **quarterly review** of the functioning of CWC, JJ Boards.
Appeals	• There will be **no appeal for any order made by a Child Welfare Committee** concluding that a person is not a child in need of care and protection.	• The Bill **removes** this provision. • Any person **aggrieved by an adoption order** passed by the district magistrate may file an **appeal before the Divisional Commissioner,** within 30 days of such order. Such appeals **should be disposed within four weeks** from the date of filing of the appeal.
Serious Offences	• Offences committed by juveniles are categorised as: o **Heinous offences** (those with minimum punishment of seven years of imprisonment under IPC or any other law), o **Serious offences** (three to seven years of imprisonment), and o **Petty offences** (below three years of imprisonment). • Juvenile Justice Board will **inquire about a child** who is accused of a serious offence.	• **Redefines 'serious offences'** to include such offences for which the punishment is: o Minimum imprisonment for a term of 3-7 years; o Maximum imprisonment for a term more than 7 years but no minimum imprisonment or minimum imprisonment of less than 7 years. • This has been done to **give effect to recommendation of Supreme court** in Shilpa Mittal v. State of NCT of Delhi case.
Designated Court	• Offences against children that are punishable with **imprisonment of more than seven years,** will be tried in the **Children's Court** (equivalent to a Sessions Court). • Other offences (punishable with imprisonment of less than seven years) will be **tried by a Judicial Magistrate.**	• Provides that **all offences** under the Act **will be tried in the Children's Court.**
Offences against children	• An offence under the Act, which is **punishable with imprisonment between three to seven years** will be cognizable (where arrest is allowed without warrant) and non-bailable.	• Such offences will be **non-cognizable** and non-bailable.
Child Welfare Committees (CWCs)	• States must constitute **one or more CWCs for each district** for dealing with children in need of care and protection. • Provides **certain criteria for the appointment** of members to CWC. For instance, a member should be:	• Stipulate certain **additional criteria for appointment of CWC members.** • No person shall be eligible for selection as a member of the CWC, if he: o Has any **past record of violation** of human rights or child rights. o Has been convicted of an offence involving **moral turpitude,** and such conviction has not been reversed or has not been granted full pardon in respect of such offence.

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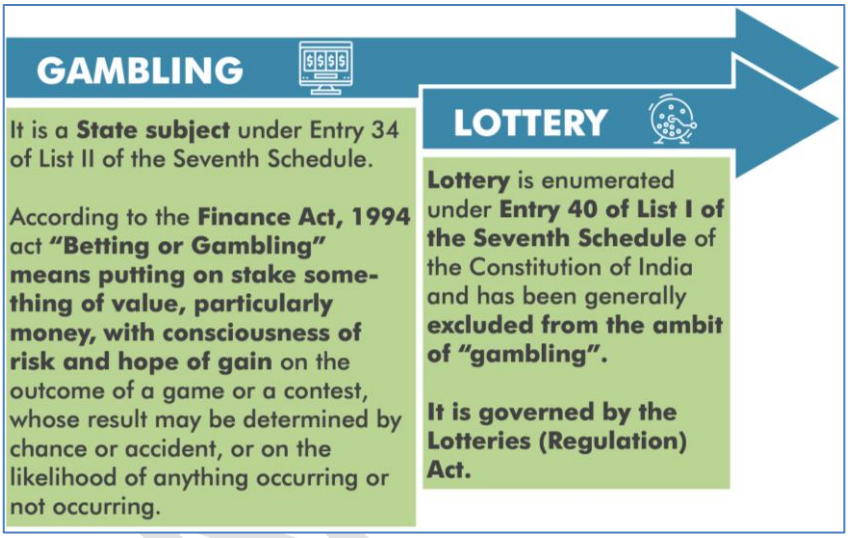
	○ involved in health, education, or **welfare of children** for at least seven years, or ○ a practising professional with a **degree in child psychology, psychiatry, law, or social work.**	○ Has been **removed or dismissed from service** of the Government of India or State Government or an undertaking or corporation owned or controlled by Government of India or State government. ○ Has ever indulged in **child abuse or employment of child labour or immoral act.** ○ Is part of **management of a child care institution** in a district.

1.5. GAMBLING

Why in news?

Recently, a plea in Delhi High Court sought appropriate steps to prohibit online gambling websites.



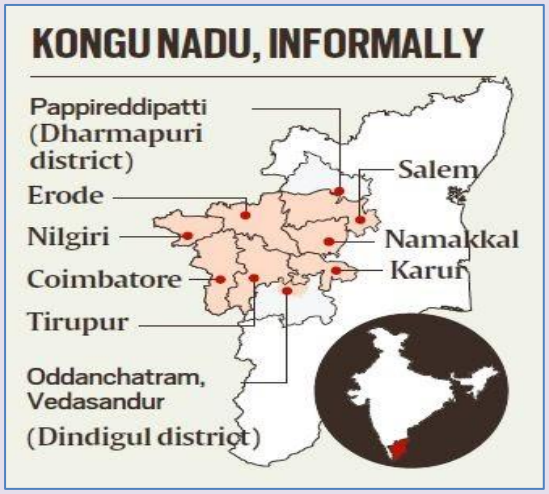
Legal position of gambling in India

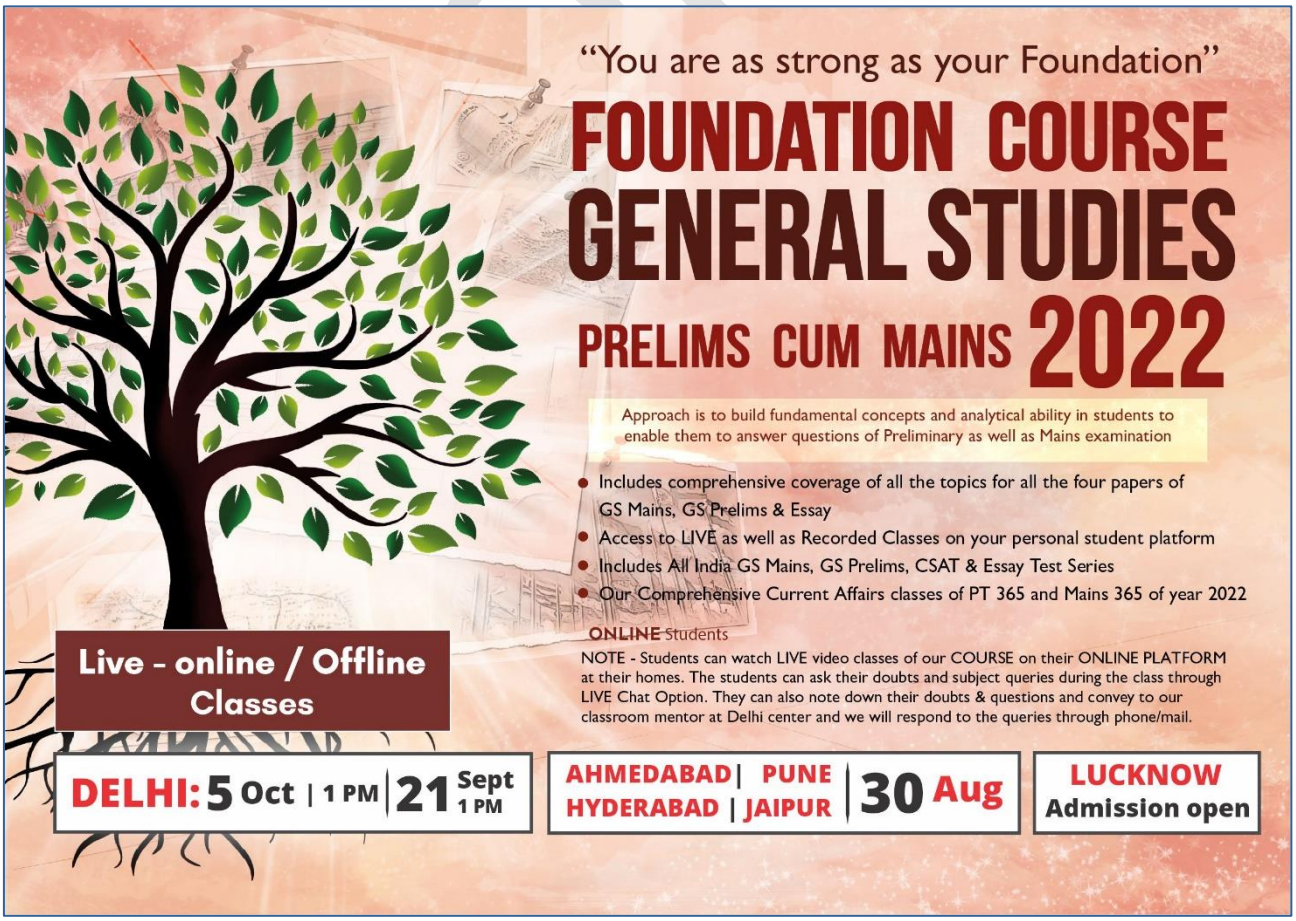
- **Horse racing is legal in India.** Horse racing involves some prior skills so it isn't all about gambling.
- **Several Indian states have legalized lotteries.** These are Goa, Kerala, Arunachal Pradesh, Assam, Maharashtra, Madhya Pradesh, Mizoram, Manipur, Meghalaya, Punjab, Nagaland, West Bengal, and Sikkim.
- **Online gambling and land-based casinos are legalized in Goa, Sikkim, Nagaland, and Daman** under the Public Gambling Act, 1976.
- **Maharashtra has prohibited gambling** and considers gambling as illegal under the Bombay Prevention of Gambling Act, 1887.
- **E-gaming (games of chance) has been legalized in Sikkim and Nagaland.**
- **Telangana and Arunachal Pradesh** consider **the game of skill as illegal** as per the Telangana State Gaming Act, 1974.
- **All India Gaming Federation, The Rummy Federation, and Federation of Indian Fantasy Sports have adopted a self-regulation code** for all their advertisements.

1.6. OTHER IMPORTANT NEWS

The Constitution (One Hundred and Twenty-Seventh Amendment) Bill, 2021	• Aim of the bill is **to clarify some provisions in the 102nd Constitutional Amendment Act, 2018** to help **restore power of states to identify backward classes.** • **102nd CAA, 2018** had given **constitutional status to the National Commission for Backward Classes (NCBC)** under **Article 338B.** ○ **It also inserted two new articles** - **Article 324A** which deals with Central List of the socially and educationally backward classes and **article 366(26C)** which defines socially and educationally backward classes. ○ However, **issue arose when** while scrapping quota for Marathas, **Supreme Court ruled that after 102 CAA 2018, only the Centre can notify socially and educationally backward classes, not the states.** • In India, **separate OBC lists** are drawn up by the Centre and each state concerned since 1993. ○ **Articles 15(4), 15(5) and 16(4) expressly conferred power on a state** to identify and declare the list of socially and educationally backward classes • Thus, by amending 338B, 324A and 366(26C), the **127th Amendment Bill seeks to clarify that State Government and Union territories are empowered** to prepare and maintain their own State List/ Union territory List of SEBCs.
Section 66A of the IT act	• Recently, Supreme Court (SC) **expressed shock at the police still registering cases under section 66A.** • **In March 2015,** Section 66A was struck down by **SC (Shreya Singal vs Union of India Case).**

	○ Section 66(A) criminalized sending of offensive messages through a computer or other communication devices. • SC had observed that that **Section 66A arbitrarily, excessively and disproportionately invades the right of free speech** and upsets the balance between such right and the reasonable restrictions that may be imposed on such right.
Kongu Nadu	• It is a **commonly used name** for **part of western Tamil Nadu**, deriving its name from **Kongu Vellala Gounder** (an OBC community prominent in the region). • Ancient Tamil literatures like Silappathikaram and Sangam age poems mention Kongu region. ○ The word **'Kongu' refers to undulating land** which cannot be used for anything. • From the **second century to the ninth century, a major part of Kongu region was conquered and brought under the rule of the Ganga dynasty**. ○ Most of them were **followers of Jainism.**





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2. INTERNATIONAL RELATIONS

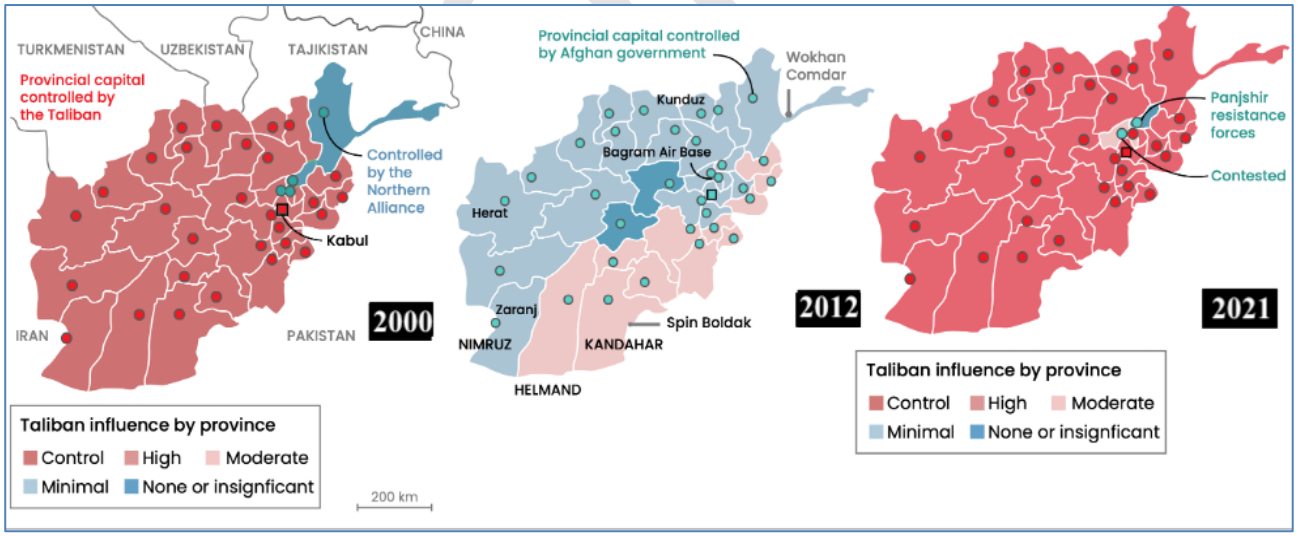
2.1. TALIBAN CONTROL OVER AFGHANISTAN

Why in news?

The Taliban have seized power in Afghanistan and captured Kabul triggered by the U.S. withdrawal.

Background

- On February 29, 2020, the United States and the Taliban signed an agreement in Doha to end the war in Afghanistan.
- US president Joe Biden had set the date of 31 August 2021 for final withdrawal of all US troops from Afghanistan.
- The Taliban and their several allied militant groups began their offensive in May 2021, simultaneous with the withdrawal of most U.S. troops from Afghanistan.
- The Taliban militants entered Kabul on August 15 and sought the unconditional surrender of the central government.



About Taliban

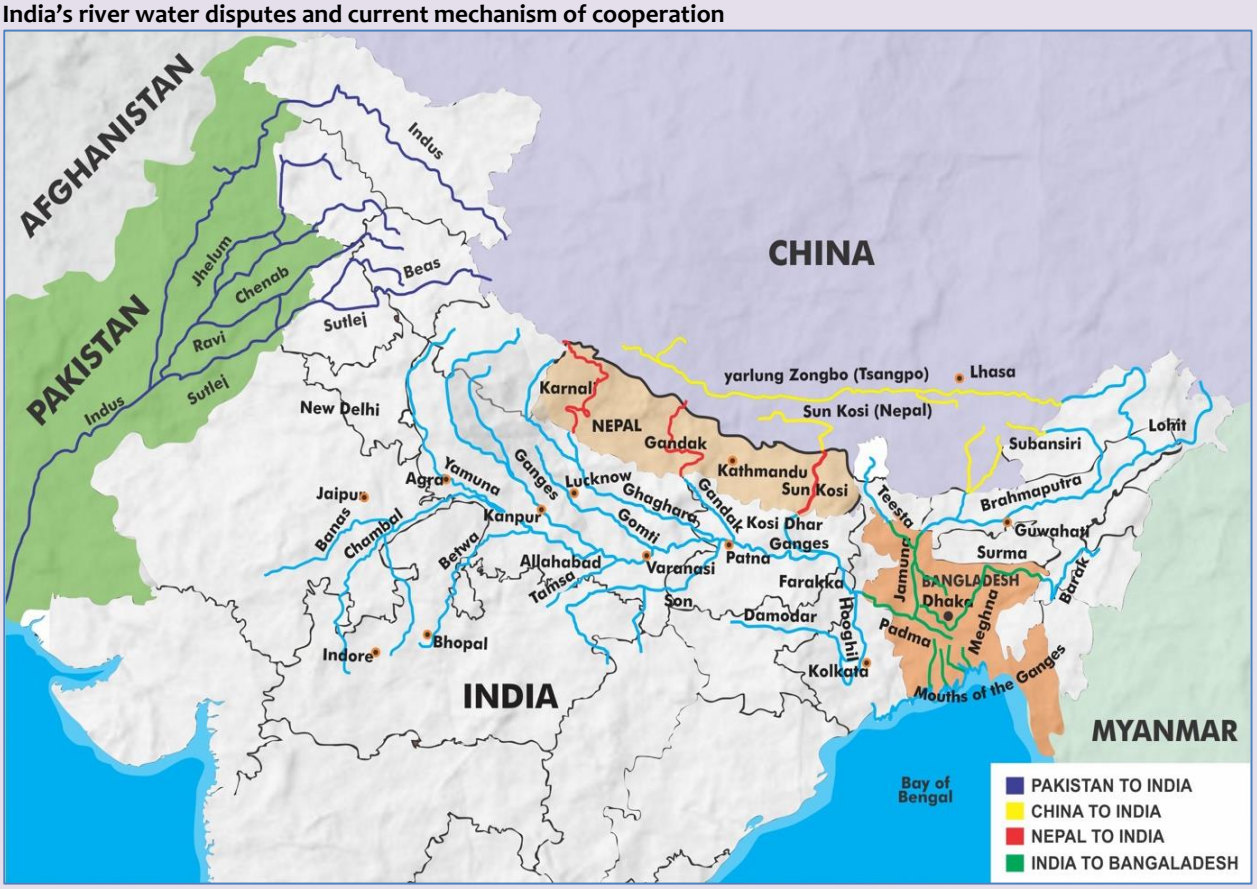
- The Taliban, which means "students" in the Pashto language, emerged in 1994 around the southern Afghan city of Kandahar.
- It was one of the **factions fighting a civil war for control of the country following the withdrawal of the Soviet Union in 1989** and subsequent collapse of the government in 1992.
- By 1998, it had taken control of almost all of the country and were only removed from power by US-led forces in 2001.
- During their rule, they enforced their own hard-line version of Sharia, or Islamic law, accompanied by introduction of brutal punishments, restricting women's right to education and free movement, banning of music and cinema etc.

2.2. CROSS BORDER FLOOD MANAGEMENT

Why in news?

The recent flooding in north Bihar (the Mithilanchal region) indicates that flood control in Bihar is contingent upon inter-governmental river-basin cooperation between India and Nepal.

India's river water disputes and current mechanism of cooperation



Countries	Mechanism for cooperation
India-Nepal	• **The Kosi Treaty of 1954,** under which the embankments in Nepal were established and maintained. • **The Mahakali Treaty** pertains to sharing water of a river by the same name.
India-Pakistan	• **Indus Waters Treaty of 1960** allocated three western rivers (the Indus, Chenab and Jhelum) to Pakistan, and the three eastern rivers (Ravi, Beas and Sutlej) to India.
India-China	• **Memorandum of Understanding** upon provision of Hydrological Information of the **River Brahmaputra.** • **Memorandum of Understanding** on Hydrological Data Sharing on **River Sutlej**. • **Expert-Level Mechanism** to discuss interaction and cooperation on provision of flood season hydrological data and emergency management.
India-Bangladesh	• The **Ganges Treaty** is an agreement to share surface waters at the Farakka Barrage near their mutual border. • System of **Transmission of flood forecasting data** on major rivers like **Ganga, Teesta, Brahmaputra, and Barak during** the monsoon season.
India-Bhutan	• **Comprehensive Scheme for Establishment of Hydro-meteorological and Flood Forecasting Network** on rivers Common to India and Bhutan. • A **Joint Group of Expert (JGE) on Flood Management**.

2.3. OTHER IMPORTANT NEWS

India-US Renew Global Develop-ment	• India and the US renewed a global development partnership agreement that provides for jointly **offering assistance to their partner countries**. o Both sides signed amendment to the **Statement of Guiding Principles (SGP) on Triangular Cooperation** for Global Development, extending the **pact's validity up to 2026.**

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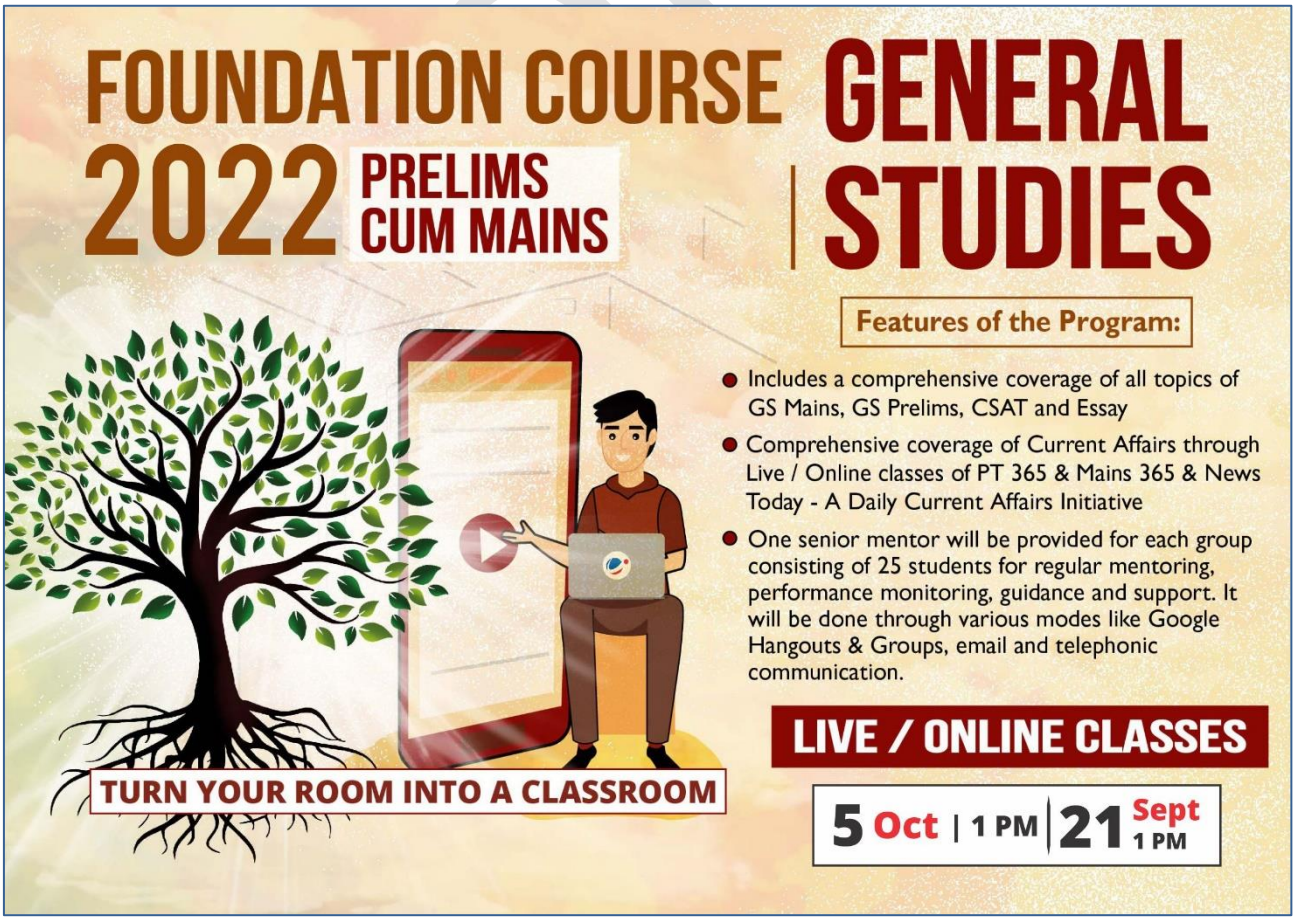
Partner-ship Deal for 5 Years	○ **Feed The Future India Triangular Training Program (FTF ITT) for Africa** is an example of a project under this. ○ The SGP agreement **was initially signed in 2014**and renewed in 2019 till 2021**.** • **Triangular cooperation** ○ Triangular cooperation **involves three actors (see infographic), two from the South (Facilitating and Beneficiary partner) and one from the North (pivotal partner)**. The latter can also be an international multilateral organization. ○ The **division of "North" and "South" is used to refer to the social, economic and political differences** that exist between developed countries (North) and developing countries (South). • **India's other triangular Cooperation examples** ○ **India-Japan Cooperation: Asia–Africa Growth Corridor (AAGC).** ○ The **India–Tr**iangular in the form of project called **"Supporting India's Trade Preferences for Africa" (SITA)**, funded by the DFID (UK's Department for International Development).
Centre to appoint National Maritime Security Coordinator (NMSC)	• Two decades after the recommendation by the Kargil Review Committee, the government is set to appoint a NMSC with the objective of enhancing India's security architecture and energy security. • **About NMSC** ○ **Interface between the civilian and military maritime** domains. ○ Will work **under the National Security Adviser (NSA)** ○ It will be the **principal advisor** to the government on maritime security domain. • Maritime security is a general term for the p**rotection of vessels both internally and externally**. ○ The areas from which ships and maritime operations need protecting include **terrorism, piracy, robbery, illegal trafficking of goods and people, illegal fishing and pollution.** • **Significance of NMSC** ○ **Improve efficiency** as Navy, Coast Guard and state maritime boards all tend to work in silos with overlapping jurisdictions and are constantly at odds with each other. ○ **Maritime and energy security** as China plans to reach to eastern sea board of Africa through Indian maritime domain. ○ Creation of NMSC is **part of Act East Policy vision that also includes SAGAR** (Security and Growth of All in the Region), the **Deep Ocean Mission, and the Sagarmala project.**

Place	News	S. No on map
Mount Merapi	The most volatile and active volcano in Indonesia recently erupted.	1
Haiti	Recently, a 7.2 magnitude earthquake occurred here.	2
Kilauea Volcano (Hawaii, USA)	Scientists noticed a surge of earthquakes and the ground swelling at the Kilauea's summit.	3
Taiwan	QUAD includes Taiwan strait in talks	4
Srilanka	Katchatheevu is an uninhabited volcanic islet in the Palk Strait. Fishermen Issue on this island is a recurrent challenge in Indo-Srilanka Relations.	5
Defence Exercises	**Exercise Cutlass Express 2021** with 12 Eastern African countries, US, UK,	6A
	India and various international organisations **US navy led Southeast Asia Cooperation and Training (SEACAT) military exercise** in Singapore. India also participated in it.	6B
	Zayed Talwar exercise between India and UAE.	6C
	Operation Devi Shakti - India's evacuation mission from Afghanistan.	6D



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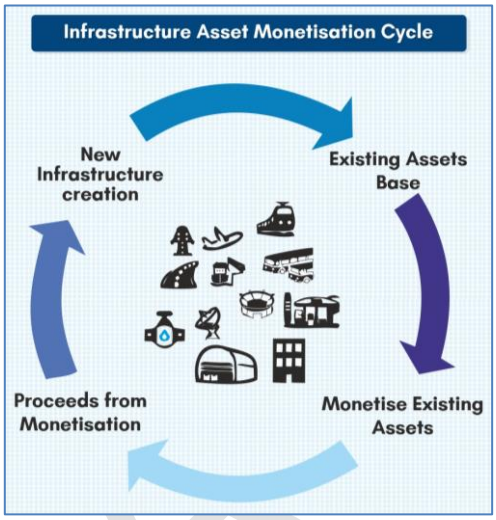
3. ECONOMY

3.1. FISCAL POLICY

3.1.1. NATIONAL MONETISATION PIPELINE



Why in news?

Recently, the government of India has launched the **National Monetisation Pipeline (NMP),** a roadmap for asset monetisation of various brownfield infrastructure assets across sectors**.**

About Asset Monetisation

- Asset monetization, as a concept, entails **offering public infrastructure to the private sector or institutional investors** through structured vehicles and mechanisms.
  - Hence, monetization is **distinct shift from 'privatization'** or 'structured partnerships' with the private sector within defined contractual frameworks.
- It consists of **limited period transfer of Brownfield Infrastructure Assets** (where investment is already being made, but assets are either languishing or not fully monetized or under-utilized) to unlock "idle" capital.
- Under the Union Budget 2021-22, Monetization of Assets has been **identified as one of the three pillars for enhanced and sustainable infrastructure financing** in the country. Accordingly, National Monetisation Pipeline (NMP) has been planned to be co-terminus with the National Infrastructure Pipeline (NIP) that was announced in 2019.

Understanding the Difference

	Asset Monetisation	Disinvestment	Strategic Disinvestment	Privatisation
Meaning	Government cedes control over its assets for a certain period of time, after which the assets must be returned to the government unless the lease is extended.	Govt shareholding in an asset is reduced but remains >51%.	Sale of a substantial portion of the Government shareholding of up to 50%, or higher to either private or public entity.	Govt shareholding in an asset is <51%.
Ownership	Remains with the Govt.	Remains with the Govt.	Transferred to Public/Private Entity.	Transferred to Private Entity.
Management Rights	Temporarily Transferred to Private Entity	Remains with the Govt.	Transferred to Private Entity.	Transferred to Private Entity.

About National Monetisation Pipeline (NMP)

- NMP will help in **evolving a common framework for monetisation of core assets.** (Monetization through **disinvestment and monetization of non-core assets** have **not been included** in the NMP).
  - **Core and Non-Core Assets:** Assets which are central to the business objectives of an entity and are used for delivering infrastructure services to the public/ users

Objectives of the National Monetisation Pipeline

- Brings out clearly the scale of financing through asset monetization.
- Phasing of the proposed monetization and the capital generated over the medium-term.
- Guidance on asset/project profile and method of monetization.
- Brief operational contours of the project/asset (Lane-kms of road, circuit km etc.)

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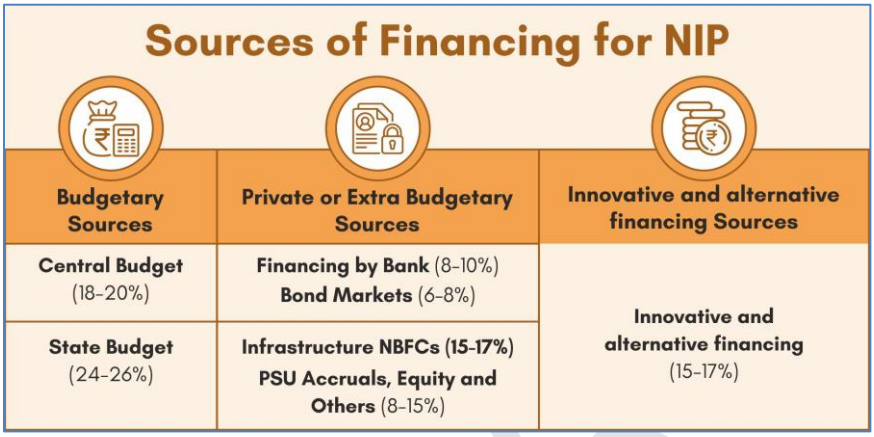
are considered as Core Assets. Other assets, which generally include land parcels and buildings, can be categorised as non-core assets.

- The **framework for monetisation** of core asset monetisation has three key imperatives:
  - **Monetisation of rights not ownership** which means the assets will have to be handed back at the end of transaction life.
  - **Brownfield de-risked assets with stable revenue generation profile and of critical importance.**
  - **Structured partnerships under defined contractual frameworks & transparent competitive bidding,** where Contractual partners will have to adhere to Key Performance Indicators (KPIs) and Performance Standards.



- The assets and transactions identified under the NMP are expected to be rolled out through a range of instruments/models.

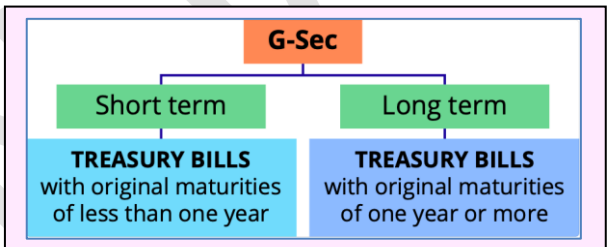
3.1.2. GOVERNMENT SECURITIES

Why in news?

Recently, Reserve Bank of India (RBI) allowed **small retail investors** to invest in government securities (G-Sec) by opening gilt accounts with the central bank under **'RBI Retail Direct' scheme**.

About G-Sec and Gilt Accounts

- A Government Security (G-Sec) is a **tradeable instrument** issued by the **Central Government** or the **State Governments**. It acknowledges the Government's debt obligation.
- Government Securities are of **two types**. (See Box)
- In India, the **Central Government** issues both, treasury bills and bonds or dated securities while the **State Governments** issue only bonds or dated securities, which are called the **State Development Loans (SDLs)**.
- G-Secs carry practically no risk of default and, hence, are called **risk-free gilt-edged instruments.**
- G-secs are also listed and traded on stock exchanges.
- A **"Gilt Account"** means an account opened and maintained for holding Government securities, by an entity or a person permitted by the Reserve Bank of India.
  - However, in case of a **'Person resident outside India,** the activities in the operations/maintenance of Gilt Account shall be governed by the **Foreign Exchange Management Act, 2000** and the regulations framed thereunder.



Treasury Bills (T-Bills):

- T-bills are money market instruments, and hence short-term debt instruments issued by the Government of India and are presently issued in three tenors, namely, 91-day, 182 day and 364 days.
- Treasury bills are **zero coupon securities** and pay no interest.
- Instead, they are issued at a discount and redeemed at the face value at maturity.

Dated G-Secs:

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

Operational mechanism of G-Secs

- The RBI, in consultation with the Government of India, issues an indicative **half-yearly auction calendar** which contains information about the amount of borrowing, the range of the tenor of securities and the period during which auctions will be held
- G-Secs are issued through auctions conducted by RBI. Auctions are conducted on the electronic platform called the **E-Kuber**, the **Core Banking Solution (CBS) platform of RBI**.

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- All non-E-Kuber members including non-scheduled UCBs can participate in the primary auction through scheduled commercial banks or PDs (called as Primary Members-PMs).

- The **Clearing Corporation of India Limited (CCIL)** is the clearing agency for G-Secs. It acts as a Central Counter Party (CCP) for all transactions in G-Secs by interposing itself between two counterparties. In effect, during settlement, the CCP becomes the seller to the buyer and buyer to the seller of the actual transaction.
- RBI also publishes all relevant data pertaining to the Government securities market on a daily, weekly, monthly, and annual basis.

While the data on market borrowings by the Central Government are disseminated regularly on weekly basis through the Weekly Statistical Supplement, **data on State Government securities are not available on a regular basis during the year** which acts as a limitation to the operational efficiency of the current mechanism.

What have been the recent initiatives vis-à-vis G-Secs and what has been their impact?

Initiatives	Impact/Potential Impact
RBI Retail Direct scheme: Individual investors can open **Retail Direct Gilt (RDG) Accounts** with RBI to buy government bonds. • The bonds on offer are **government securities (G-Secs)** issued by the central government, **state development loans** that are bonds issued by state governments, **and sovereign gold bonds** issued by the central government but whose price is linked to gold.	• **Broaden Investor Base:** Allowing direct retail investment in G-secs will broaden the investor base and provide retail investors with enhanced access to participate in the government securities market. • **Financialize Domestic Savings:** Allowing retail participation in the G-Sec market is a bold step towards the **financialization of a vast pool of domestic savings.** • From a retail perspective, this opens an **additional investment avenue.** But unlike small saving schemes of the Union government such as the Public Provident Fund or National Savings Certificate, there are **no special tax benefits on direct purchase of government bonds.**
Government Securities Acquisition Programme (G-SAP): Through this programme, RBI aims to purchase government securities worth Rs 1 lakh crore in the first quarter of FY22.	• Decline in bond yield acts as a **fillip for the equities markets.** • It will ensure **financial stability and G-Sec stability from global uncertainty.** • It **prevents crowding out of private investment.**
Long-term repo operations (LTROs): The LTRO is a tool under which the central bank provides one-year to three-year money to banks at the prevailing repo rate, accepting government securities with matching or higher tenure as the collateral.	• It will help banks to get funds for a **longer duration** as **compared to the short-term liquidity** provided by Liquidity Adjustment Facility (LAF) and the Marginal Standing Facility (MSF). • Banks can avail one year and three-year loans at the same interest rate of the overnight repo.
Operation Twist: Through 'Operation twist', RBI aims to bring down long-term bond yields. • There exists an **inverse relationship between bond prices and yields.** • In the current scenario, as RBI purchases long-term bonds, its demand pushes bond prices upwards. With an increase in the price of long-term bonds, yields would come down.	• Lower longer-term yields **help boost the economy** by **making loans less expensive** for those looking to buy homes, purchase cars, and finance projects, while saving becomes less desirable because it doesn't pay as much interest.

3.1.3. DISTRICT MANAGEMENT FUND

Why in news?

Recently, Government has taken complete control of the **District Mineral Foundation (DMF) funds** thereby negating states' right to sanction or approve any expenditure out of the funds accrued from mandatory contribution from mining lease holders.

More on News

- The Ministry of Mines has stated that the move was **necessitated as "there are instances where a part of the funds of the DMF are being transferred to the treasury/consolidated fund of the state** or state level funds," thereby "defeating the very purpose" of the creation of the DMF.

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- The Centre also pointed out that the transfer of any part of the fund of DMF to any state level entity for its utilization is **violation of the provision of section 9B of the Act**.

About District Mineral Foundation (DMF) funds

- It has been conceptualized as a **benefit-sharing mechanism** with mining-affected communities, recognizing them as partners in natural resource-led development.
- It is set up as a **non-profit trust in all mining districts of India**, and it comes with the precise objective to 'work for the interest and benefit of people and areas affected by mining', through a participatory process
- It was mandated through the **Mines and Minerals (Development & Regulation) Amendment Act**, (MMDRA) 2015 and is funded through the contributions from miners.

Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY)

- It is meant to provide for the **welfare of areas and people** affected by mining related operations, using the funds generated by District Mineral Foundations (DMFs).
- The **scheme ensures mitigating the adverse impacts, during and after mining**, on the environment, health and socio-economics of people in mining districts; and to ensure long-term sustainable livelihoods for the affected people in mining areas.
- As per this scheme, **High priority areas** like drinking water, health care, sanitation, education, skill development, welfare measures, skill development and environment conservation **will get at least 60% share of the funds.**

- In 2015, the Government further aligned DMF with the **Pradhan Mantri Khanij Kshetra Kalyan Yojana** (PMKKKY) scheme, to implement various developmental projects and welfare programs in mining-affected areas using DMF funds.
- The DMF funds collections have been the highest in mineral-rich Odisha (Rs 11,099 crore), followed by Jharkhand (Rs 5,921 crore), Chhattisgarh (Rs 5,830 crore), Rajasthan (Rs 4,121 crore) and Telangana (Rs 2,902 crore).

The Mines and Minerals (Development and Regulation) Amendment Act, 2015

- The act **regulates the mining sector in India** and specifies the requirement for obtaining and granting mining leases for mining operations.
- **Institutions:** The Bill provides for the creation of a **District Mineral Foundation (DMF)** and a **National Mineral Exploration Trust (NMET).**
  - The **DMF is to be established by the state government** for the benefit of persons in districts affected by mining related operations.
- The Amendment act creates a **new category of mining license** i.e., the prospecting license-cum-mining lease, which is a two stage-concession for the purpose of undertaking prospecting operations (exploring or proving mineral deposits), followed by mining operations.
- **Maximum area for mining**: The Act allows the central government to increase the area limits for mining, instead of providing additional leases for covering additional area.
- **Lease period**: The lease period for coal and lignite remains unchanged. For all minerals other than coal, lignite and atomic minerals, mining leases shall be granted for a period of 50 years.
- **Auction of notified and other minerals:** The Act states that **state governments** shall grant mining leases and prospecting license-cum-mining leases for both notified and other minerals.
  - All leases shall be granted through auction by **competitive bidding, including e-auction**.

3.1.4. RETROSPECTIVE TAXATION

Why in News?

Recently, parliament enacted the **Taxation Laws (Amendment) Act, 2021** to amend the **Income-tax (IT) Act, 1961** and the **Finance Act, 2012**, scrapping the 2012 retrospective tax law.

What is Retrospective Taxation and India's experience with it?

Retrospective taxation is a 'backward looking' tax, allowing a country to pass a rule on taxing certain products, items or services and deals and **charge companies from a time behind the date on which the law is passed.**

Used by number of nations to **remove taxation anomalies** through new or additional charge on past transactions, it helps in overcoming misuse of tax laws loopholes by companies. In India-

- It was introduced in **2012**, empowering Income tax Department to raise tax demands **on capital gains** arising from **indirect transfer of assets** located in India.
- It was used in **17 tax matters** with demand of **Rs. 1,08,730 crores** of tax from companies like **Vodafone, Cairn Energy, Westglobe, Richet Holdings** etc.

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What are the potential Negative impacts of Retrospective Taxation?

- **Goes against the Principle of Tax Certainty:** The Retrospective Tax removes the time limit provided under **Section 149** of the **Income Tax Act** and makes taxes uncertain.
- **Hurts Private investors/companies** by introducing new demands which can spoil the business planning and expectations.
- **Arbitration Issues:** Out of 17 cases, 4 invoked arbitrations under **Bilateral Investment Protection Treaty** with the United Kingdom and Netherlands.
    - Also, being a signatory to the **Convention on the Recognition and Enforcement of Foreign Arbitral Awards** (1958, also known as **New York Arbitration Convention**), the companies can enforce foreign and non-domestic arbitral awards enforced against Indian assets in numerous jurisdictions around the world.
- **Damaging India's Reputation:** Despite various financial and infrastructure reforms for Ease of Doing Business, it damages India's reputation with-
    - **Reduced FDI inflows** due to **reduced confidence** of **potential investors,**
    - **Reduced effectiveness of special initiatives** to attract investment like IFSC-GIFT city.

Sovereign right to tax and its limits

- Right to tax is a **core sovereign power**.
- The Constitution of India empowers government to **levy or charge taxes except by the authority of law**.
- Though upheld by Investor-State Dispute Settlement (ISDS) tribunals as well, the Bilateral Investment Treaty (BIT) puts **certain limits on the right as:**
    - **Expropriation**, i.e., no confiscation or claim on property against owner wishes from government
    - **Fair and Equitable treatment**, i.e., the taxes should not be discriminatory
- In 2016, India framed **model BIT**, **excluding taxation measures from its scope**, reducing scope of ISDS to interfere in sovereign right to tax.

What are the changes introduced by Taxation Laws (Amendment) Act, 2021?

- Amends **Section-9 of IT Act, 1961** to **nullify the demands raised for indirect transfer** of Indian assets made before 28th May 2012 on fulfillment of specified conditions like withdrawal of appeal, petition, arbitration etc. in this regard.
- **Refund of any amount paid in these cases** without any interest under Section-244A.
- However, **offshore transactions involving Indian assets** executed after 28th May 2012 are **still taxable** as there is no retrospective application of the law.

3.2. BANKING AND MONETARY POLICY

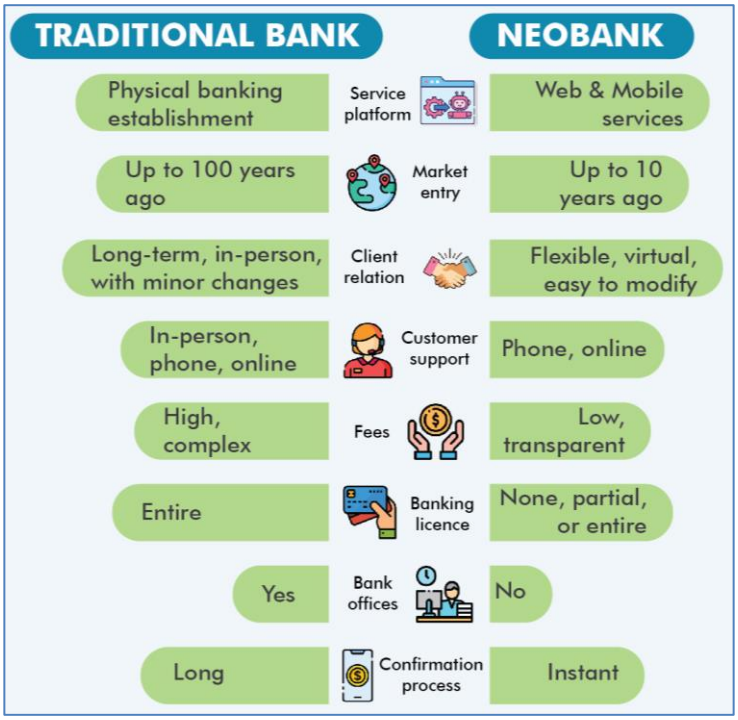
3.2.1. NEO-BANKS

Why in news?

Recently, Fintech platforms, which sometimes refer to themselves as neo-banks, are increasingly making inroads into the Indian market.

Neo-Bank and its mechanism

- Neo-bank is a term for 'fintech firms' with only a digital presence and no physical branches. They **provide banking services use** such as savings accounts, instant loans, credit cards, mutual funds and fixed deposits.
    - They do this via **tie-ups with Reserve Bank of India (RBI)-licensed banks.**
    - In the case of products such as wealth management, neo-banks generally get investment adviser licences. Usually, they **tie-ups are with small finance banks or small scheduled commercial banks.**



- Some countries such as the UK have a formal regulatory licence for neo-banks, but that is not the case in India.
- Because of lower overhead costs, neobanks tend to offer higher interest rates to their customers.

- There is **no such category of banks under the RBI rules**.

3.2.2. NATIONAL ASSET RECONSTRUCTION CO. LTD. (NARCL)

Why in News?

Recently, the **NARCL** was registered in Mumbai with the aim of cleaning up the **bad loans** from bank books.

More on News

- Indian Banking system needs solution to large percentage of stressed assets (7.5% of advances in March 2021) and high level of provisioning.
- First proposed by **Indian Bank Association** (IBA) in 2020. In Budget 2021-22 government announced the establishment of an **Asset Reconstruction Company (ARC)** and **Asset Management Company (AMC)** to-
  - consolidate and take over the existing stressed debt.
  - manage and dispose of the assets to **Alternate Investment Fund (AIF)** and other potential investors for eventual value realization.
- **Government** will have **no direct capital infusion** in NARCL, but it will offer **guarantee against the security receipts**
- NARCL will reconstruct only those assets which are 100% provided for by the lenders and not classified as fraud or amid a liquidation process.
- NARCL will resolve stressed loans above Rs 500 crore each, amounting to about Rs 2 trillion.

Major Classifications of Assets

Money or loans provided by banks are considered as **Assets**, as it generates income for the bank. If it has no problem or does not carry more than normal risk, it is called **Standard Asset**. If it ceases to generate income it becomes Non-Performing Asset (NPA).

Non-performing Asset (NPA): Based on overdue norms, a loan or advance for which the principal or interest payment is overdue for a period of **90 days** (one quarter) is classified as NPA.

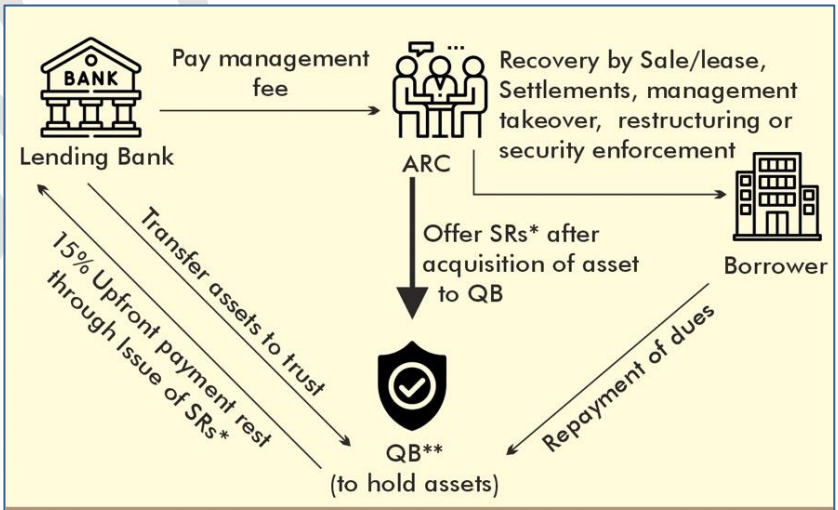
- For **Agricultural loans**, the overdue for NPA is **two crop seasons** for short duration crops and **one crop season** for long duration crops.

Categories of NPAs

- **Substandard assets** if it remained NPA for a period less than or equal to 12 months.
- **Doubtful assets** if the asset remains substandard asset for a period exceeding 12 months.
- **Loss assets**, if loss has been identified by the bank or internal or external auditors or by the Co-operation Department or by the Reserve Bank of India inspection but the amount has not been written off, wholly or partly.

What could be the potential benefits from NARCL?

- With existing **ARCs** capital not enough to deal with huge NPA problem of banks, **NARCL can help banks in reducing NPAs,** yielding other benefits as well in **normal banking functions, faster economic recovery** and in **banks privatization** with **improved PSBs valuations**.
- **Opportunities for other ARCs at MSME's level.**
- **Aggregating debt:** Set up of NARCL will help in addressing the problem of contradictory views (lack of consensus) among different lenders, allowing debt recasts.
- **Unrealized Potential:** Despite different ways to solve problems or flexibilities in working, the potential of ARCs is not fully realized in India, NARCL entry can bring new culture and values in sector.



Working of ARCs

*SR or Security receipt is a receipt/security, issued by an ARC to any QBs on purchase/acquisition of an undivided right, title or interest in the financial asset

**QB or Qualified buyer represents the corporate entities like FIs, Insurance Company, Bank, Trustee,AMC etc. or any category of non-institutional investors specified by RBI or by SEBI

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- **Improve Recoveries:** After initial high rates of recovery, it dipped below 30% post 2010-11 (exception of 2017-18 with 32.2% recovery). Entry of NARCL holds potential to shape the operations of the existing ARCs, strengthening the asset resolution mechanism in India.

Sudarshan Sen Committee

Set up in 2021 by RBI, the committee will-

- review existing legal and regulatory framework applicable to ARCs with recommendations to improve efficacy of ARCs;
- review role of ARCs in stressed assets resolution under Insolvency & Bankruptcy Code (IBC);
- Review ARCs business model and suggest means to improve liquidity and trading of SRs.

What makes NARCL different from other Asset Reconstruction Companies (ARCs)?

Other ARCs	NARCL
▪ Private companies which limit the assets transfer from PSBs because of fears related to investigation. ▪ Buy assets at a steep discount from actual loans with low recoveries. ▪ Except few, most are thinly funded as they largely borrow funds from banks and face various issues like different compulsions from different lenders, which delays whole process.	▪ With PSBs as main stakeholders and government backing, assets transfer can happen more freely. ▪ Allows Swiss Challenge to get best for banks from stressed asset. ▪ Designed on international experiences of government backed ARCs in South Korea, Sweden and US, NARCL won't have capital issues and it can aggregate bad loans for faster reconstruction.

3.2.3. E-RUPI

Why in News?

Recently, a new digital payment mode was adopted with e-RUPI.

About e-RUPI

- "e-RUPI" is an **electronic voucher based digital payment system** which is **person-specific and purpose-specific payments system.**
  - These vouchers are like e-gift cards, which are prepaid in nature.
  - The code of the cards can be shared either via SMS or the OR code can be shared.
- e-RUPI is **backed by existing Indian rupee as underlying asset** and it's **specificity of purpose makes it different from a virtual currency** and puts it **closer to a voucher-based payment system.**
  - E-RUPI is not a platform.
- It has been **developed by the National Payments Corporation of India on its UPI platform,** in collaboration with the Department of Financial Services, Ministry of Health & Family Welfare and National Health Authority.
- **Significance**
  - Being pre-paid in nature, it assures **timely payment to the service provider without involvement of any intermediary.**
  - **No digital or bank presence required** - Consumer redeeming the voucher need not have a digital payment app or a bank account
  - **Ensures leak-proof delivery** of various welfare services.
  - **Corporates can issue these vouchers for their employees.**
  - **Voucher redemption can be tracked** by the issuer.

Related News

Real Time gross Settlement (RTGS) & National Electronic Fund Transfer (NEFT) payment systems opened for Non-Banks

- **Reserve Bank of India (RBI) has allowed Non-Banks** (like Prepaid Payment Instrument issuers, card networks, White label ATM operators) **to participate in its Centralized Payment Systems (CPS).**
  - **CPS** in India comprise of **Real Time Gross Settlement** (RTGS) and **National Electronic Funds Transfer** (NEFT) systems, both **owned and operated by the RBI.**

- Till now, **only Banks were allowed** to use both payment systems.
  - Apart from banks, very **few select non-banks have been approved to participate in CPS**- clearing corporations of stock exchanges, select financial institutions (NABARD, EXIM Bank) etc.
- With it, **Non-Banks** will be **allotted a separate Indian Financial System Code** (IFSC); **a current account will be opened with the RBI** in its core banking system (e-Kuber); a **settlement account** maintained with the RBI etc.

3.3. LABOUR, EMPLOYMENT, SKILL DEVELOPMENT AND ENTREPRENEURSHIP

3.3.1. PERIODIC LABOUR FORCE SURVEY

Why in News?

Recently, National Statistical Office (NSO) released third annual report on Periodic Labour Force Survey (PLFS).

About National Statistical Office (NSO)

- It is the **statistics wing of Ministry of Statistics and Programme Implementation.**
- NSO consists of the Central Statistical Office (CSO), the computer center and the National Sample Survey Office (NSSO).
- **NSO is mandated with the following responsibilities:**
  - **nodal agency for planned development of the statistical system in the country**.
  - prepares **national accounts as well as publishes annual estimates of national product.**
  - **Maintains liaison with international statistical organizations,** such as, the United Nations Statistical Division (UNSD), IMF, ILO etc.
  - **Compiles and releases the Index of Industrial Production (IIP)** every month in the form of 'quick estimates.
  - Conducts the **Annual Survey of Industries (ASI)**.
  - Organizes and **conducts periodic all-India Economic Censuses** and follow-up enterprise surveys.

About Periodic Labour Force Survey (PLFS)

- Considering the importance of availability of labour force data at more frequent time intervals, NSO launched PLFS in April 2017.
  - The first annual report (July 2017-June 2018) was **released in May 2019 and the second in June 2020.**
  - Third Annual Report is brought out based on PLFS **conducted during July 2019-June 2020.**
- **Objective of PLFS is primarily twofold**
  - To estimate the **key employment and unemployment indicators** (viz. Worker Population Ratio (WPR), Labour Force Participation Rate (LFPR), Unemployment Rate (UR)) **in the short time interval of three months** for the urban areas only in the 'Current Weekly Status' (CWS).
  - To **estimate employment and unemployment indicators in both 'Usual Status'** (principal activity status + subsidiary economic activity status) **and CWS in both rural and urban areas annually.**
- PLFS **categorises the workforce into self-employed** (which includes own account workers, employers, and unpaid helpers in family enterprises); **regular wage/salaried workers and casual labourers.**
- **Own account workers run small enterprises without hiring any labour** but may take help from family members, while employers hire workers.

Definition of Key Indicators		
Labour Force Participation Rate (LFPR)	• It is defined as the **percentage of persons in labour force** (i.e. working or seeking or available for work) in the population.	1. Labour force Participation Rate (LFPR): $\frac{\text{no. of employed persons+no.of unemployed persons}}{\text{total population}} *100$
Unemployment Rate (UR)	• It is defined as the **percentage of persons unemployed among the persons in the labour force.**	2. Worker Population Ratio (WPR) $\frac{\text{no. of employed persons}}{\text{total population}} *100$
Worker Population Ratio (WPR)	• It is defined as the percentage of employed persons in the population.	3. Proportion unemployed (PU) $\frac{\text{no. of unemployed persons}}{\text{total population}} *100$
		4. Unemployment Rate (UR): $\frac{\text{no.of unemployed persons}}{\text{no. of employed persons+no.of unemployed persons}} *100$
Activity Status	• Activity status of a person is determined on the basis of the	• **Usual Status:** When the activity status is determined on the basis of the reference period of last 365 days preceding the date of survey.

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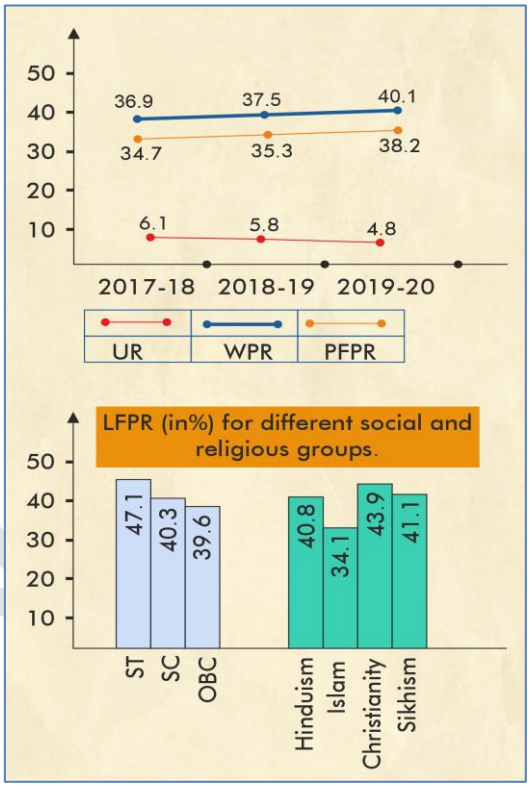
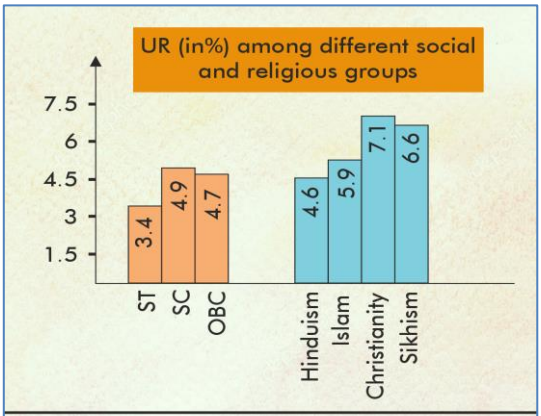
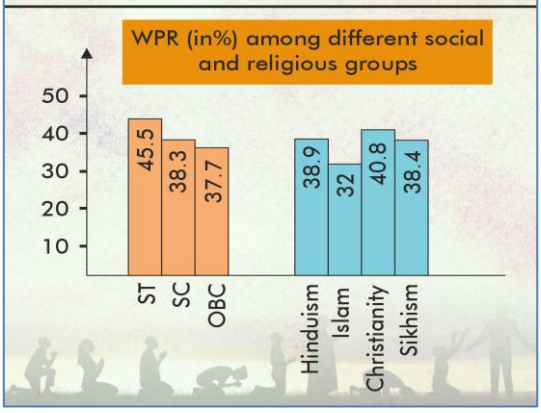
	activities pursued by the person during the specified reference period.	• **Current Weekly Status (CWS):** When the activity status is determined on the basis of a reference period of last 7 days preceding the date of survey.
		• **Principal activity status:** The activity status on which a person spent relatively long time (major time criterion) during 365 days preceding the date of survey.
		• **Subsidiary economic activity status**- The activity status in which a person in addition to his/her usual principal status, performs some economic activity for 30 days or more for the reference period of 365 days preceding the date of survey.

What Data in PLFS indicates?

- **Falling Unemployment rate**
  - ✓ **UR fell to 4.8%** in 2019-20.
  - ✓ **UR among youth in the 15-29 age group is 15%,** with urban male and female joblessness rates in this age group even greater, at 18.2% and 24.9% respectively.
  - o While there was an increase in the share of the population in the labour force, there was an even higher increase in the share of those who were able to find work (indicated by WPR), and hence unemployment fell.
    - ✓ **WPR improved** to 38.2% in 2019-20 compared with 35.3% in 2018-19 and 34.7% in 2017-18.
- **Rise in workforce engaged in agriculture:** Share of the workforce engaged in agriculture has risen to 45.6 per cent (2019-20) from 42.5 per cent (2018-19).
  - o Almost the entire rise in the workforce was accommodated by agriculture. Agriculture continues to perform the function of a sink — absorbing the workforce that cannot find remunerative employment elsewhere.
  - o **Share of rural women engaged in agriculture** has **increased substantially** from 71.1 per cent (2018-19) to 75.7 per cent (2019-20) and these women are increasingly being employed in the category of unpaid family workers.
- **Rise in self-employment:** 53.2% of rural households and 30.7% of urban households were engaged in self-employment. Only 12.9% households in rural areas (compared to 43.1% in Urban areas) were engaged in regular wage/salary earning.
  - o Proportion of rural households reporting themselves as 'self-employed', especially in non-agriculture, went up at the cost of regular wage earning/salaried households.
  - o In agricultural sector, much of the increase is coming through the category of unpaid family helpers.
- **Female participation:** PLFS shows a **sharp increase in the female LFPR by 5.5 percentage points** (from 2018-19). Much of this is **driven by the increased LFPR of rural women.**
- **Impact of lockdown:** In April-June 2020 LFPR for men and women declined to 55.5% and 15.5% against 56.7% and 17.3% in January-March 2020.







- On a year-on-year basis, urban India saw a reduction of 11.05 million jobs in the April-June 2020 period and rural areas saw the addition of 14.7 million jobs.
- UR increased more sharply in urban areas (from 8.9% to 20.8%) than in rural areas (from 8.7% to 12.2%).
- The self-employed were the worst hit during the lockdown, while regular wage workers suffered a contraction only in rural areas.

Issues with PLFS

- The **sample size on which national-level estimates of the PLFS are based are, in fact, much larger** than the minimum sample size required to produce reliable estimates of UR.
- Typically, **UR is based on Usual Status.** But this approach is **not comparable with either the global norm (**followed by ILO) **or the private sector practice** (such as Centre for Monitoring Indian Economy or CMIE).
  - **CWS is closer to the global norm** as memory recall is much better in CWS. Using CWS approach, the UR was estimated to be 8.8%, unchanged during the last three years.
  - **Usual Status made more sense when the economy was predominantly agrarian.** Today more and more people are into jobs that do not follow a year-long schedule.

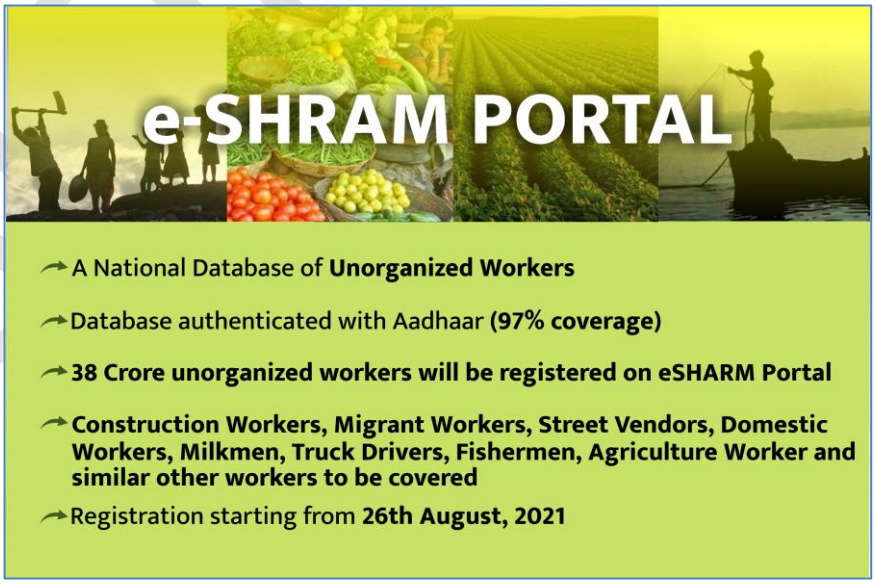
3.3.2. E-SHRAM PORTAL

Why in News?

The labour ministry has launched the **National Database for Unorganised Workers (NDUW) or e-Shram portal for Registration of Unorganized Workers.**

About the Portal

- **Key Features**
  - **All registered workers shall be issued an e-Shram card with Universal Account Number (UAN)** to avail benefits of various social security schemes of the government (like PM-Shram Yogi Maan-Dhan Yojana).
  - Provision of **accidental cover of Rs. 2 lakh in case of death or permanent disability** and Rs. 1 lakh in case of partial disability.
  - The database will serve as a **reference point for the authorities to track and reach out** to unorganised workers and offer them relief in times of crisis.
- **Unorganised workers' Social Security Act, 2008** defines the unorganised sector as a **production or service oriented enterprise owned by individuals or self-employed workers** and if workers are employed, then the total number of workers cannot exceed 10.



3.4. AGRICULTURE

3.4.1. NATIONAL MISSION ON EDIBLE OILS – OIL PALM (NMEO-OP)

Why in News?

Recently, Cabinet approved a new centrally sponsored scheme, NMEO-OP, to promote domestic cultivation of oil palm in the next five years.

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About NMEO-OP

- It will **subsume the current National Food Security Mission-Oil Palm programme**.
- It seeks to reduce dependence on edible oil imports by focusing on increasing area and productivity of oil palm.
- Under this scheme, it is **proposed to cover an additional area of 6.5 lakh hectare (ha.) for oil palm till** the year 2025-26 and thereby reaching the target of 10 lakh hectares ultimately.
- **Key features of the scheme**
  - It will have a special focus on **Northeast region** and the **Andaman and Nicobar Islands**.
  - **Viability Price (VP): Price assurance to the oil palm farmers** on the lines of the **minimum support price (MSP) for the Fresh Fruit Bunches (FFBs)** from which oil is extracted by the industry. This will be known as the Viability Price (VP).
    - ✓ The assurance to the farmers will be **in the form of the viability gap funding and the industry will be mandated to pay 14.3% of the Crude Palm Oil (CPO) price which will eventually go up to 15.3%.**
      - > There is a sunset clause for the scheme which is 1st November 2037.
      - > Palm oil farmers will be **paid the price difference via direct benefit transfer (DBT).**
    - ✓ To give **impetus to the North-East and Andaman, the Government will additionally bear a cost of 2% of the CPO price**.
    - ✓ This will **protect the farmers from the fluctuations of the international CPO prices** and protect him from the volatility.
  - **Assistance to farmers for planting materials** of Rs 29,000 per hectare, a steep increase from Rs 12,000 per hectare earlier.
    - ✓ Further substantial increase has been made for maintenance and inter-cropping interventions. A special assistance @ Rs 250 per plant is being given to replant old gardens for rejuvenation of old gardens.
    - ✓ **Special assistance will be provided for the North-East and the Andaman regions** in which special provisions is being made for half-moon terrace cultivation, bio fencing and land clearance along with integrated farming.
    - ✓ This assurance will **inculcate confidence in the Indian oil palm farmers to go for increased area and thereby more production of palm oil.**
  - **Seed gardens will be provided assistance** up to Rs 100 lakhs for 15 hectares in the North-East and Andaman regions and Rs 80 lakhs for 15 hectares in the rest of India **to address the issue of shortage of planting material in the country.**
- **A financial outlay of Rs.11,040 crore has been made for the scheme**, out of which Rs.8,844 crore is the Government of India share and Rs.2,196 crore is State share and this includes the viability gap funding also.

3.4.2. LIVESTOCK SECTOR OF INDIA

Why in News?

The parliamentary standing committee on agriculture, had submitted a report titled 'Status of veterinary services and availability of animal vaccine in the country' pointing out several impediments to growth of the livestock sector in India.

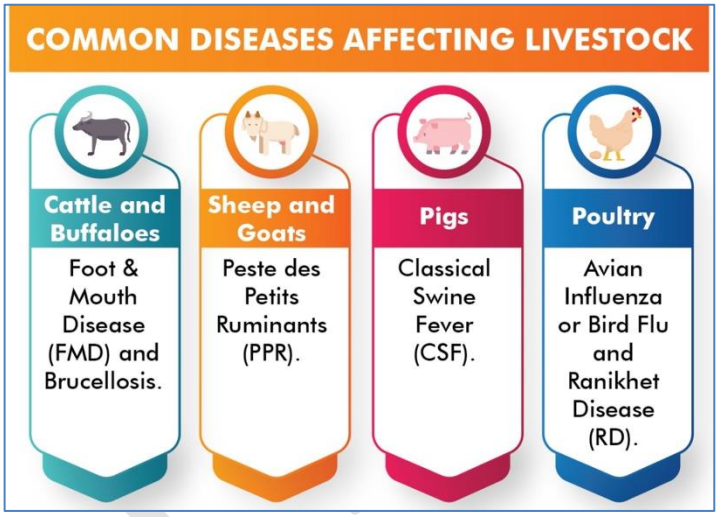
Status of Livestock Sector in India

- Growing at a Compound Annual Growth Rate (CAGR) of **8.15%** from 2014-15 to 2019-20.
- It provides **employment to about 8.8 % of the population** and **livelihood to two-third of rural community** in India.
- It **contributed 16% to the income of small farm households** as against an average of 14% for all rural households.
- It contributes to **34% of total Agriculture GDP (2019-20)**.
- Animal Husbandry is a **State subject.**
- **As per the 20th Livestock Census, India is-**
  - **World's highest livestock owner, being** First in the total buffalo population, Second in the goat population and Third in the sheep population.
  - **Second largest poultry market** in the world
  - **Second largest producer of fish** and also second largest aquaculture nation in the world.

Impediments faced by Livestock Sector in India

- **Low productivity of farm animals**: For instance, the average annual milk yield of Indian cattle is only about 50 per cent of the global average.

- **Inadequate and poor quality of veterinary infrastructure**.
- **Deficiency of vaccines and vaccination set-up**
- **Shortage of nutritional fodder**: Hardly 5 per cent of the cropped area in India is utilized to grow fodder.
- **Lack of inclusivity in Veterinary Services:** Unconventional sources of milk such as camel, yak, etc. and that still fail to be included within policies and programmes.
- **Lack of access to markets:** Except for poultry products and to some extent for milk, markets for livestock and livestock products are underdeveloped.
- **Weak institutional mechanisms to protect animals against risk**: Only 6 per cent of the animal heads (excluding poultry) are provided insurance cover.
- **Weak extension services at field level:** This limits capability of Indian farmers to adopt the technologies developed by research institutions.
- **Other issues:**
  - Declining population of indigenous animals.
  - Slow development of Artificial Insemination services with Deficiency in quality germplasm, infrastructure, and technical manpower.
  - Water sources depletion.
  - Outdated veterinary education and lack of R&D in veterinary services.
  - Limited availability of quality breeding bulls.
  - Increasing contribution to greenhouse gases emission.
  - Diversion of feed and fodder ingredients for industrial use.



Major Government Schemes aimed towards growth of Livestock Sector	
Development Programmes	• **National Livestock Mission:** It aims to enhance the level of nutrition and standard of living of livestock keepers and farmers especially small holders through sustainable, safe and equitable livestock development. It includes **Sub-Missions on Fodder and Feed Development, Skill Development, Technology Transfer and Extension etc.** • **Rashtriya Gokul Mission (RGM):** for development and conservation of indigenous breeds through selective breeding in the breeding tract and genetic upgradation of nondescript bovine population. • Significant initiatives under the mission include- o **Gopal Ratna awards and Kamdhenu awards** for encouraging farmers/breeder societies to rear Indigenous breeds of Bovines. o Establishment of **integrated cattle development centres 'Gokul Grams'** and National Kamdhenu Breeding Centres. o **E-Pashu Haat portal** for connecting breeders and farmers. o **Pashu Sanjivni:** An Animal Wellness Programme encompassing provision of Animal Health cards ('Nakul Swasthya Patra') along with UID identification. • **National Programme for Dairy Development:** It aims to enhance quality of milk and milk products and increase share of organized milk procurement.
Disease Control programme	• **Scheme on livestock health & disease control (LH&DC):** Centrally Sponsored Scheme aimed at providing financial assistance as Central share to States / UTs for control & containment of animal diseases like Contagious Bovine Pleuropneumonia (CBPP), Classical Swine Fever (CSF) etc. o **National Animal Disease Reporting System (NADRS):** A Sub-component of LH&DC, it is a web based platform for reporting of animal disease from the level of block veterinary institution on a real-time basis. • **National Animal Disease Control Programme for Foot & Mouth Diseases (FMD) and Brucellosis (NADCP):** Central Sector Scheme that envisages to control FMD and Brucellosis by 2025 and to eradicate them by 2030 through vaccination.
Infrastructure Development Funds	• **Animal Husbandry Infrastructure Development (AHIDF)** with corpus of Rs. 15000 crore for incentivizing investments by individual entrepreneurs, private companies, MSME,

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	Farmers Producers Organizations (FPOs) etc. to establish the dairy and meat processing and value addition infrastructure and Animal Feed Plant. • **Dairy Processing & Infrastructure Development Fund** with a corpus of Rs. 8,004 crore to provide loan assistance to Eligible End Borrowers (EEBs) such as the State Dairy Federations, District Milk Unions, etc. to modernize the milk processing plants and machinery and to create additional infrastructure for processing more milk.
Other initiatives	• **Special Livestock Sector Package:** It envisages Central Government's support amounting to **Rs.9800 crore** over duration of 5 years for leveraging total investment of Rs. **54,618 crore** for 5 years. • **e-GOPALA application developed by National Dairy Development Board (NDDB):** It helps farmers manage their livestock including buying and selling of disease-free germplasm in all forms (semen, embryos, etc); informs about availability of quality breeding services and guides farmers for animal nutrition, treatment of animals using appropriate Ayurvedic ethno veterinary medicine. • **Supporting Dairy Cooperatives and Farmer Producer Organizations engaged in dairy activities:** Under it, dairy cooperatives and Farmer Producer Organisations engaged in dairy activities will be provided with 4% interest subvention for meeting their working capital requirements. • A Special Drive has been undertaken by the Department of Animal Husbandry and Dairying (AH&D) for providing **all dairy farmers of Milk Cooperatives and Milk Producer Companies with Kisan Credit Cards (KCC).**

3.5. INDUSTRY AND ASSOCIATED ISSUES

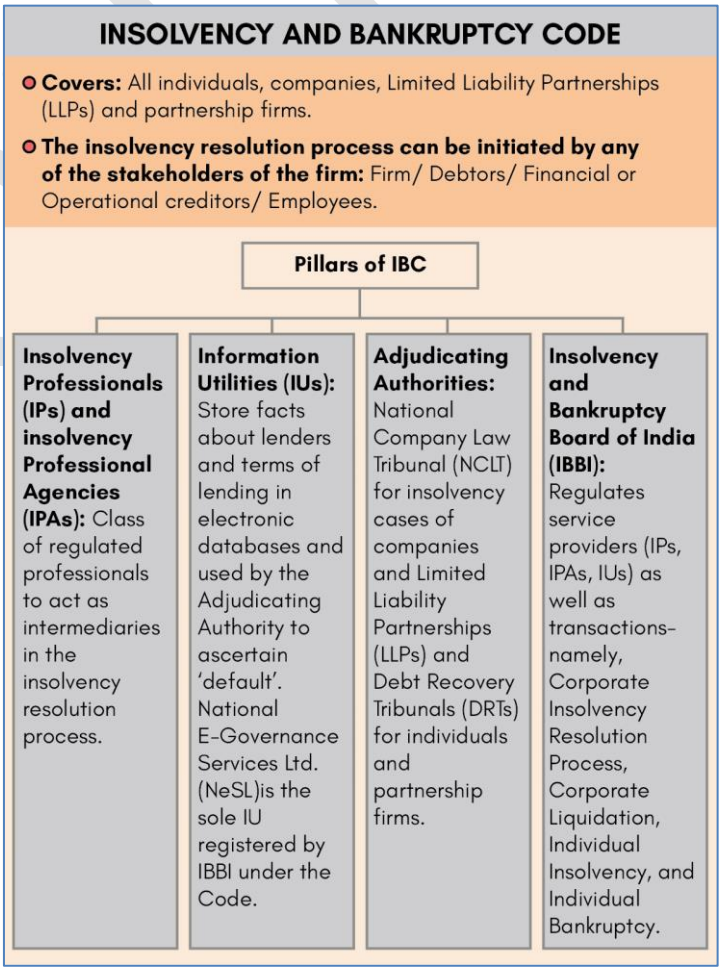
3.5.1. INSOLVENCY AND BANKRUPTCY CODE (AMENDMENT) BILL 2021

Why in News?

The Parliament recently passed the **Insolvency and Bankruptcy Code (Amendment) Bill 2021,** allowing the use of "pre-packs" to resolve insolvency proceedings involving micro, small and medium-scale enterprises.

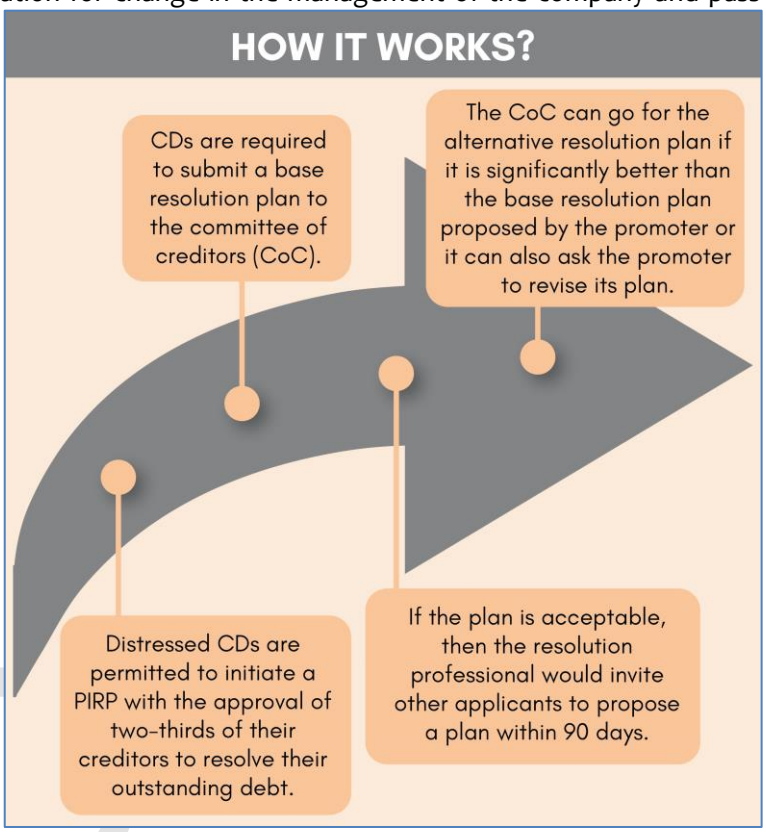
More on news

- The bill replaces the Insolvency and Bankruptcy Code (Amendment) Ordinance, 2021 that was promulgated by the President in April, 2021.
- **Key provisions of the bill include:**
  - Inserting a new Chapter to facilitate **pre-packaged insolvency resolution process (PIRP) for corporate persons that are Micro, Small and Medium Enterprises.**
  - The central government may, by notification, set the **minimum threshold of default to initiate PIRP** up to one crore rupees.
    - ✓ Earlier, in April 2021, the government had set the minimum threshold at 10 lakh rupees.
  - **Disposal of simultaneous applications for initiation of corporate insolvency resolution process (CIRP) and PIRP,** pending against the same corporate debtor.
  - **Penalty for fraudulent or malicious initiation of PIRP** or fraudulent management of corporate debtor during the insolvency resolution process.
  - **Punishment for offences** related to pre-packaged insolvency resolution process.



What is Pre-packaged insolvency resolution?

- A pre-packed insolvency resolution mechanism is a process wherein a resolution arrangement is agreed upon between the distressed corporate debtor (CDs) and lender before approaching the National Company Law Tribunal (NCLT) for bankruptcy proceedings.
- It gives legal sanction to a plan agreed among banks, promoters and the buyer.
- It follows a **debtor-in-possession model**.
- **Protection against Fraudulent activities/mismanagement:** The Committee of Creditors (CoC) can, with a 66 per cent vote share, make an application for change in the management of the company and pass control to the resolution professional. This can be done if CoC finds that the company is being run in a fraudulent manner or there has been gross mismanagement of company affairs by the promoter.
    - If the resolution plan submitted by the promoter provides for impairment (drastic reduction in recoverable amount) of any claims, the CoC can ask the promoters to dilute their shareholding or voting or control rights in the company.
- **It allows for a Swiss challenge to the resolution plan submitted by a CD** in case operational creditors are not paid 100 per cent of their outstanding dues.
    - Under It, any third party would be permitted to submit a resolution plan for the distressed company and the original applicant would have to either match the improved resolution plan or forego the investment.



Differences between PIRP and Corporate Insolvency Resolution Process (CIRP)

Criteria	PIRP	CIRP
Control of the firm during insolvency process	Debtors remain in control of their distressed firm.	Company is managed by the resolution professional.
Deadlines	To be completed within a period of 120 days of the commencement date.	To be completed within a period of 270 days of the commencement date.
Process of resolution of the debt	Distressed company enters into direct agreement between secured creditors and the existing owners or outside investors.	Resolution through open bidding system.

Related news

New curbs on insolvency resolution professionals

- These norm changes are **part of the IBBI (Insolvency Resolution Process for Corporate Persons) (Second Amendment) Regulations,** 2021
- **New Norms**
    - Any linkage of the insolvency professionals with the corporate debtor or any of the stakeholders is now not permitted.
    - IBBI has **authorised Interim Resolution Professionals and Resolution Professionals (RPs) to appointany other professional that may be necessary** to assist in discharge of RP's duties.
        - ✓ This will be **allowed only when certain conditions are met such as explicit prohibition** on appointment of relatives of RPs, past (5 years) auditor of the corporate debtor, etc.
- **Significance**
    - To **ensure fair business dealings and transparency in the appointment** of RPs.
    - **Eliminates potential conflicts of interest** in functioning of RPs.

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3.5.2. MICRO, SMALL & MEDIUM ENTERPRISES

Why in news?

The government has **announced fresh guidelines to include wholesale and retail trades as micro, small and medium enterprises (MSMEs).**

More on news

- The new guidelines will **make wholesale and retail enterprises eligible for registration in the Udyam portal.**
  - The Udyam portal provides a single-page registration, consumes less time, and simplifies the process of registering any enterprise under the MSME category.
- Wholesale and retail traders will now be **eligible for finance under priority sectors** classified by the Reserve Bank of India (RBI).
  - However, other than being eligible for finance under priority sector, **wholesale and retail enterprises will not be eligible for any other benefits** that small businesses otherwise get from the government.
- In the past, wholesale and retail trading activities were classified as MSMEs, **but were excluded in 2017 as they did not cater to manufacturing activity.**

PREVIOUS MSME CLASSIFICATION:

CRITERIA: INVESTMENT IN PLANT & MACHINERY EQUIPMENT			
Classification	**micro**	**small**	**medium**
Manufacturing Enterprises	Investment <₹25 Lakh	Investment <₹5 Crore	Investment <₹10 Crore
Service Enterprise	Investment <₹10 Lakh	Investment <₹2 Crore	Investment <₹5 Crore

NEW REVISED MSME CLASSIFICATION:

COMPOSITE CRITERIA: INVESTMENT & ANNUAL TURNOVER			
Classification	**micro**	**small**	**medium**
Manufacturing & Services	Investment <₹1 Crore & Turnover <₹5 Crore	Investment <₹10 Crore & Turnover <₹ 50 Crore	Investment <₹20 Crore & Turnover <₹100 Crore

Background

- **MSMEs, introduced by the Government via Micro, Small & Medium Enterprises Development (MSMED) Act, 2006,** are **entities engaged** in the **production, manufacturing, processing or preservation of goods and commodities** subject to investment limits (refer infographic).
- **Importance of MSMEs in India**
  - They contribute to **30% of the country's GDP; 45% of manufacturing output** and about **40% of overall exports.**
  - There are approximately **6.3 crore MSMEs employing 110 million people.**

Recent Government steps to support MSMEs

- **New definition of MSMEs**
  - In 2020, the **Government has revised the definition of micro, small and medium enterprises** (MSMEs) **to give them the confidence to grow.**
  - Previously, successful MSMEs feared if they outgrow the size of what is defined as an MSME, benefits accrued of being a MSMEs would be lost. Therefore **MSMEs preferred to remain within the definition rather than grow.**
- Under the **new definition**
  - **Distinction between manufacturing and services enterprises** has been **eliminated.**
  - **Investment criteria** for such enterprises have been **revised upwards,** while an **additional criterion of turnover has been introduced.**
- **Improving the credit access:** The Finance Ministry has **extended the Emergency Credit Line Guarantee Scheme (ECLGS) for three months upto September 2021,** allowing fully guaranteed and collateral-free additional credit support for Covid-hit MSMEs.
  - Recently, **ECLGS has been expanded by Rs. 1.5 lakh crore,** raising the overall cap of admissible guarantee from Rs. 3 lakh crore to Rs. 4.5 lakh crore.
- **Addressing delayed payments:** Recently, the **Parliament has passed the Factoring Regulation (Amendment) Bill** which will **help MSMEs by providing them added avenues for getting credit facility,**

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especially through Trade Receivables Discounting System (TReDS). This will result in bringing down cost of funds and enable greater access to small businesses, ensuring timely payments.
    - **TReDS is an electronic platform** where receivables of MSMEs drawn against buyers (large corporates, PSUs, Government departments) are financed through multiple financiers at competitive rates.
    - This is in addition to the **MSME Samadhaan Portal** that empowers **micro and small entrepreneurs across the country to directly register their cases relating to delayed payments by Central Ministries/ Departments/CPSEs/State Governments.**
- **Portal "Champions"** was launched to cover many aspects of e-governance including **grievance redressal and handholding of MSMEs**.
- **Global level market for MSMEs** through the Ministry of MSMEs
    - The Ministry through its **MSME-Development Institutes** (DI), **facilitates MSMEs to export** from Domestic Tariff Area (DTA) and Special Economic Zone (SEZ).
    - The **International Cooperation Scheme** (ICS) is implemented to **facilitate participation of the MSMEs in International Exhibitions,** Trade Fairs etc. to expand their business in the global market.

Related News
Factoring Regulation (Amendment) Bill, 2020
- The Bill seeks to amend the **Factoring Regulation Act, 2011** to widen the scope of entities which can engage in factoring business.
    - Factoring is a transaction where a **business entity sells its receivables from a customer to a third party which is a "factor" for immediate realization of funds either in part or in full.**
    - The **Factoring Regulation Act, 2011 was enacted to provide for regulating the assignment of receivables to factors**, registration of factors carrying on factoring business and the rights and obligations of parties to the contract for assignment of receivables.
- It **empowers the Reserve Bank of India to make regulations** with respect to factoring business.

03.5.3. INDIAN SHIPPING INDUSTRY

Why in News?

Recently, the Union Cabinet approved a scheme for promotion of **Flagging in merchant ships** in India while Parliament also passed the **Marine Aids to Navigation Bill, 2021.**

What role does Shipping Industry play in the Economy?

As far as the Indian subcontinent is concerned, shipping plays an important role in the transport sector of India's economy.

- Approximately, **95 percent of the country's trade by volume** (70 percent in terms of value) is moved by sea.
- With a **coastline close to 7517 km and 12 major & 187 minor ports** India happens to be a potential destination for shipping and transshipment in the futures to come.
- The industry offers numerous benefits like- **capabilities to transport large freight, is cost effective, eco-friendly** and **creates employment in coastal regions** among others.

How can Marine Aids to Navigation Bill, 2021 help the industry?

It seeks to **incorporating global best practices** and **comply** to India's International obligations under

- **International Convention for the Safety of Life at Sea, 1974.**
- **International Association of Marine Aids to Lighthouse Authorities Maritime Buoyage System.**

Important Terms to know before recent provisions
- **'Flagging In'** is the process of adding a vessel to the **national registry** (removal from national registry as 'flagging out'), legal requirement of every merchant ship to be registered to a state.
- **Right of First Refusal (ROFR),** policy measure from government to provide Indian Shipping Companies an opportunity to match the quote from L1 (lowest bidder) in cargo import.

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It provides a **user-friendly legal framework** for **development, maintenance, and management** of aids to navigation across India through provisions on:

- Definition on **aid to navigation** and on **vessels,** based on the modern state-of-the-art technologies of marine navigation.
- Appointment of **Director General of Aids to Navigation** and **Central Advisory Committee** to advise the central government on matters related to aids to navigation.
- Designate any aid to navigation as **Heritage Lighthouse**.
- Identifying **offences and penalties** for **intentional obstruction or damages** to any aid to navigation with fine and punishment.
- **Training and Certification** for operating any aid to navigation and vessel traffic service.

Scheme for promotion of Flagging In merchant ships

It is a **subsidy scheme** to support domestic shipping industry in global tenders by Ministries and CPSEs for cargo import.

Potential Benefits

- Enhance **fleet size** to provide **economic, commercial,** and **strategic** advantages
- **Increased competitiveness** by offsetting high operational costs
- **Increased training** and **jobs opportunity** for Indian seafarers
- **Savings on Foreign Exchange** with increase in tax collection
- Help in **development of ancillary industry** like ship repair, banking etc.

3.5.4. MINISTRY OF HEAVY INDUSTRIES LAUNCHED SIX TECHNOLOGY INNOVATION PLATFORMS

Why in News?

Recently, Ministry of Heavy Industries launched six technology innovation platforms **for development of technologies for globally competitive manufacturing in India.**

Platform	Developed by	Focus on
Drishti	Central Manufacturing Technology Institute, Bangalore	Machine tool sector.
Technology & Innovation Platform	HMT in association with IISc Bangalore	Import reduction in machine tool sector.
SanRachna, a digitally enabled platform	Bharat Heavy Electricals Limited	Renewable energy and power electronics sector
Kite (knowledge integration for technology enrichment)	IIT Madras	Virtual reality, automation, advance manufacturing technologies and robotics.
ASPIRE (Automotive Solutions Portal for Industry Research & Education)	International Centre for Automotive Technology	Automotive technology.
TechNovuus	Automotive Research Association of India	Sustainable mobility.

These platforms are based on four pillars:

- **Industry** seeking technology development,
- **PSUs and universities** which develop these technologies,
- **Academia and students** who host the development process and
- **R&D centres.**

3.6. INFRASTRUCTURE

3.6.1. NATIONAL URBAN DIGITAL MISSION

Why in news?

The **Ministry of Housing & Urban Affairs (MoHUA)** along with the **Ministry of Electronics and Information Technology (MeitY)** has launched **National Urban Digital Mission (NUDM)** to improve urban connectivity that will connect nearly 2,535 cities.

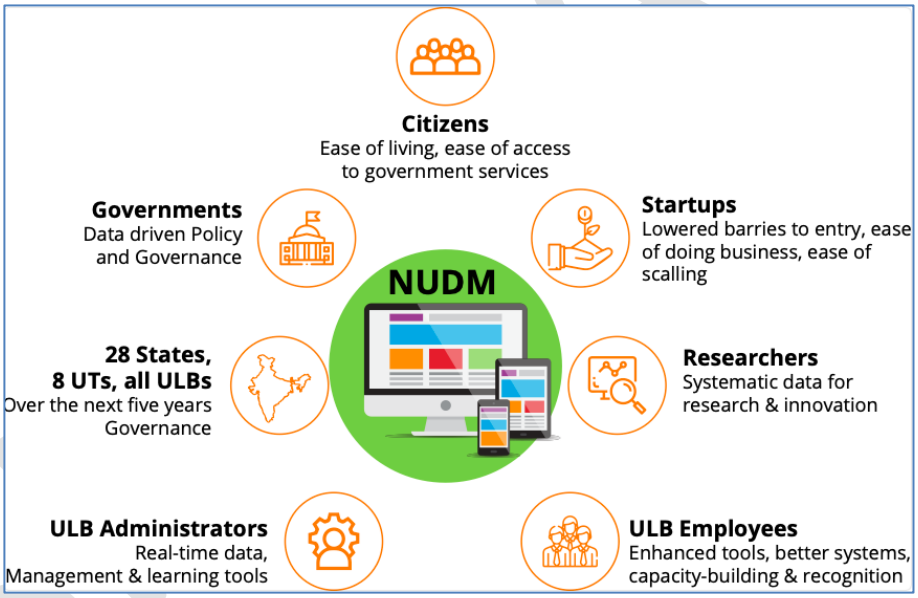
More on news

Other initiatives such as **India Urban Data Exchange (IUDX), SmartCode platform**, Smart Cities 2.0 website, and **Geospatial Management Information System (GMIS)** were also launched by MoHUA.

- **India Urban Data Exchange (IUDX):** Developed in partnership between the **Smart Cities Mission** and the Indian Institute of Science (IISc), Bengaluru to **address the problem of data silos**, both within and across cities.
  - Serves as a **seamless interface for data providers and data users**, including Urban Local Bodies (ULBs), to share, request, and access datasets related to cities, urban governance, and urban service delivery.
  - An **open-source software platform** which facilitates the secure, authenticated, and managed exchange of data amongst various data platforms.
- **Smart Code Platform**: Enables all ecosystem stakeholders to contribute to a repository of open-source code for various solutions and applications for urban governance.
  - **It addresses the challenges that ULBs face in the development and deployment of digital applications** to address urban challenges, by enabling cities to take advantage of existing codes and customizing them to suit local needs, rather than having to develop new solutions from scratch.
- **Smart Cities Mission 2.0 website** has been redesigned to serve as a **single stop for all Smart Cities initiatives**.
  - **GMIS** is integrated with this website. The website creates a **single window hub for Smart Cities Mission**.
  - The website has been developed to be used as a highly effective communication and outreach tool.

About National Urban Digital Mission

- NUDM aims to **build the shared digital infrastructure for urban India,** working across the **three pillars of people, process, and platform** to provide holistic support to cities and towns.
  - **People**: Mobilise, enable and empower stakeholders across the urban ecosystem.
  - **Processes:** Improve governance through standards and frameworks for collaboration and impact.
  - **Platforms:** Leverage technology in service of an improved quality of life for every citizen.



- It will institutionalise a **citizen-centric and ecosystem-driven approach** to urban governance and service delivery in cities by 2022 and across all cities and towns in India by 2024.
- **Objectives of NUDM:**
  - To **catalyse an urban national open digital ecosystem (u-NODE)** that leverages NUDM build new platforms, solutions and innovations.
  - To **create open standards and enforce the adoption of open standards** by all national digital urban stakeholders.
  - To **establish registries at appropriate levels** to create single source of truth in respect of urban assets, service delivery, urban data and actors.
  - To **promote the development of nationally scalable application systems** with a special focus on achieving the Sustainable Development Goals (SDGs) for urban.
  - To **adopt the best principles of cooperative federalism** while working with the States, Union Territories and ULBs for the realization of the vision.
  - To provide for **enhancing the efficiency and effectiveness of governance** at all levels.

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3.6.2. LOGISTICS SECTOR

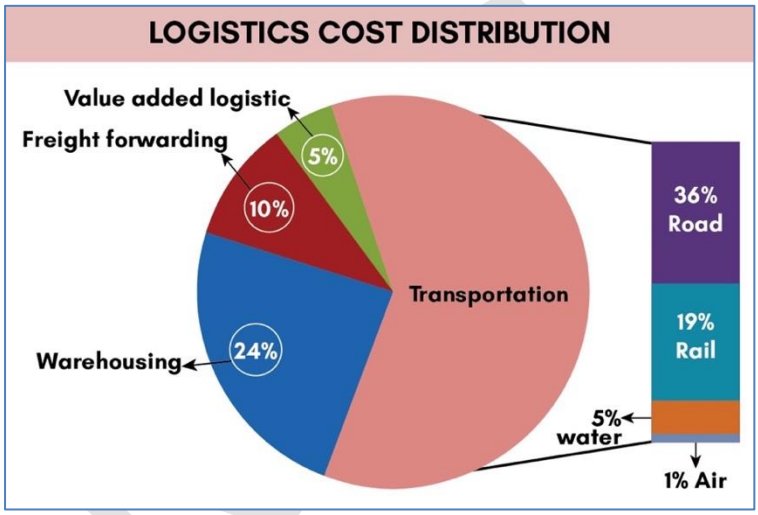
Why in news?

The Logistics Division of the Ministry of Commerce and Industry has unveiled plans for the **'Freight Smart Cities'.**

More about scheme

- To begin with, **10 cities will be developed** as Freight Smart cities. Further, **an institutional mechanism** involving the Government, private stakeholders like logistics services providers, users and citizens **will be set up.**
- **To enhance the urban freight system,** measures have been divided into four categories- vehicle use optimization, infrastructure development, demand and land use planning, and technology adoption.

Logistics industry in India



- Currently, **transportation is considered to be most crucial logistics activity** which almost accounts for 50-60% of logistics cost followed by warehousing (Refer Fig).
- The Size of Logistics Industry in India is $215 billion.
    - It provides livelihood to **more than 22 million people** and improving the sector will facilitate 10 % decrease in indirect logistics cost leading to the **growth of 5 to 8% in exports.**
- Increasing investments and trade points toward a **healthy outlook for the Indian freight sector**.
    - **Port capacity** is expected to grow at a CAGR of 5% to 6% by 2022.
    - **Indian Railways** aims to increase its freight traffic from 1.1 billion tons in 2017 to 3.3 billion tons in 2030.
    - **Freight traffic on airports** in India has the potential to reach 17 million tons by FY40.

Logistics performance Index (LPI)

- In 2018, India was ranked **44th in the Logistics Performance Index**, a measure through which the **World Bank ranks countries** based on their logistics performance.
- LPI is the weighted average of the country scores on the **six key dimensions**:
    - **Efficiency** of the clearance process (i.e., speed, simplicity and predictability of formalities) by border control agencies, including customs;
    - Quality of trade and transport related **infrastructure** (e.g., ports, railroads, roads, information technology;
    - Ease of arranging **competitively priced shipments**;
    - **Competence and quality** of logistics services (e.g., transport operators, customs brokers);
    - Ability to **track and trace consignments**;
    - **Timeliness** of shipments in reaching destination within the scheduled or expected delivery time.

Related News

Inland Vessels Bill, 2021

- It will **replace the Inland Vessels Act, 1917** to provide for a **uniform regulatory framework** for Inland vessel navigation across the country.
- **Major Provisions**
    - The Govt will prescribe classification, standards of design, construction and crew accommodation, and type and periodicity of surveys, for **mechanically propelled inland vessels**.
    - A mandatory **certificate of survey**, **registration** and **insurance policy** for vessels before operation.
    - It will ensure **safe carriage of goods and passengers** through
        - ✓ **Navigation safety standards**.
        - ✓ **Pollution standards** on discharge.
        - ✓ Fix **manning requirements** with **inquiry into all accidents.**
    - Central Government will maintain **electronic database on Inland Vessels.**
- **A Development Fund** for emergency preparedness, containment of pollution and boosting Inland navigation.

Airport Economic Regulatory Authority of India (Amendment) Bill, 2021

- It seeks to **amend the Airports Economic Regulatory Authority of India Act, 2008,** which established the Airport Economic Regulatory Authority (AERA).
  - **AERA regulates tariffs** and other charges for **aeronautical services rendered at major airports in India.**
- **Major provisions**
  - **Extend the definition of "major airports".**
    - ✓ The government may designate any airport as a major airport by a notification.
      - > The 2008 Act designates an airport as a major airport if it has annual passenger traffic of at least 35 lakh.
  - **Grouping of airports and notify the group as a major airport.**
- With this, the Bill seeks to group profitable airports with non-profitable ones.

3.7. INDICES IN NEWS

Global Manufacturing Risk Index	• In Cushman & Wakefield's 2021 Global manufacturing risk index, India has overtaken the United States (US) to become the **second-most sought-after manufacturing destination** globally.
	  ○ **China** remains at number one position.
	• **About Global Manufacturing Risk Index**
	  ○ The index **assessed the most advantageous locations** for global manufacturing among 47 countries **in Europe, the Americas and Asia-Pacific (APAC).**
	  ○ The rankings in the report is based on a **range of factors** including
	  ✓ Risk and cost factors,
	  ✓ Political and economic risk,
	  ✓ Market conditions and labor costs,
	  ✓ Market Access.

Financial Inclusion Index (FII)	• FII is a **comprehensive index to capture the extent of financial inclusion** across the country as **recommended by RBI under its National Strategy for Financial Inclusion 2019-2024.** • It **incorporates details of banking, investments, insurance, postal as well as the pension sector** in consultation with the government and regulators. • It **captures information on various aspects of financial inclusion on a scale from 0 to 100,** where 0 represents complete financial exclusion and 100 indicates full financial inclusion. ○ The **FI-Index for the year 2021 is 53.9** as against 43.4 for the year 2017. • There are **three broad parameters** with certain assigned weights – access (35 percent), usage (45 percent) and quality (20 percent). Each parameter consists of various dimensions computed based on **97 indicators.** • The **FI-Index doesn't have a base year** reflecting cumulative efforts of all stakeholders over the years towards financial inclusion.

3.8. ECONOMIC CONCEPTS IN NEWS

LIBOR	• Reserve Bank of India (RBI) has issued an **advisory to banks and other financial institutions for transition from London Interbank Offered Rate** (LIBOR) by December 2021 to any widely accepted alternative reference rate (AAR) like ○ AONIA (Australian Interbank Overnight Cash Rate) to SARON (Swiss Average Rate Overnight) • LIBOR will be **phased out by June 30, 2023.** • **About LIBOR-** London Interbank Offered Rate (LIBOR) is a **benchmark interest rate at which major global banks lend to one another** in the international interbank market for short-term loans.

Longevity Finance	• **IFSCA (International Financial Services Centre's Authority)** has **constituted an Expert Committee** to recommend approach towards development of **Longevity Finance Hub**.
	• **Need For Longevity Finance:**
	  ○ Global estimates suggest that there are **one billion people in the silver generation** (individuals aged 60 and older) with a combined **spending power of $15 trillion**.
	  ✓ **Development in medicinal science** and technology will further extend lifespan and longevity of the silver generation.

Payment Service	• RBI issued framework for Payment Service Operators (PSOs). • Framework, issued under provisions of Payment and Settlement Systems Act 2007, **is for payment and settlement related activities by PSOs.**

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Operators (PSOs)	• A PSO means a **person who operates an authorised payment system.** ○ Clearing Corporation of India Ltd., National Payments Corporation of India, VISA etc are some of the **authorized PSOs in India.** • Framework **places minimum standards to manage risks in outsourcing of payment and/or settlement-related activities**. • Earlier, **RBI also allowed PSOs to take direct membership of Centralised Payment Systems,** such as RTGS and NEFT.

3.9. ECONOMIC ORGANIZATIONS AND INITIATIVES IN NEWS

Africa Open DEAL (Data for the Environment, Agriculture and Land) Initiative	• This initiative has made **Africa the first continent to complete the collection of accurate, comprehensive and harmonized digital land use and land use change data.** • The data collection and analysis initiative is led by the Food and Agriculture Organization (FAO) and the African Union Commission (AUC). ○ It has revealed **7 billion trees outside forests for the first time** and discloses more forests and arable lands than were previously detected.
Secured Logistic Document Exchange (SLDE)	• **As part of the digital initiative to improve logistics efficiency, reduce logistics cost** etc, the government has launched SLDE. ○ It will **replace the present manual process** of generation, exchange and compliance of logistics documents **with a digitized, secure and seamless document exchange system.** • Also, a **GreenHouse Gas Emission calculator was launched** which is an efficient, user-friendly tool and provides for calculating and comparing GHG emissions across different transportation modes.
Platform for Regulated Entities for Integrated Supervision and Monitoring (PRISM)	• The Reserve Bank of India (RBI) has put in place PRISM, a **web-based end-to-end workflow automation system, to strengthen compliance by supervised entities** (SEs), including banks and non-banking financial companies. ○ PRISM will have **various functionalities** (inspection; compliance; incident functionality for cyber security; complaints; and returns functionalities), **with built-in remediation workflows, time tracking, notifications and alerts**, management information system (MIS) reports and dashboards. • This is **aimed at helping SEs to strengthen their internal defences, resilience and bringing focus on root cause analysis** (RCA).

4. ENVIRONMENT

4.1. CLIMATE CHANGE

4.1.1. CLIMATE FINANCE

Why in News?

The report titled 'The State of Cities Climate Finance' was recently released by the Cities Climate Finance Leadership Alliance and the World Bank.

Cities Climate Finance Leadership Alliance

- It is a coalition of leaders committed to deploying finance for city level climate action at scale by 2030.
- It is the only multi-level and multi-stakeholder coalition aimed at closing the investment gap for urban subnational climate projects and infrastructure worldwide.

Key Highlights of the report

- An average of $384 billion was invested in urban climate finance annually in 2017-2018.
- Urban climate finance flows are heavily concentrated in OECD countries and China.
- Vastly insufficient amounts of urban climate finance were invested in many developing economy regions, including South Asia and sub-Saharan Africa.
- Finance for adaptation projects amounted to $7 billion in 2017-2018, representing 9 per cent of investments tracked at the project level, against the 91 per cent ($69 billion) for mitigation and dual uses.

About Climate Finance

- Climate finance refers to **local, national or transnational financing**—drawn from public, private and alternative sources of financing—that seeks to support mitigation (reducing GHG emissions) and adaptation (adapting to the adverse effects and reduce the impacts of a changing climate) actions that will address climate change.
- The **United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol** and the **Paris Agreement** call for financial assistance from Parties with more financial resources to those that are less endowed and more vulnerable.

Financial mechanisms established under UNFCCC and related Agreements	
Global Environment Facility (GEF)	• It has served as an operating entity of the financial mechanism since the Convention's entry into force in 1994. It manages two funds- ○ **Special Climate Change Fund (SCCF)**, established in 2001, to finance projects relating to: adaptation; technology transfer and capacity building; energy, transport, industry, agriculture, forestry and waste management; and economic diversification. ○ **Least Developed Countries Fund (LDCF)**, established to support a work programme to assist Least Developed Country Parties (LDCs) carry out the preparation and implementation of national adaptation programmes of action (NAPAs).
Adaptation Fund (AF)	• It was established in 2001 to finance concrete adaptation projects and programmes in developing country Parties to the **Kyoto Protocol** that are particularly vulnerable to the adverse effects of climate change.
Green Climate Fund (GCF)	• It was established in COP 16, in 2010 and developed countries had pledged to **mobilise US$ 100 billion per year** by 2020 through this fund to support developing countries raise and realize their Nationally Determined Contributions (NDC) ambitions towards low-emissions, climate-resilient pathways.
Other Funds and instruments of financing	
UN-backed international climate funds	• **Clean Technology Fund (CTF):** It aims at empowering transformation in developing countries by providing resources to scale up low carbon technologies. • **Climate Investment Funds (CIFs):** It aims to accelerate climate action by empowering transformations in clean technology, energy access, climate resilience, and sustainable forests in developing and middle-income countries. • **UN- Reducing emissions from deforestation and forest degradation (REDD):** It aims to protect forests, a pre-eminent nature-based solution to the climate emergency. • **Net Zero Asset Owner Alliance**: It has 29 members, including pension funds, insurance companies, and sovereign wealth funds, and is working on substantial methodologies to align portfolios with net zero Paris targets.
Other international funds	• **Climate Change Fund of Asian Development Bank (ADB):** It was established in 2008 to facilitate greater investments in developing member countries (DMCs) to effectively

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	address the causes and consequences of climate change, by strengthening support to low-carbon and climate-resilient development. • **Forest Carbon Partnership Facility (FCPF):** It is a global partnership of governments, businesses, civil society, and Indigenous Peoples focused on reducing emissions from deforestation and forest degradation, forest carbon stock conservation, the sustainable management of forests, and the enhancement of forest carbon stocks in developing countries, activities commonly referred to as REDD+.
National and local Sources of raising finances	• **Allocations from National Governments:** For example, National Adaptation Fund for Climate Change (NAFCC) is a Central Sector Scheme which was set up in the year 2015-16 to support concrete adaptation activities which mitigate the adverse effects of climate change. • **Carbon pricing instruments:** These include a carbon market approach (where an Emissions Trading Scheme is established, and carbon credits are bought and sold based on a market price per tCO_2e); Carbon emissions tax approach (that can also be in the form of a fossil fuel tax or removal of fossil fuel subsidies) etc. o China's national carbon market, the **world's largest emissions trading system** was launched recently.

4.2. KIGALI AMENDMENT TO THE MONTREAL PROTOCOL

Why in news?

Cabinet recently approved Ratification of Kigali Amendment to the Montreal Protocol.

About Kigali Amendment

- Under the Kigali Amendment (adopted in **2016** and **entered** into **force** in **2019**), **Parties to the Montreal Protocol will phase down production and consumption of Hydrofluorocarbons(HFCs) due to their contribution to greenhouse gas emissions.**
  - HFCs are **a group of industrial chemicals primarily used for cooling and refrigeration.** While HFCs do not deplete stratospheric ozone layer, t**hey have high global warming potential ranging from 12 to 14,000.**
- It divides the signatory nations into **3 groups** with a **four-step path** to achieve 80% reduction in HFCs consumption by 2047.
  - It is a **legally binding agreement** designed to create rights and obligations in international law.
- Up till July 2021, **122 countries have ratified** the Kigali amendment.
- Being under **Group 2,** India will develop its **national strategy** for phasing down of **Hydrofluorocarbons by 2023** (after consultation with industry stakeholders).

Montreal Protocol

- Montreal Protocol (1987) on Substances that Deplete the Ozone Layer, is an **international environmental treaty for protection of Ozone Layer** by phasing out production and consumption of man-made chemicals referred to as ozone depleting substances.
- It is **only UN treaty that has been ratified by all 198 UN Member States.**
- **India became a Party** to the Protocol on in 1992 and successfully met the phase out targets of all the Ozone Depleting Substances as per its Schedule.
  - An **Ozone Cell has been setup** (under the Environment Ministry) **as a National Ozone Unit (NOU)** to render necessary services for effective and timely implementation of the Montreal Protocol and its ODS phase-out program in India.
- The Kigali Amendment entered into force in 2019. It requires ratifying countries to gradually reduce their use of hydrofluorocarbons by 80-85 per cent by the late 2040s.

TARGETS FOR REDUCTION

	As parties (Developing countries) - Group 1	As parties (Developing countries) - Group 2	Non parties (Developing countries)
Baseline formula	Average HFC consumption levels for 2020-2022 + 65% of hydrochlorofluorocarbon (HCFC) baseline	Average HFC consumption levels for 2024-2026 + 65% of hydrochlorofluorocarbon (HCFC) baseline	Average HFC consumption levels for 2011-2013 + 65% of hydrochlorofluorocarbon (HCFC) baseline
Freeze	2024	2028	-
1st step	2029 - 10%	2032 - 10%	2019 - 10%
1nd step	2035 - 30%	2037 - 20%	2024 - 40%
3rd step	2040 - 50%	2042 - 30%	2029 - 70%
4th step			2034 - 80%
Plateau	2045 - 80%	2047 - 85%	2036 - 85%

*For Belarus, Russian Federation, Kazakhstan, Tajikistan, Uzbekistan, 25% HCFC component of baseline and different initial two steps (1) 5% reduction in 2020 and (2) 35% reduction in 2025.

Notes:

1. **Group 1:** Article 5 parties not part of Group 2
2. **Group 2:** Bahrain, India, the Islamic Republic of Iran, Iraq, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia and the United Arab Emirates.
3. Technology review in 2022 and every five years.
4. Technology review four to five years before 2028 to consider the compliance deferral of two years from the freeze of 2028 of Article 5 Group 2 to address growth in relevant sectors above certain threshold.

- India will complete its phase down of HFCs in **4 steps from 2032 onwards with cumulative reduction of 10% in 2032, 20% in 2037, 30% in 2042 and 80% in 2047.**

4.3. IPCC'S SIXTH ASSESSMENT REPORT

Why in News?

The report titled "Climate Change 2021 -The Physical Science Basis" presents **key findings of Working Group I (WGI) contribution to Sixth Assessment Report (AR6) released by the** Intergovernmental Panel on Climate Change (IPCC).

About IPCC

- Created in 1988 by **the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP)**, the objective of the IPCC is to provide governments at all levels with scientific information that they can use to develop climate policies.
- The IPCC currently has 195 members including India.
- In 2007, the **IPCC and U.S. Vice-President Al Gore were jointly awarded the Nobel Peace Prize** for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change.

About the report

- The IPCC prepares comprehensive Assessment Reports about the state of scientific, technical and socio-economic knowledge on climate change, its impacts and future risks, and options for reducing the rate at which climate change is taking place.
- So far, **five assessment reports have been produced**, the first one being released in 1990.
- This AR6 will be an update of the AR5 released in 2013.
- **Improvements since AR5:**
  - **Improvements in observationally based estimates and information from paleoclimate archives** provide a comprehensive view of each component of the climate system and its changes to date.
  - **New climate model simulations, new analysis, and methods combining multiple lines of evidence lead** to improved understanding of human influence on a wider range of climate variables, including weather and climate extremes.

Key Findings

Observations	Related Data and Statistics
Current State of the Climate	
Human influence has unequivocally warmed the atmosphere, ocean and land: • Observed increases in well-mixed greenhouse gas (GHG) concentrations since around 1750 are unequivocally caused by human activities. • Human influence has been linked with widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere such as- o Global retreat of glaciers. o Sea level rise. o Drop in oxygen levels in many upper ocean regions. o Observed precipitation changes. o Changes in near-surface ocean salinity. o Global acidification of the surface open ocean. o Decrease in Northern Hemisphere spring snow cover.	• **Global surface temperature was 1.09 °C higher in 2011– 2020 than 1850–1900**, with larger increases over land (1.59 °C) than over the ocean (0.88 °C). • Each of the last four decades has been successively warmer than any decade that preceded it since 1850. • **Human-caused global surface temperature increase** from 1850–1900 to 2010–2019 is estimated to be **1.07°C**. • The **Arctic sea ice area has decreased (about 40%** in September and about 10% in March) in between 1979–1988 and 2010–2019. • **Global mean sea level increased by 0.20 m between 1901 and 2018**, with average rate of sea level rise increasing from 1.3 mm yr between 1901-1971 to 3.7 mm yr between 2006-2018. • **Climate zones have shifted poleward in both hemispheres**, and the **growing season has on average lengthened by up to two days per decade since the 1950s** in the Northern Hemisphere extratropics.

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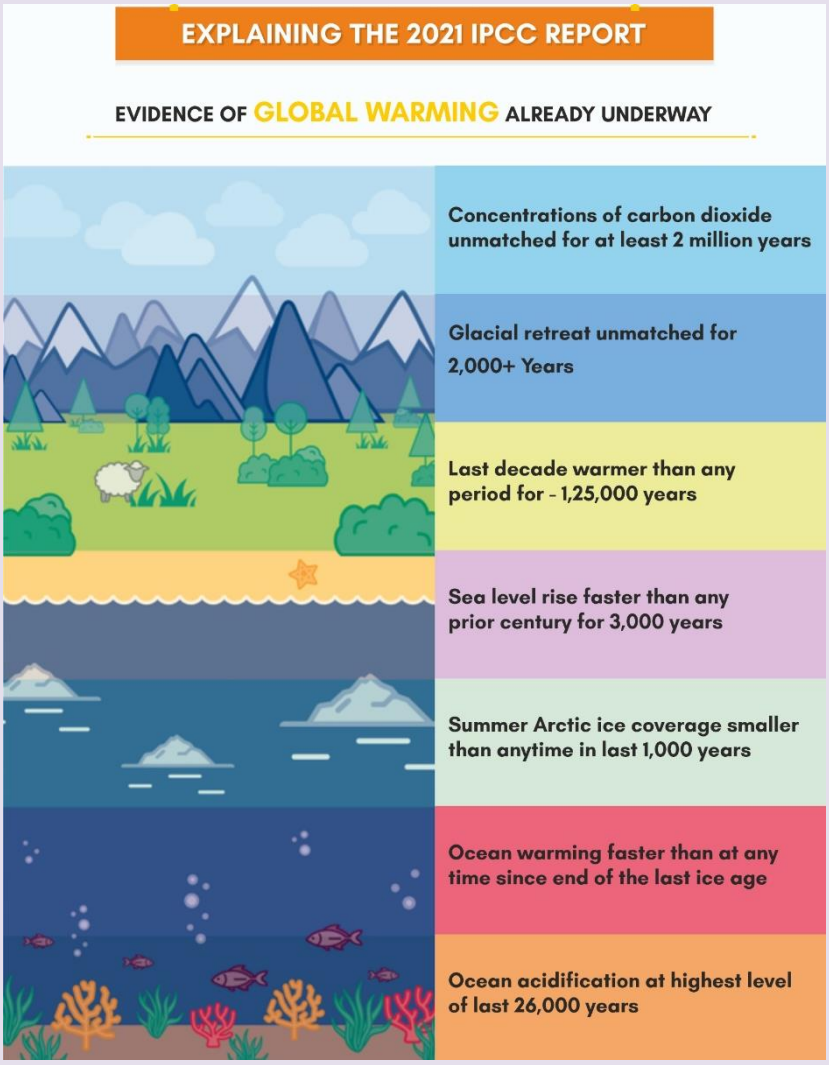
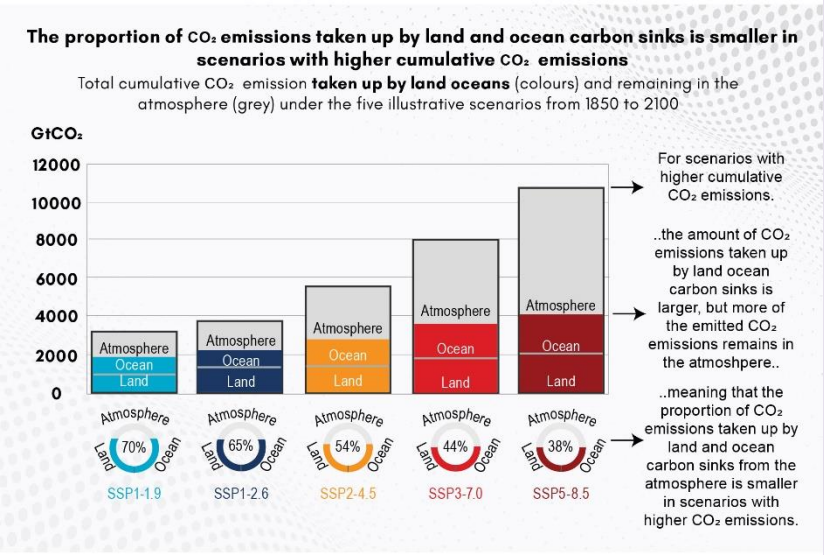
Scale of recent changes across the climate system are unprecedented.	
Human-induced climate change is already affecting many weather and climate extremes in every region across the globe.	• Hot extremes (including heatwaves) have become more frequent and more intense across most land regions since the 1950s. • Marine heatwaves have approximately doubled in frequency since the 1980s. • The frequency and intensity of heavy precipitation events have increased since the 1950s over most land area. • Tropical cyclone occurrence has increased over the last four decades.
Human-caused net positive radiative forcing causes an accumulation of additional energy (heating) in the climate system. • Heating of the climate system has caused global mean sea level rise through ice loss on land and thermal expansion from ocean warming.	• **Ocean warming accounted for 91% of the heating in the climate system,** with land warming, ice loss and atmospheric warming accounting for about 5%, 3% and 1%, respectively. • **Thermal expansion explained 50% of sea level rise** during 1971– 2018, while ice loss from glaciers contributed 22%, ice sheets 20% and changes in land water storage 8%. • The equilibrium climate sensitivity (the global mean surface air temperature increase that follows a doubling of atmospheric carbon dioxide) is estimated to be 3°C.
Possible Climate Futures	
• **Global surface temperature will continue to increase until 2050 under all emissions scenarios.** • With every increment of global warming, changes get larger in regional mean temperature, precipitation and soil moisture. • **Continued global warming is projected to further intensify the**	• Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in carbon dioxide (CO_2) and other greenhouse gas emissions occur in the coming decades.

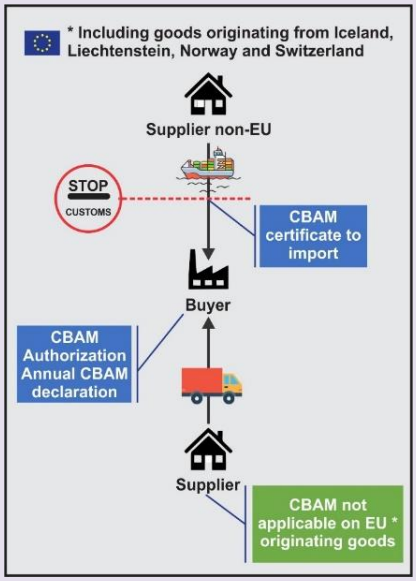
global water cycle, including its variability, global monsoon precipitation and the severity of wet and dry events. • With increase in CO_2 emissions, the ocean and land carbon sinks will become less effective at absorption of CO_2 from the atmosphere. • **Many changes due to past and future greenhouse gas emissions are irreversible**, especially changes in the ocean, ice sheets and global sea level.	

Regional findings for India

Following impacts are likely to be seen in India (South Asian region)-

- **Heatwaves and humid heat stress will be more intense and frequent** during the 21st century all over South Asia.
- **Both annual and summer monsoon precipitation will increase** during the 21st century, with enhanced interannual variability.
- **Increases in precipitation and rivers floods**.
- **Fire weather seasons are projected to lengthen and intensify**.
- **Covered areas and snow volumes will decrease in most regions of the Hindu Kush Himalaya** during the 21st century and **snowline elevations will rise and glacier volumes are likely to decline** with greater mass loss in higher CO_2 emissions scenarios.
- **Regional-mean sea level continues to rise** and will contribute to more **frequent coastal flooding** and higher Extreme Total Water Level (ETWL) in low-lying areas and **coastal erosion** along sandy beaches.

4.4. GLOBAL INITIATIVES

Carbon Border Adjustment Mechanism (CBAM)	• **As part of the European Union (EU) ambitious target** of reducing 55% of carbon emissions compared to 1990 levels by 2030 (Fit for 55 Initiative), it **is pushing for the world's first carbon border tax on imported goods**- Carbon Border Adjustment Mechanism (CBAM) from 2026. ○ It **seeks to address carbon leakages** i,e. companies decamp to places with cheaper pollution costs and looser climate regulations. • A **carbon border tax is a tax on carbon emissions imposed on imported goods from countries with less strict climate policies.** It aims to **create a level playing field** between imports and domestic production. • Developing countries, including India, have opposed CBAM calling it **'discriminatory' as it will ramp up prices of their goods** in Europe and **shrink demand** and because it goes against the UN principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR–RC). 

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Updated Nationally Determined Contributions (NDCs)	• Only 110 countries that are party to the Paris **accord have submitted updated NDCs for limiting their carbon emissions.** ○ **China and India have missed U.N. deadline** • The Paris Agreement is a legally binding international treaty on climate change that was **adopted by 196 countries in December 2015 with the aim of limiting global warming to well below 2 degrees Celsius and preferably to 1.5C, compared to pre-industrial levels.** • Under the accord, **every participating country originally had until the end of 2020 to submit new or updated NDCs.**

4.5. POLLUTION

4.5.1. COMMISSION FOR AIR QUALITY MANAGEMENT (CAQM) IN THE NATIONAL CAPITAL REGION AND ADJOINING AREAS

Why in news

The Commission for Air Quality Management in the National Capital Region and Adjoining Areas Bill, 2021, was recently passed by both Houses of the Parliament, replacing the Ordinance that was promulgated in April 2021.

Functions of the Commission

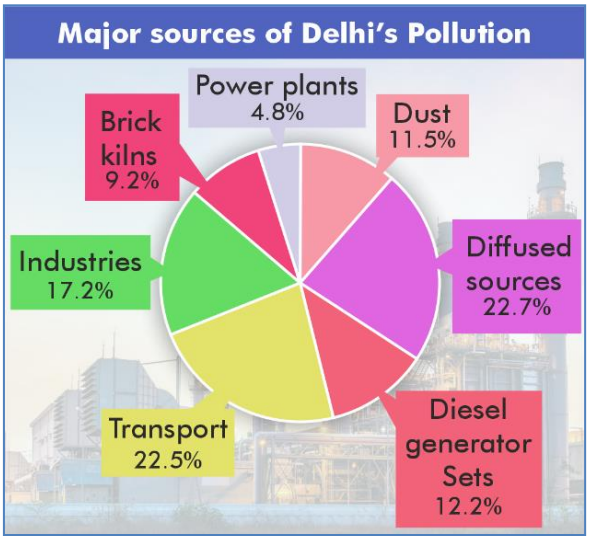
- Issuing directions on matters including inspections, or regulation which will be binding on the concerned person or authority.
- Restricting activities influencing air quality.
- Investigating and conducting research related to environmental pollution impacting air quality.
- Preparing codes and guidelines to prevent and control air pollution.

Key highlights of the Bill

- **Powers of the CAQM**: It will be the **sole authority** with jurisdiction over matters defined in the Bill (such as air quality management).
  - **In case of conflicts, directions of the Commission will prevail** over the orders of the respective state governments, the Central Pollution Control Board (CPCB), state PCBs, and state-level statutory bodies.
- **Composition:** The Commission will consist of a Chairperson, an officer of the rank of a Joint Secretary as the member-secretary and Chief Coordinating Officer, a full time member and 3 independent technical members, 3 members from NGOs among others.
  - **Selection Committee for full-time members:** The Committee will be headed by the Minister in charge of the Ministry of Environment, Forest, and Climate Change.
- **Jurisdiction:** National Capital Region (NCR) and adjoining areas **(Haryana, Punjab, Rajasthan, and Uttar Pradesh, adjoining the National Capital Territory of Delhi and NCR).**
- **Appeals** against the Commission's orders will **lie with the National Green Tribunal (NGT).**
- **Penalties:** Contravention of provisions of the Bill, or orders and directions of the Commission will be punishable with imprisonment of up to **five years, or fine of up to one crore rupees, or both.**
  - The Bill **excludes farmers from the scope of these penalties**. However, the Commission may **collect an environmental compensation from farmers causing pollution by stubble burning.**

Reasons for rise in pollution in Delhi during winter

- **Dip in temperatures:** As temperature dips, the inversion height — which is the layer beyond which pollutants cannot disperse into the upper layer of the atmosphere – is lowered. The concentration of pollutants in the air increases when this happens.
- **Dip in wind speed:** Due to stagnant winds in winters, dust particles and pollutants get locked in the air and affect weather conditions, resulting in smog.
- **Biomass burning in neighbouring states.**
- **Combustion caused by Fire crackers.**



Major Anti-Pollution Policy Measures taken so far for Delhi

Graded Response Action Plan (GRAP)

- It is a set of curbs triggered in phases as the air quality deteriorates, which is typical of the October-November period. It includes strict measures such as a ban on the entry of heavy vehicles, the odd-even road rationing restrictions, and a halt of construction work, etc.

National Clean Air Program (NCAP)

- Launched in 2019, it is a five-year action plan to curb air pollution, build a pan-India air quality monitoring network, and improve citizen awareness. The programme focuses on city-specific action plans.
- It aims to reduce PM2.5 levels by 20-30 percent by 2024 (compared to 2017 levels). The plan aligns with existing policies and programmes, including the National Action Plan on Climate Change, initiatives on electric vehicles, and the Smart Cities Mission.

Other initiatives

- The introduction of BS VI (cleaner) fuel.
- Push for electric vehicles, under Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME II) scheme.
- Odd-Even as an emergency measure.
- Construction of the Eastern and Western Peripheral Expressways
- SAFAR application, etc.

4.5.2. SINGLE USE PLASTICS

Why in news?

Recently, the **Ministry of Environment, Forest, and Climate Change (MoEF&CC)** has notified the **Plastic Waste Management Amendment Rules, 2021,** which **prohibits identified single use plastic items** which have low utility and high littering potential by 2022.

What are Single-use plastics (SUP)?

- India has defined SUP as **"a plastic commodity intended to be used once for the same purpose before being disposed of or recycled"** in its Plastic Waste Management Amendment Rules, 2021.
  - These include plastic bags, straws, coffee stirrers, soda and water bottles and most food packaging.
  - The assessment of SUP was conducted by comparing **two pillars** — the **utility index of a particular type of SUP** and the **environmental impact of the same.**
  - The **product that scores low on utility and high on environmental impact** should be considered for immediate phase out.

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Key Provisions of Plastic Waste Management (PWM) Amendment Rules, 2021

The new rules will **replace the existing Plastic Waste Management Rule, 2016** (PWM Rules, 2016) that was amended in 2018.

- **Prohibition: Manufacture, import, stocking, distribution, sale and use of single-use plastic,** including polystyrene and expanded polystyrene, commodities shall be **prohibited with effect from 1st July 2022.**
  - The ban will **not apply to commodities made of compostable plastic.**
- **Thickness of plastic**: With effect from **30th September 2021, thickness of plastic carry bags has been increased** from 50 microns to 75 microns and to 120 microns with effect from the 31st December, 2022.
- **Extended Producer Responsibility (EPR):** Plastic packaging waste not covered under present notification shall be collected and managed in an environmentally sustainable way through **EPR of the producer, importer and brand owner (PIBO)** as per PWM Rules, 2016.
  - For effective implementation of EPR Guidelines, **they have been given legal force** through PWM Amendment Rules, 2021.

Extended Producer Responsibility (EPR)

- It is a policy approach under which producers are given a significant responsibility – financial and/or physical – for the treatment or disposal of post-consumer products.
- It was first brought in India by the **E-Waste Management Rules, 2011**

- **Implementing agency:** Along with state pollution bodies, **Central Pollution Control Board (CPCB)** will monitor the ban, identify violations, and impose penalties already prescribed under the Environmental Protection Act, 1986.
- **Task Force:** States and UTs had constituted the **special task force for elimination of SUP and effective implementation of the PWM Rules, 2016.**
  - Environment Ministry has also set up a **national-level task force** for making coordinated efforts in this direction.
  - State /UT Governments and concerned Central Ministries/Departments have also been requested to **develop a comprehensive action plan for elimination of SUP** and its implementation in a time bound manner.

Other Government initiatives to tackle Single Use Plastics (SUP)

- **India Plastic Challenge – Hackathon 2021:** It has been organised for students of higher educational institutions and startups recognised under the Startup India Initiative to **encourage innovation in the development of alternatives to SUPs as well as digital solutions** to plastic waste management.
- **India Plastic Pact (IPP):** India becomes first Asian country to launch IPP with the aim to tackle plastic pollution in the country, bringing together businesses from across the Indian plastics value chain to move towards a circular plastics system that aims to keep the material in the economy, and out of the environment.
- **Un-Plastic Collective (UPC):** It is a voluntary initiative launched by the UN-Environment Program-India, Confederation of Indian Industry and WWF-India to drive corporate action toward solutions on plastic leakage.
- **GloLitter Partnerships Project**: It was launched by the **International Maritime Organization (IMO) and the Food and Agriculture Organization of the United Nations (FAO)** to assists developing countries to **prevent and reduce marine plastic litter from the maritime transport and fisheries sectors** and identifies opportunities for the reduction of plastic uses in both fisheries and maritime transport sectors.

4.5.3. NATIONAL AUTOMOBILE SCRAPPAGE POLICY

Why in news?

National Automobile Scrappage Policy **was recently launched by Prime Minister at Investor Summit in Gujarat** to give a **new identity to the auto sector and to mobility of New India.**

About the policy

- It will help **scrap and phase out unfit and polluting vehicles in an environment friendly manner** to create a viable circular economy (recycle and reuse).
  - Vehicle scrapping is the process **in which End of life – vehicles are disposed of,** and its parts are recycled.
- **Key highlights**
  - **De-registrations of vehicles**
    - ✓ **Commercial vehicles to be de-registered after 15 years** in case of failure to get fitness certificate.

- ✓ **Private Vehicles be de-registered after 20 years if found unfit** or in case of failure to renew registration certificate.
- ✓ **All government vehicles** may be de-registered and scrapped after 15 years from date of registration.

- **Provides incentives to owners of old vehicles to scrap unfit vehicles** through registered scrapping centres.
- **Setting up specialised Registered Vehicle Scrapping Facilities (RVSFs)** across India.

4.5.4. LEADED PETROL: PHASED OUT GLOBALLY

Why in News?

Recently, **UNEP** announced the eradication of highly polluting **leaded petrol** from the world as **Algeria**- the last country to use this fuel, exhausted its supplies.

About Octane Rating

- **Octane rating, also known as Octane number or Octane Value,** is defined as the percentage or volume fraction of isooctane in a mixture of isooctane and normal heptane fuel where knock is initiated at the same compression ratio as in the fuel.
- It measures the **fuel's ability to resist unwanted sounds due to auto-ignition with higher octane number**. E.g., adding ethanol to petrol helps in reducing knocking as ethanol octane rating is around 109.
- For diesel fuel, **Cetane number** is used to measure the ignition delay property of the fuel, with higher cetane number meaning reduced ignition delay to avoid knocking.

About Tetraethyl Lead and its use as an Additive

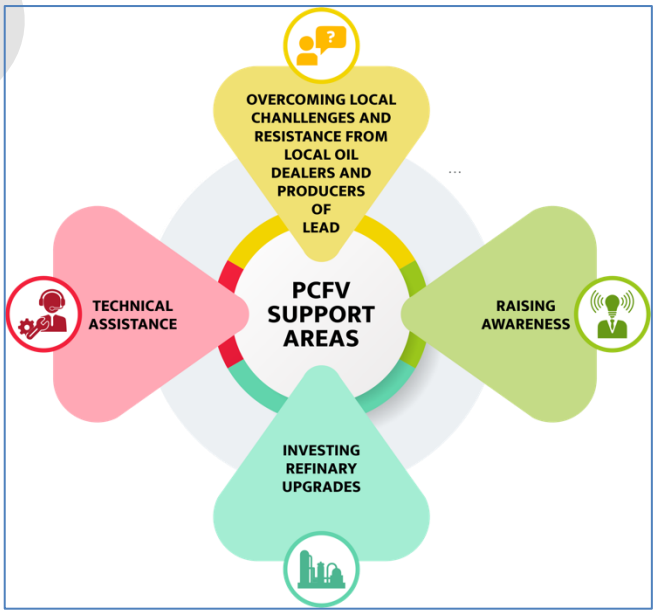
- **Tetraethyl lead** (TEL), or Organic lead, is a colorless liquid whose **antiknock properties** were first found in 1921.
- When mixed with petrol, called **Leaded Petrol**, it improves the **octane rating** of fuel as compared to unleaded petrol.
- As a result, it became a popular **additive in petrol and jet fuels** as knocking in engine causes **loss of power** with risks of **damage to the engine.**

Health Impacts of Leaded Petrol

- **Toxic in nature**, and it is **absorbed rapidly** by the skin, the lungs, and the gastrointestinal tract.
- A serious **environmental threat** to human health (identified as early as 1924), it **contaminates** the air, dust, soil, water, and crops on release through exhaust fumes, evaporation losses and accidental spills.
- Exposure to it can cause **Heart disease, Cancer, stroke,** and **lower IQ** (especially in children) by impacting brain development.

Partnership for Clean Fuels and Vehicles (PCFV) initiative by UNEP

Launched in **2002** at the World Summit on Sustainable Development, PCFV is a **global public-private** initiative to reduce vehicular air pollution through **promotion of cleaner fuels and vehicles** in developing countries.



- PCFV worked towards **global elimination** of leaded petrol (**graduated decline of Sulphur** as well) by providing support in different areas. (In India, it was phased out in **2000**).
- The successful elimination of leaded petrol elimination will prevent **more than 1.2mn premature deaths, better IQ among children** and global **saving of over $2.4tn annually.**

4.5.5. LAND DEGRADATION

Why in news?

The Desertification and Land Degradation Atlas of India for the year 2018-19 was recently released by Space Applications Centre (SAC), Ahmedabad.

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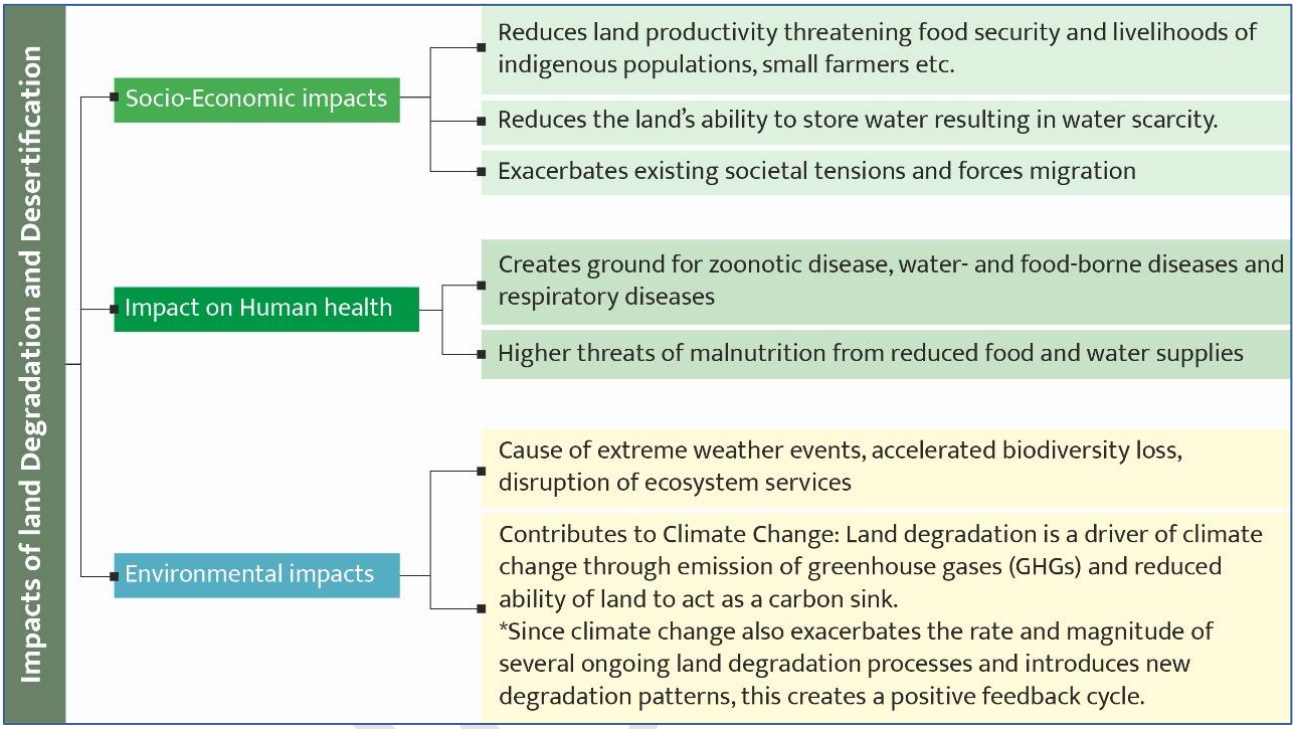
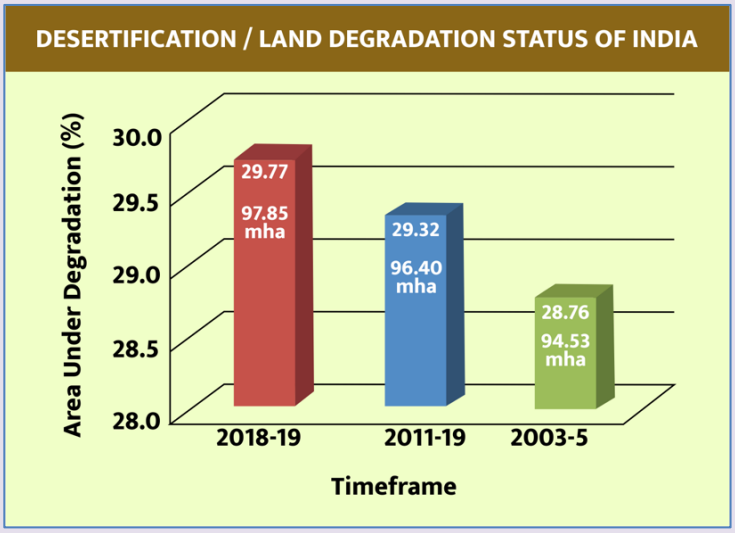
Land degradation and Desertification

- Land degradation is defined as a negative trend in land condition, caused by direct or indirect human-induced processes including anthropogenic climate change, expressed as long-term reduction or loss of at least one of the following: **biological productivity, ecological integrity, or value to humans**.
  - Forest degradation is land degradation that occurs in forest land.
  - Land degradation within dryland regions (arid, semi-arid and dry sub-humid regions) is termed as Desertification, which turns fertile land into desert.
- Its **major drivers** include natural processes such as wind and water erosion, water logging, salinity/ alkalinity, mass movement, frost heaving and frost shattering etc. and anthropogenic activities such as land use change, mining/quarrying, livestock grazing, brick kiln, industrial effluents, pollution etc.



Status of Land degradation and Desertification in India: Key Findings of Desertification and Land Degradation Atlas of India

- **Increase in Area under Degradation and desertification.**
- **Prevalent processes responsible for desertification/ land degradation in the country: Water Erosion**, followed by Vegetation Degradation and Wind Erosion.
- **State wise findings**: In 2018-19, around 23.79% of the area undergoing desertification/land degradation was contributed by Rajasthan, Maharashtra, Gujarat, Karnataka, Ladakh UT, Jharkhand, Odisha, Madhya Pradesh and Telangana (in descending order).
  - States like Jharkhand, Rajasthan, Delhi, Gujarat and Goa are showing more than 50% area under desertification/land degradation.



Steps taken by India to tackle the issue of land degradation

- **India is a party to the United Nations Convention to Combat Desertification (UNCCD),** which has pledged to reach land degradation neutrality targets by 2030 as a part of the Convention's Land Degradation Neutrality Strategy.
- India promotes **sustainable land management practices in agriculture sector** through schemes such as Pradhan Mantri Fasal Bima Yojana (PMFBY), Soil Health Card Scheme, Soil Health Management Scheme, Pradhan Mantri Krishi Sinchayee Yojna (PKSY), Per Drop More Crop, etc. which are helping to reduce land degradation.

- Ministry of Environment Forests and Climate Change (MoEFCC) consolidated the intervention on **participatory forest management** through the National Forest Policy, 1988, and then through enabling guidelines in 1990 on **Joint Forest Management (JFM).**
  - Joint Forest Management (JFM) is partnership involving both the forest departments and local communities in natural forest management.

MoEFCC is implementing three major schemes for development of forest areas i.e. **National Afforestation Programme (NAP)** scheme**, National Mission for a Green India (GIM)** and **Forest Fire Prevention & Management Scheme (FFPM).**

International efforts to combat Land degradation	
United Nations Convention to Combat Desertification (UNCCD)	• Established in 1994, it is the sole legally binding international agreement linking environment and development to sustainable land management. • **Initiatives launched under the UNCCD to combat land desertification and degradation-** o **Land Degradation Neutrality (LDN) Target Setting Programme:** UNCCD in collaboration with multiple international partners, are supporting interested countries with their national LDN target setting process. To date, over 120 countries, **including India,** have committed to setting LDN targets. o **Land Degradation Neutrality Fund (LDN Fund):** Officially launched at UNCCD COP 13 in Ordos, China, it is the first-of-its-kind investment vehicle leveraging public money to raise private capital for sustainable land projects. o **Global Land Outlook (GLO)** is a strategic communications platform and associated publications of the UNCCD secretariat that demonstrates the central importance of land quality to human well-being. o **Land for Life Programme** was launched at the tenth UNCCD Conference of the Parties (COP10) in 2011 as part of the **Changwon Initiative**. The Programme seeks to address the challenges of land degradation, desertification and mitigation of drought.
Bonn Challenge	• Launched by the **Government of Germany and IUCN** in 2011, it is a global goal to bring 150 million hectares of degraded and deforested landscapes into restoration by 2020 and 350 million hectares by 2030. India has pledged to restore 21 million ha of degraded and deforested land by 2030.
Global Initiative on Reducing Land Degradation	• It aims to strengthen the implementation of existing frameworks to prevent, halt, and reverse land degradation within **G20 member states** and globally.
Reducing emissions from deforestation and forest degradation (REDD+)	• It is a mechanism **developed by Parties to the United Nations Framework Convention on Climate Change (UNFCCC).** o It creates a financial value for the carbon stored in forests by offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development.

4.5.6. INITIATIVES TO TACKLE POLLUTION

Sand from Overburden	• **Coal India Ltd. (CIL)** has released a 5 year roadmap aimed at **minimising environmental pollution** from **sand siltation** and **illegal sand mining**, to produce sand from overburden. o During opencast mining of coal, the **strata lying above coal seam is known as overburden,** comprising of clay, **alluvial sand and sandstone** with rich silica content. o The **overburden is removed** to expose and extract coal from beneath. After completion of coal extraction, the overburden is **used for back filling to reclaim the land** in its original shape.
Water plus city	• Indore, the country's cleanest city, has now been **declared as the first 'water plus' city of India** under the Swachh Survekshan 2021. o A city can be declared as Water Plus provided, **all wastewater** released from households, commercial establishments etc. is **treated to a satisfactory level** before releasing the treated wastewater to the environment. • Swachh Survekshan is an **annual survey of cleanliness, hygiene and sanitation** in cities and towns across India launched as part of the Swachh Bharat Mission.
Forum for Decarbonizing Transport	• **NITI Aayog and World Resources Institute (WRI)** India has jointly launched 'Forum for Decarbonizing Transport' in India. • It is part of the **Nationally Determined Contribution-Transport Initiative for Asia (NDC-TIA) project.** o **NDC-TIA** is a joint programme of seven organisations that will engage **China, India, and Vietnam** with the objective to **facilitate a paradigm shift to zero-emission transport across Asia.**

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	✓ The project is part of the International Climate Initiative (IKI) and NITI Aayog is the implementing partner for India. ✓ Transport in India is **the third most CO_2 emitting sector.**
Biomethanation	• United Nations Industrial Development Organization (UNIDO) and Ministry of New and Renewable Energy (MNRE) launched the Global Environment Facility (GEF)-**funded loan interest subvention scheme** that provides financial assistance to **innovative waste to energy** biomethanation projects and business models. o Biomethanation is a process by which organic material is microbiologically converted under anaerobic (without oxygen) conditions to biogas.
India's first Smog Tower	• The 'experimental' Smog tower has been **set up at New Delhi's Connaught place to purify air in a 1-km radius** around the structure. • The tower **constitutes a pilot study to assess the reduction of particulate air pollution in urban areas**. o **Air will be sucked in from the top, filtered and released through the fans at the bottom.** o The tower **comprises 5,000 electrostatic air filters that can filter out microparticles**, including those that constitute smoke, household dust and pollen.
Sukhet Model	• The **Prime Minister has praised the 'Sukhet Model'** adopted by Dr Rajendra Prasad Agriculture University, Madhubani **to check pollution in villages.** o Under this project, **garbage and dung from houses are collected door to door and converted into vermicompost**. o From the **income generated from the sale of compost, farmers are provided LPG cylinders.** • The model has **four-fold benefits**: pollution free environment, disposal of waste, monetary assistance to villagers for gas cylinders and availability of organic fertilisers to farmers.

4.6. BIODIVERSITY

4.6.1. CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS (CMS)

Why in news?

A report was conducted to identify the impacts of plastic pollution on land and freshwater migratory species **protected by the Convention on the Conservation of Migratory Species of Wild Animals (CMS).**

About CMS or Bonn Convention, 1979

- It is an environmental treaty of the **United Nations to promote cooperation and action for species and habitat conservation**.
- Species of conservation need are listed within Appendices I and II.
  - **Appendix I species** are those that are threatened with extinction.
  - **Appendix II species** are those that would benefit from international cooperation for their conservation.
- **India** has been a **signatory to the treaty since 1983.**

More on the news

- Report is the result of collaboration between **Conservation of Migratory Species and the UN Environment Programme** as part of the **Japan-funded Counter MEASURE II project** to identify sources and pathways of plastic pollution in river systems in Asia.
- **Key highlights**
  - Study noted that **53 million tonnes of plastic could enter aquatic systems annually by 2030,** which could eventually increase to 90 million tonnes.
  - Report highlighted case study of **Ganges and Irrawaddy dolphins, dugong or sea cow, Asian elephants and various avian species** that were adversely impacted.
  - **Major threats highlighted by report include** - entanglement in plastic waste such as fishing nets; ingestion of plastic impacting food web; Space constraint and hindrance for species living on air-water interface owing to plastic waste etc.
  - Migratory birds such as the **Black-faced Spoonbill and the Osprey had been observed making nests out of plastics,** often resulting in the entanglement of their chicks.

4.6.2. NEW RAMSAR SITES

Why in news?

Four more sites of India (2 each from Gujarat and Haryana) have been added to Ramsar List as Wetlands of International Importance.

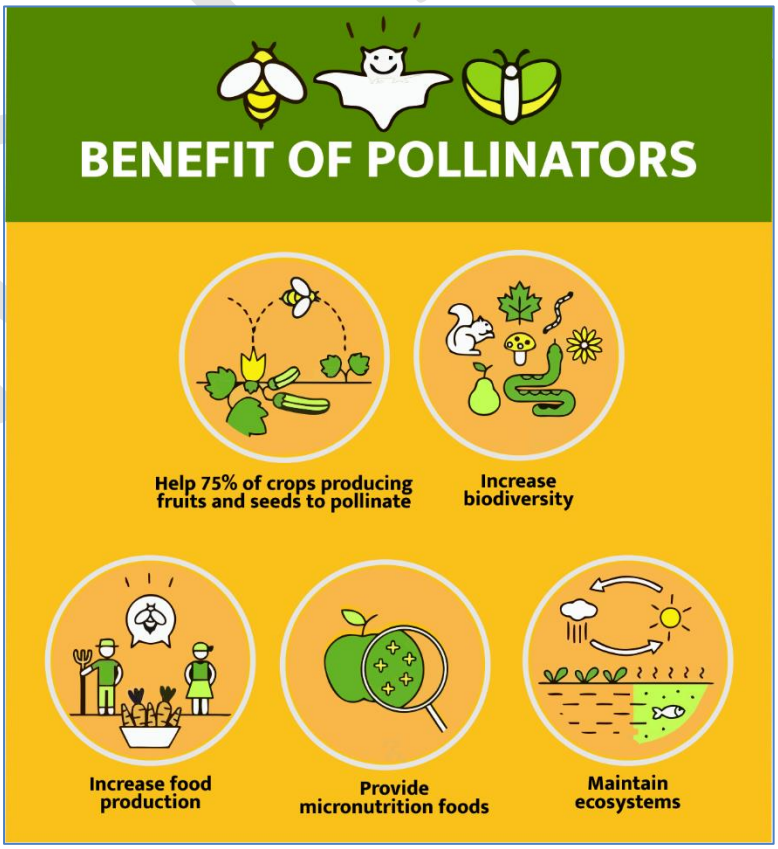
New Wetlands Added

Sultanpur National Park, Gurugram (Haryana)	Bhindawas Wildlife Sanctuary, Jhajjar (Haryana)
• Discovered by **British Ornithologist Peter Michel Jackson.** • Supports more than **220 species of resident, winter migratory and local migratory waterbirds.** • Threatened species including **critically endangered sociable lapwing**, and **endangered Egyptian Vulture** etc.	• Man-made freshwater wetland established in 2009. • Threatened species include **endangered Egyptian** Human **Vulture, Steppe Eagle, and Black-bellied Tern.** • Over 250 bird species use sanctuary throughout year as resting and roosting site.
Thol Lake Wildlife Sanctuary, Ahmedabad (Gujarat)	**Wadhwana Wetland, Vadodara (Gujarat)**
• It is an **old irrigation reservoir built under the Maharaja of Baroda (Gaekwads) in 1912.** • It lies on the Central Asian Flyway. • Threatened waterbird species include **critically endangered White-rumped Vulture** and Sociable Lapwing and **vulnerable Sarus Crane, Lesser White-fronted Goose.**	• **Wadhwana is a century old tank, constructed by erstwhile King Gaikwad in 1909-10.** ○ This tank has a catchment area of 860 sqkm , deriving its water from Orsang river. • It lies on the Central Asian Flyway. • It hosts some threatened or near-threatened species such as the **endangered Pallas's fish-Eagle,** the vulnerable Common Pochard, and **near-threatened Dalmatian Pelican, Grey-headed Fish-eagle** etc.

4.6.3. POLLINATORS

Why in news?

First-ever global level study was conducted to index causes and effects of decline in ecosystem services provided by pollinator species.



Key Findings

- Top three global causes of pollinator loss are **habitat destruction, land management — primarily grazing, fertilisers and crop monoculture of farming — and widespread pesticide use.**
- **Biggest risk to humans is crop pollination deficit** – fall in quality and quantity of food and biofuel crops.
  - Study points out that **China and India being heavily reliant on fruit and vegetable crops that need pollinators, now require people to pollinate some fruits/vegetables by hand.**
- **About pollinators**
  - A pollinator **helps carry pollen from the male part of the flower (stamen) to the female part** of the same or another flower (stigma).
    - ✓ Movement of pollen **must occur for plant to become fertilized** and produce fruits, seeds, and young plants.
  - **Some plants are self-pollinating,** while others are **fertilized by pollen carried by wind, water or pollinators.**
  - Pollinators include **insects and animals** - such as bees, wasps, moths, butterflies, birds, flies and small mammals, including bats.

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4.6.4. PROTECTED AREAS IN NEWS

Sitanadi Udanti Tiger Reserve (TR), Chhattisgarh	• In a first, the Chhattisgarh government has **recognised** the **Community Forest Resource (CFR) rights in an urban area** and in the core area of a tiger reserve. ○ The **Forest Rights Act, 2006**, provides for individual as well as community forest rights. • There **are 4 TRs in Chhattisgarh including** Sitanadi Udanti TR: Achanakmar Tiger Reserve, Guru Ghasi Das National Park and Indravati Tiger Reserve.

Changthang and Pangolakha Wildlife Sanctuary	• The **National Board of Wildlife (chair-PM, under Wildlife Protection Act 1972)** has cleared construction of roads near the Line of Actual Control.
	  ○ These roads are in **Ladakh's Changthang Wildlife Sanctuary** adjoining the border.
	  ○ It encompasses two of the world-famous **high altitude water lakes, Tsomoriri and Pangong Tso.**
	• Panel also cleared the construction of a border outpost at East Sikkim, to allow logistics support near the **Pangolakha Sanctuary**.
	  ○ The Pangolakha Range, extending below the Chola Range, **separates Sikkim from Bhutan.**
	  ○ The Sanctuary has typical **alpine-temperate-subtropical vegetation** with high altitude lakes around **JelepLa.**

Thane Creek, Maharashtra	• Maharashtra government has **proposed biodiversity rich Thane Creek**, including the protected area of Thane Creek Flamingo Sanctuary and surrounding eco-sensitive zone (ESZ) **to be included in the Ramsar Site.** ○ Presently, Maharashtra has two Ramsar sites: **Nandur Madhmeshwar** in Nashik and **Lonar crater in Buldhana district**.
Ramgarh Vishdhari Sanctuary, Rajasthan	• Ministry of environment, forest and climate change approved the conversion of Ramgarh Vishdhari Sanctuary **in Rajasthan's Bundi district into fourth tiger reserve in the state.** • Ramgarh Vishdhari Wildlife Sanctuary **acts like a buffer for Ranthambore National Park.** • **Flora & Fauna**: Indian Wolf, Leopard, Striped Hyena, Sloth Bear, Golden Jackal, Chinkara, Nilgai & Fox. • It **will link Ranthambore Tiger Reserve i**n the Northeast **and Mukundra Hills Tiger Reserve** on the southern side. ○ Sariska Tiger Reserve is the third **tiger reserve in the state.**

4.6.5. CONSERVATION MEASURES

National Dolphin Research Centre (NDRC)	• **India's and Asia's first National Dolphin Research Centre (NDRC)** is coming up in the premises of Patna University, Bihar.
	• The centre is being set up on banks of Ganges, as per recommendation of a steering committee constituted for implementation of **Project Dolphin**.
	• As per the committee, **Bihar has a natural advantage** as it accounted for **50% of the world's river dolphin population**.
	• **About Project Dolphin**
	  ○ Announced in 2020 has been envisaged along lines of 'Project Tiger' to enhance dolphin population.
	  ○ It will be **implemented by Ministry of Environment, Forest and Climate Change.**
	  ○ It involves conservation of dolphins and aquatic habitat through **use of modern technology** especially in **anti-poaching activities**.
	  ○ It will **engage fishermen and other river/ ocean dependent population** and will strive for **improving the livelihood of the local communities.**

India's 14 Tiger Reserves Set Global Standard in Tiger Conservation	• On the occasion of **Global Tiger Day, 2021, Ministry of Environment, Forest & Climate Change (MoEFCC)** announced **Conservation Assured Tiger Standards (CATS) accreditation** for 14 out of **India's 51 tiger reserves.**
	• The 14 reserves are
	  ○ **Manas, Kaziranga, and Orang** (Assam);
	  ○ **Sundarbans** (West Bengal);
	  ○ **Valmiki** (Bihar);
	  ○ **Dudhwa** (Uttar Pradesh);
	  ○ **Panna, Kanha, Satpuda and Pench** (Madhya Pradesh);
	  ○ **Anamalai and Mudumalai** (Tamil Nadu);

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	○ **Parambikulam** (Kerala) and ○ **Bandipur** (Karnataka).
Gudalur's Gene Pool Garden, Tamil Nadu	• **Gudalur's Gene Pool Garden (Tamil Nadu)** is an example of **participatory forest management (PFM).** ○ It was established in 1989 under **Hill Area Development Programme** in the Gudalur forest division, Nilgiris district of Tamil Nadu. ○ PFM works on 'co-management' and a 'give and take' relationship between village communities and the Forest Department. • It was created with **following objectives-** ○ **In situ conservation** of available endemic plant species. ○ **Ex situ conservation** of rare, endangered and threatened plant species.
First Joint exercise for the All India elephant and tiger population estimation	• On occasion of World Elephant Day, Minister for Environment, Forest and Climate Change **has announced joint exercise for the All India elephant and tiger population estimation in 2022.** • **Current Population Estimation Techniques** ○ **For tigers: MSTrIPES (Monitoring System for Tigers: Intensive Protection and Ecological Status)** that uses GPS, remote sensing, GPRS technologies for tiger estimation. ○ **Elephant:** Largely based on States directly counting the number of elephants. ○ **Other techniques- Camera sightings and trappings, counting footmarks, etc.**
National Gene Bank at NBPGR	• The Agriculture Minister inaugurated the refurbished **National Gene Bank** at **National Bureau of Plant Genetic Resources (NBPGR)**, Pusa. • NBPGR is the nodal institute at national level for acquisition & management of **indigenous & exotic plant genetic resources** for food and agriculture in India. • Established in 1996, the refurbished National Gene Bank is the 2nd largest Gene Bank of the world with capacity to preserve 1 million germplasm with facilities of- **Seed Genebank**, **In-vitro Genebank** and **Cryo Genebank**

4.7. SUSTAINABLE DEVELOPMENT

4.7.1. ENVIRONMENT, SOCIAL AND GOVERNANCE (ESG)

Why in news?

IndiGo became the first Indian carrier to publish an ESG report to showcase **its efforts in sustainable aviation.**

About ESG

- ESG reporting, also known as **sustainability reporting**, refers to the disclosure of data of an organisation on a set of **environmental, social and corporate governance** considerations which **create value** for the company or **impact its ability** to execute future strategy.
  - It is part of **non-financial reporting** aiming for benefits such as:
    - ✓ **Business Resilience** due to enhanced ability to withstand economic transition.
    - ✓ **Increased Access to Capital** by attracting growing sustainability funds.
      - > Within India, 6 out of present 8 **ESG themed mutual funds** were launched in 2020 only.
    - ✓ **Complying** with regulatory needs of other nations to **compete globally.** E.g. all companies with more than 500 employees in the EU need ESG disclosure.
- **Status of ESG in India**
  - Under **Business Responsibility and Sustainability Reporting** (BRSR) by listed entities, SEBI has notified inclusion of **ESG** reporting.
  - The BRSR shall be applicable to the **top 1000 listed entities** (by market capitalization). Reporting of BRSR shall be **voluntary for FY 2021-22** and **mandatory from FY 2022-23.**

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4.7.2. OTHER IMPORTANT NEWS

Earth Overshoot Day	• Earth Overshoot Day marks the date when **humanity's demand** for **ecological resources** and **services** in a **given year** exceeds what **Earth can regenerate in that year**.
	  ○ It is hosted and calculated by **Global Footprint Network** since **1970**.
	  ○ **29th July** was the Earth overshoot day for 2021.
	• **Last year the Earth Overshoot day was on 22nd August**, which was an exception to the advancing trend of overshoot till 2019 (29th July). This year the pre-2020 trend has returned due to
	  ○ **Increased deforestation** of Amazon's rainforests.
	  ○ **Increase in CO_2 emissions** by energy sector.

Battery energy storage system (BESS)	• Tata Power Solar Systems will build 50 MWp solar PV plant with 50MWh **battery energy storage system (BESS) project at Phyang village in Leh, Ladakh.**
	  ○ This will be India's **first co-located large-scale battery energy storage system solution.**
	• BESS are devices that **enable energy from renewables, like solar and wind, to be stored and then released when customers need power most.**
	  ○ **Lithium-ion batteries,** which are used in mobile phones and **electric cars**, are currently the **dominant storage technology** for large scale plants to help electricity grids ensure a reliable supply of renewable energy.
	  ○ **Key grid energy storage technologies** - Batteries, pumped hydroelectric storage, compressed air energy storage, Thermal storage, hydrogen, flywheels.

Green Deposits	• Recently, HDFC bank introduced **Green Deposits** for its retail customers • Green Deposits are the **term deposits** which are used to **invest** in **environmentally beneficial projects** and initiatives, **promoting** the transition to a **low-carbon, climate resilient** and **sustainable economy** ○ This includes **Renewable Energy, energy efficiency, sustainable water management, clean transportation, green buildings** etc. • It helps banks in **Net Zero Strategy** while providing funds to organisations in rebuilding or transition of business towards sustainability; helping to meet the Environmental, social, and governance (**ESG**) **objectives.**
Largest Floating Solar PV Project in India	• The **National Thermal Power Corporation** (NTPC) has **commissioned the largest floating solar photovoltaic** (PV) **project of 25MW** on the reservoir of its **Simhadri thermal station in Visakhapatnam** (Andhra Pradesh). ○ This project has the potential to generate electricity for around 7,000 households from more than 1 lakh solar PV modules. • This is also the **first solar project to be set up under the Flexibilisation Scheme**, notified by the Government of India (2018) which **allows power generation companies to meet their supply obligations via renewable power instead of only thermal power.**

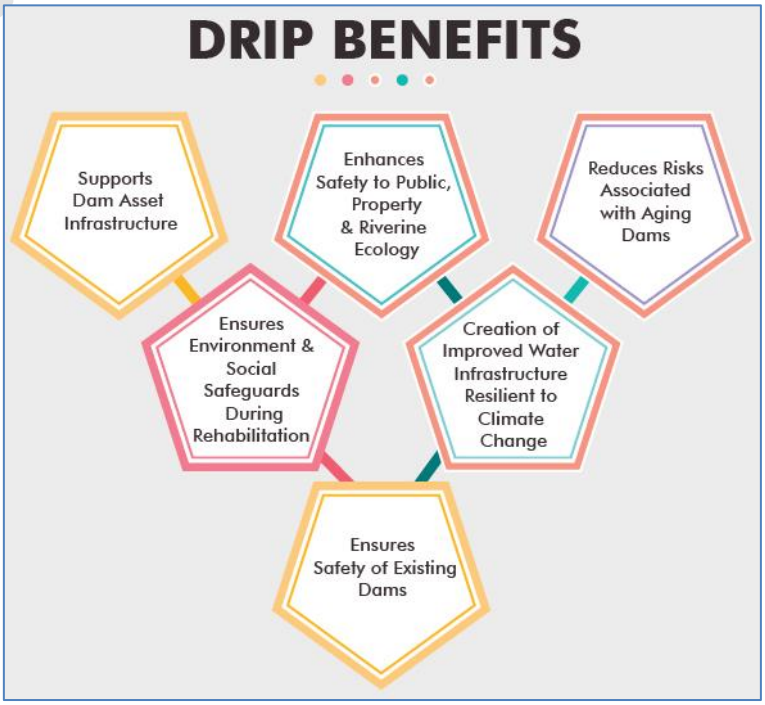
4.8. DAM SAFETY

Why in news?

Recently, **India and World Bank signed a $250 million project** for **Dam Rehabilitation and Improvement Project (DRIP Phase II)** to make existing dams safe and resilient.

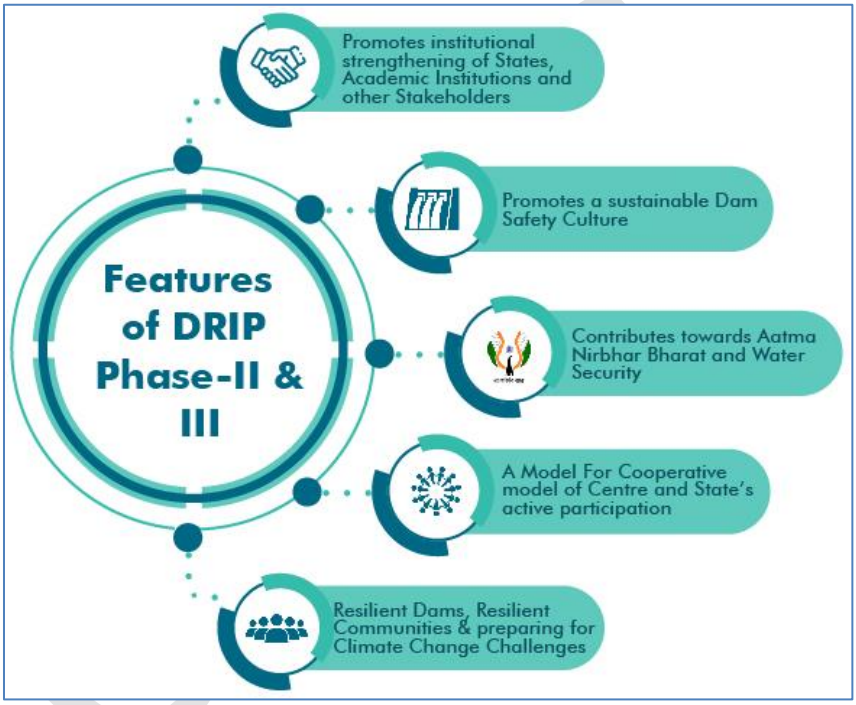
About Dam Rehabilitation and Improvement Project (DRIP)

- It is a **State Sector scheme** with a central component, **initiated in 2012** by Government of India with financial assistance from the World Bank to **bridge the funding gap** and **provide urgent finance to States for repair** and maintenance of dams.



- 80% of the total project is provided by the World Bank as loan/credit and remaining 20% is borne by the States/ Central Government.

- **DRIP Phase-I:**
  - It has comprehensively addressed hydrological, structural, and operational safety of **223 dams located in seven States** (Jharkhand, Karnataka, Kerala, Madhya Pradesh, Odisha, Tamil Nadu, and Uttarakhand) with 10 Implementing Agencies on board. Out of 223, major rehabilitation **works have been completed at 221 dams.**
  - The **Central Water Commission (CWC)** had been entrusted with **overall coordination and supervision.**
  - It was successfully **closed in March 2021.**
- **DRIP Phase II and Phase III:**
  - Based on the success of DRIP Phase-I, **Ministry of Jal Shakti initiated** another **externally funded Scheme DRIP Phase II and Phase III.** This new Scheme has **19 States,** and **three Central Agencies** on board. It was approved in 2020 for rehabilitation provision of **736 dams.**
  - The Scheme is **10 years duration,** proposed to be implemented in **two Phases,** each of six-year duration with two years overlapping.
  - DRIP Phase-II is being co-financed by two multi-lateral funding Agencies - **World Bank** and **Asian Infrastructure Investment Bank (AIIB),** with **funding of US$ 250 million each.**
  - The funding pattern of Scheme is-
    - ✓ **80:20** (Special Category States),
    - ✓ **70:30** (General Category States) and
    - ✓ **50:50**(Central Agencies).
  - The Scheme also has provision of **Central Grant of 90% of loan amount for special category States** (Manipur, Meghalaya and Uttarakhand).



Other Government initiatives for Dam Safety

- **DHARMA (Dam Health and Rehabilitation Monitoring):** It is a **web tool to digitize all dam related data** effectively that will help to document authentic asset and health information pertaining to the large dams in the country, enabling appropriate actions to **ensure need-based rehabilitation.** It is a new stride in asset management aspect by India.
- **Seismic Hazard Assessment Information System (SHAISYS):** It is a **web based interactive application tool,** being developed in CWC (Central Water Commission) under Dam Safety Organisation (DSO) to estimate Seismic Hazard at a point in South Indian region.
- **Dam safety Act, 2019**: It provides for the **surveillance, inspection, operation, and maintenance** of all specified dams across the country.
  - It constitutes **National Committee on Dam Safety** to **formulate policies and regulations** regarding dam safety standards and to analyse causes of major dam failures to suggest changes in safety practices.
  - **National Dam Safety Authority** to **implements policies of the National Committee,** and resolves matters between State Dam Safety Organisations (SDSOs), or between a SDSO and any dam owner in that state.

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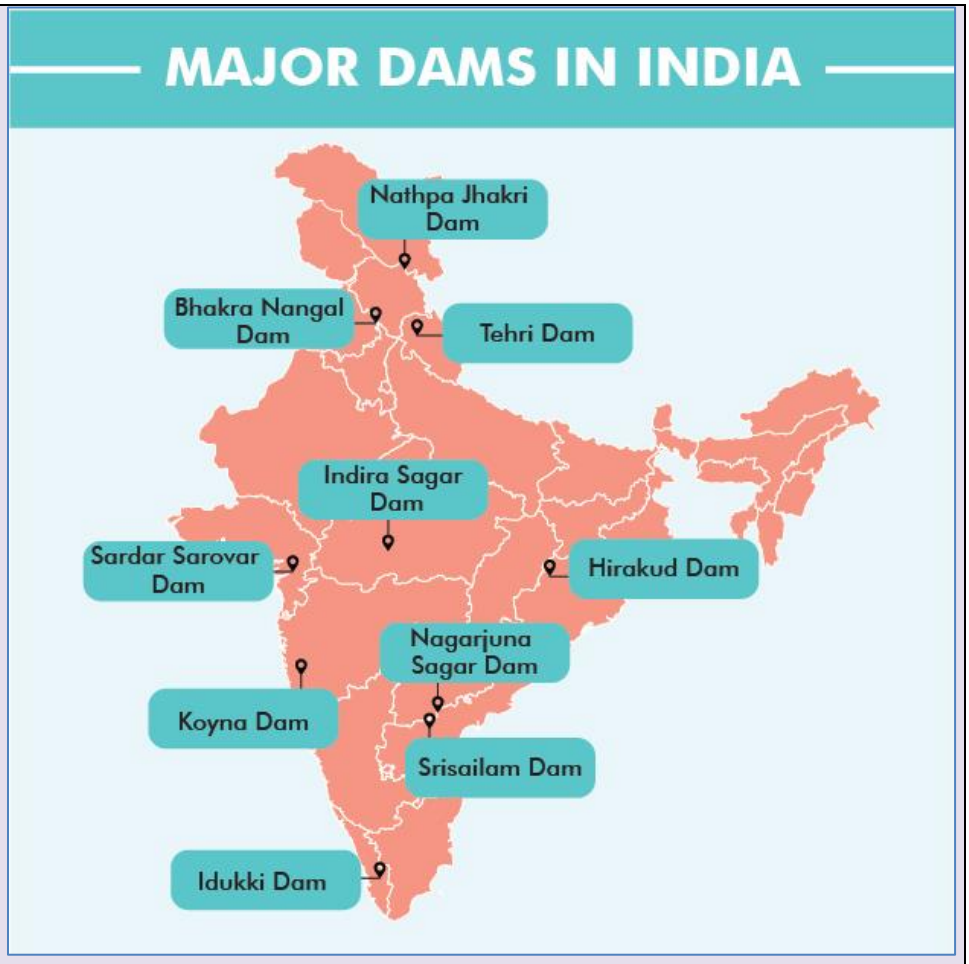
Dams in India

- **India ranks third globally** after China and U.S. They are vital for **ensuring the water security of the country** and constitute a major responsibility in terms of asset management and safety.
  - As per the data of the National Register of Large Dam (NRLD) of 2018, **Maharashtra has maximum number of Dams** followed by Madhya Pradesh and Gujarat.
- **Major dams in India (refer map):**
  - **Highest Dam: Tehri Dam** in Uttarakhand is built on **Bhagirathi River.**
  - **Longest Dam: Hirakud Dam** in Odisha is built on **Mahanadi River.**
  - **Oldest Dam: Kallanai Dam** in Tamil Nadu is built on the **Cauvery River** is about **2000 years old.**



4.9. REPORTS AND INDICES

Report/Indices	Key findings and other details
Renewables Integration in India 2021 Report	Published by: **NITI Aayog and International Energy Agency (IEA)** • **Key findings** o India is the **third largest energy-consuming country in the world.** o **Per-capita electricity consumption is still around a third of the world average** and is expected to continue increasing. o Majority of **India's renewable capacity additions take the form of solar and wind.** o **Renewable energy penetration is highly variable** by state in India. o India's power system **can efficiently integrate renewables** (175 GW by 2022 and 450 GW by 2030), but it would require **identification of resources and proper planning, regulatory, policy and institutional support, energy storage and advance technology initiatives.**
Children's Climate Risk Index (CCRI)	Released by: **UNICEF** • CCRI **ranks countries based on how vulnerable children are to environmental stresses and extreme weather events.** • CCRI is structured according to **two central pillars** (Refer infographic). • **Central African Republic tops the index** of 163 countries. • Pakistan(14^{th}), Bangladesh (15^{th}), Afghanistan(25^{th}) and India(26^{th}) are among **four South Asian countries where children are at extremely high risk of the impacts of the climate crisis.**

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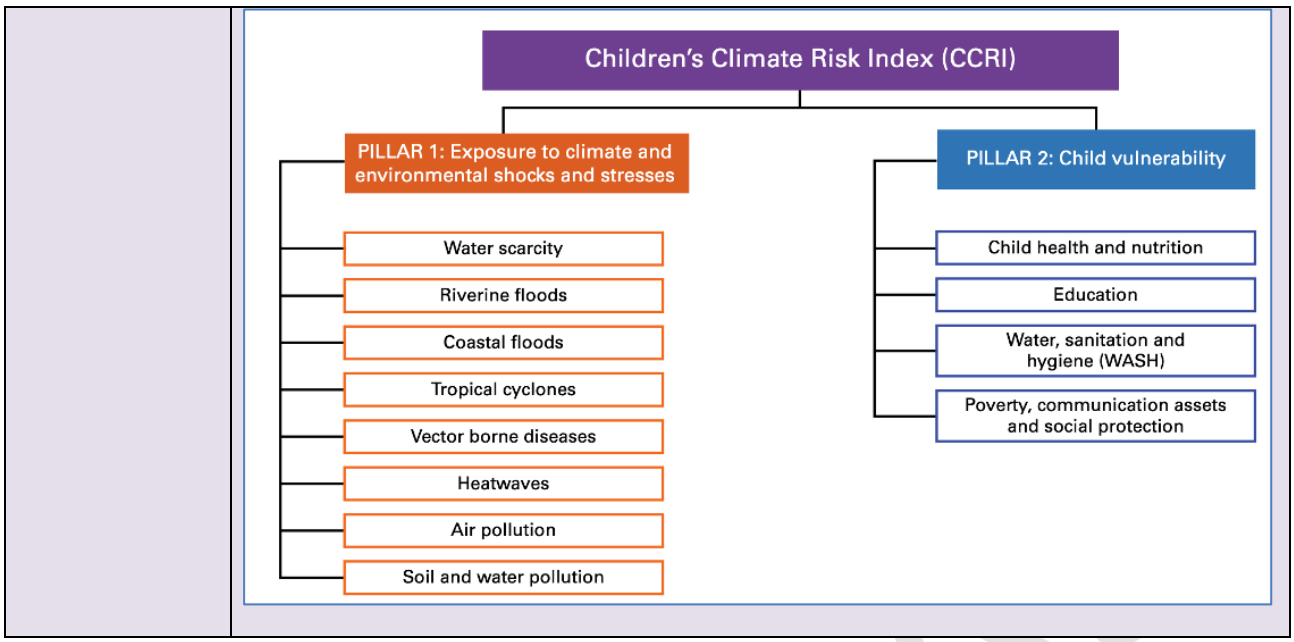
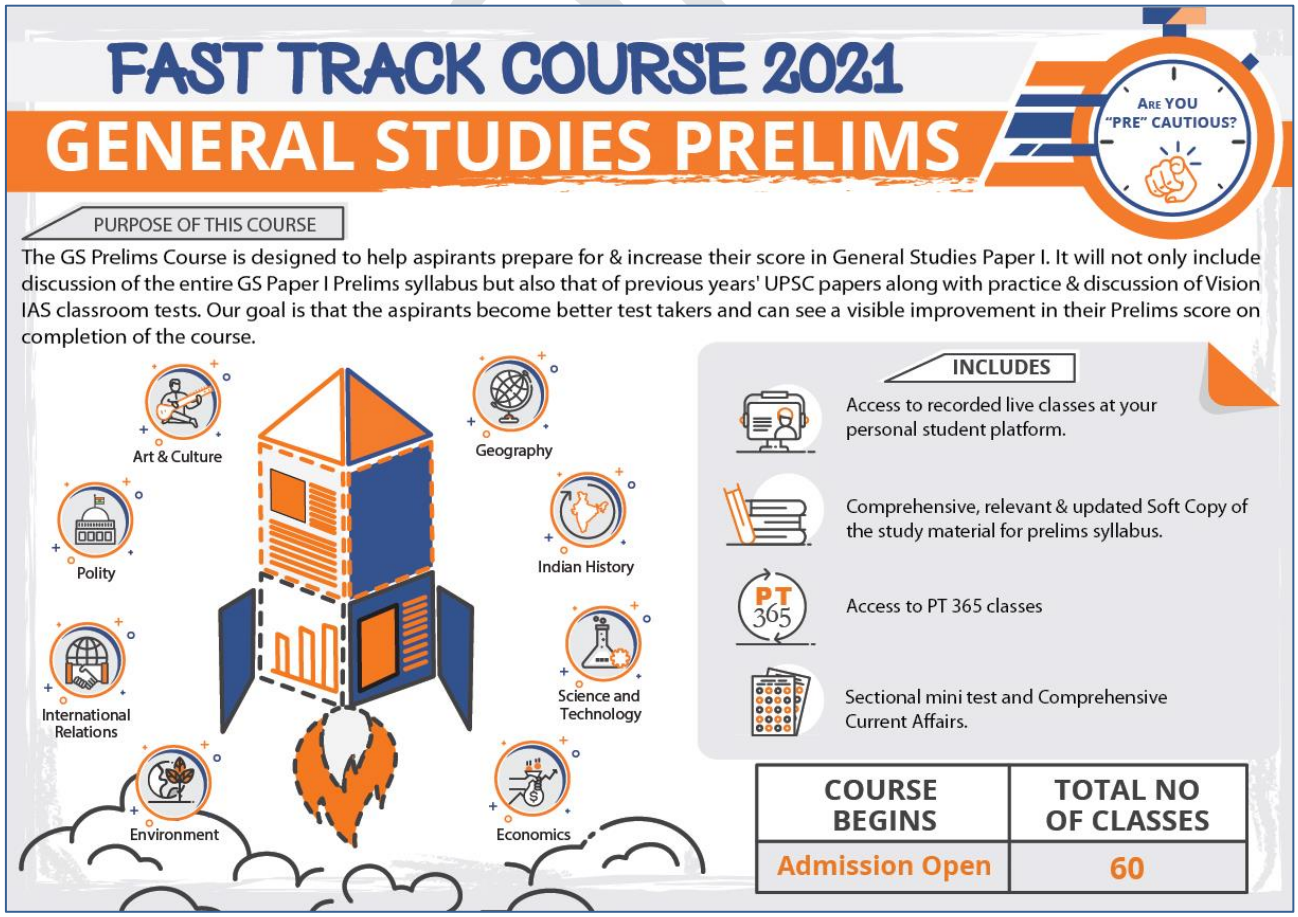


4.10. ERRATA

- On page number 3 in the PT- 365 Environment, under Section 1.1.1. titled 'EMISSIONS GAP REPORT 2020', it has been mentioned that GHG emissions continued to increase '4%' per year since 2010 on average.
- Correct information- GHG emissions continued to increase **'1.4%'** per year since 2010 on average.



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5. SOCIAL ISSUES

5.1. THE TRAFFICKING IN PERSONS (PREVENTION, CARE AND REHABILITATION) BILL, 2021

Why in news?

Ministry of Women and Child Development has invited comments/suggestions from all the stakeholders on the draft **'Trafficking in Persons (Prevention, Care and Rehabilitation) Bill, 2021' (TIP Bill).**

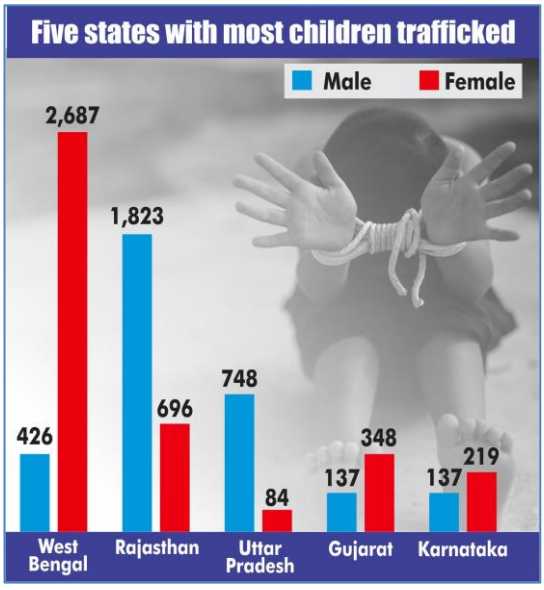
About human trafficking

- Currently, the crime of trafficking is covered under **Criminal Law Amendment Act, 2013**. Trafficking for the purpose of commercial sexual exploitation is covered under the **Immoral Trafficking (Prevention Act of 1956.**
- Despite these provisions, the NCRB data shows an **increasing trend of cases of trafficking** by 14.3% in 2019 as compared to the previous year.

Key highlights of the Bill

- **Aim:** The legislation is aimed at **preventing and countering trafficking in persons,** especially women and children, to provide for care, protection, and rehabilitation to the victims, while respecting their rights, and creating a supportive legal, economic and social environment for them, and also to ensure prosecution of offenders.'
- **National Investigating and Coordinating Agency:** The National Investigation Agency (NIA) shall act as the national investigating and coordinating agency. The NIA shall be responsible for prevention and combating of trafficking in persons, investigation, prosecution and coordination in cases of trafficking in persons and other offences under this Act.
- **National Anti-Human Trafficking Committee:** This body shall be constituted by the Central Government for ensuring overall effective implementation of the provisions of this Act. Secretary, Ministry of Home Affairs, Government of India would be the Chairperson of this committee. Similar committees are to be created at the State and District Levels.
- **State Anti-Human Trafficking Nodal Officers:** It shall be appointed by the State Government. It shall be responsible for follow up action under this Act, as per the direction of the State Anti-Human Trafficking Committee and co-ordinate with other government agencies and civil society organizations.
- **Consent of the victim:** It could be irrelevant and immaterial in determination of the offence of trafficking in persons if the consent has been achieved through force, coercion etc.
- The Bill also defines human trafficking **as an organised crime with international implications**.
- The draft bill has proposed **severe punishment for offences classified as aggravated forms of trafficking.**

Steps taken



- **Ujjawala Schemes:** It is a comprehensive scheme that was launched in 2007 to combat trafficking and it provides for **Prevention, Rescue, Rehabilitation, Re-Integration and Re-Patriation** of victims trafficked for commercial sexual exploitation. It is mainly being implemented through non-governmental organizations (NGOs).
- **Anti-Human Trafficking Units:** Ministry of Home Affairs (MHA) under a Comprehensive Scheme of Strengthening law enforcement response in India against Trafficking in Persons through Training and Capacity Building, has released fund for establishment of Anti Human Trafficking Units for 270 districts of the country.
    - **Anti-Trafficking Cell (ATC):** Anti-Trafficking Nodal Cell was set up in the MHA in 2006 to act as a focal point for communicating various decisions and follow up on action taken by the State Governments to combat the crime of Human Trafficking. MHA conducts coordination meetings with the Nodal Officers of Anti Human Trafficking Units nominated in all States/UTs periodically.
- **Legislative measures:**
    - **The POCSO** (Protection of Children from Sexual Offences) **Act 2012** prohibits a range of sexual offences against children under the age of 18.

- **Criminal Law (amendment) Act 2013**, under Section 370 and 370A of the, provide for comprehensive measures to counter the menace of human trafficking.
- **Other specific legislations** enacted relating to trafficking in women and children Prohibition of Child Marriage Act, 2006, Bonded Labour System (Abolition) Act, 1976, Child Labour (Prohibition and Regulation) Act, 1986, Transplantation of Human Organs Act, 1994, apart from specific Sections in the IPC, e.g. Sections 372 and 373 dealing with selling and buying of girls for the purpose of prostitution.

- **Judicial Colloquium:** In order to train and sensitize the trial court judicial officers, Judicial Colloquium on human trafficking is being held at the High court level.
- **Efforts by State Government:** State Governments have also enacted specific legislations to deal with the issue. (e.g. The Punjab Prevention of Human Smuggling Act, 2012).
- **Cooperation at International level:** India is a signatory of the Protocol to Prevent, Suppress and Punish Trafficking in Persons of the UN Convention against Transnational Organised Crime (UNTOC).
- **Civil Societies:** Various NGOs like the Rescue Foundation, Bachpan Bachao Andolan have been successful in rescuing, rehabilitating, and repatriating victims of trafficking back to their families.

5.2. NATIONAL EDUCATION POLICY

Why in news?

India completed one year of the **National Education Policy** (NEP) 2020.

More on news

Prime Minister launched multiple key initiatives in the education sector to mark first year anniversary of the National Education Policy 2020. These are as given under:

Initiative	Details
Academic Bank of Credit	• It is **envisaged as a digital bank** that shall deposit Credits awarded by Registered Higher Education Institutions, for Courses pursued therein, in the Academic Bank Account of the student. • It is **a major instrument for facilitating multidisciplinary and holistic education** and will allow **multiple entry and exit options** for students of undergraduate and postgraduate degree courses.
Vidya Pravesh	• It is a **preschool preparation programme** for Class 1st students. • The program will consist of a **three-month play module** for these children to prepare them for school.
SAFAL (Structured Assessment For Analyzing Learning Levels)	• An **assessment programme for CBSE students** to assess the progress of foundational skills and basic learning outcomes and competencies among students in classes 3, 5 and 8.
National Digital Education Architecture (NDEAR)	• It will provide **diverse education eco-system architecture** for development of digital infrastructure, a federated but interoperable system that will ensure autonomy of all stakeholders, especially States and UTs. • It will be beneficial for both Centre and States in planning, administering and governing school education as well as to teachers, students and schools for having a seamless digital learning experience.
National Education Technology Forum (NETF):	• To provide a **platform for the free exchange of ideas on the use of technology** like artificial intelligence, blockchain, machine learning, smart boards, computing devices to enhance learning, assessment, planning, administration. • It will provide independent **evidence-based advice to central and state government agencies** on technology-based interventions.
NISHTHA 2.0:	• It will provide **training to teachers** as per their needs and they will be able to give their suggestions to the department. It will have 68 modules including 12 generic and 56 subject-specific modules and will cover around 10 lakh teachers. ○ **NISHTHA is the largest teachers' training programme**, first of its kind in the world to motivate and equip teachers to encourage and foster critical thinking in students.
Other initiatives related to language	• **Mother tongue as medium of instruction in colleges:** 14 engineering colleges in **eight States** are going to start engineering studies in five Indian languages: **Hindi, Tamil, Telugu, Marathi and Bangla.** • **Sign Language as a Subject in Secondary Level**: Indian sign language, for the first time, has been accorded the status of language subject. This will give a boost to Indian sign language and will help the divyang people.

Classroom Study Material Extended

5.3. NATIONAL INITIATIVE FOR PROFICIENCY IN READING WITH UNDERSTANDING AND NUMERACY (NIPUN BHARAT)

Why in News?

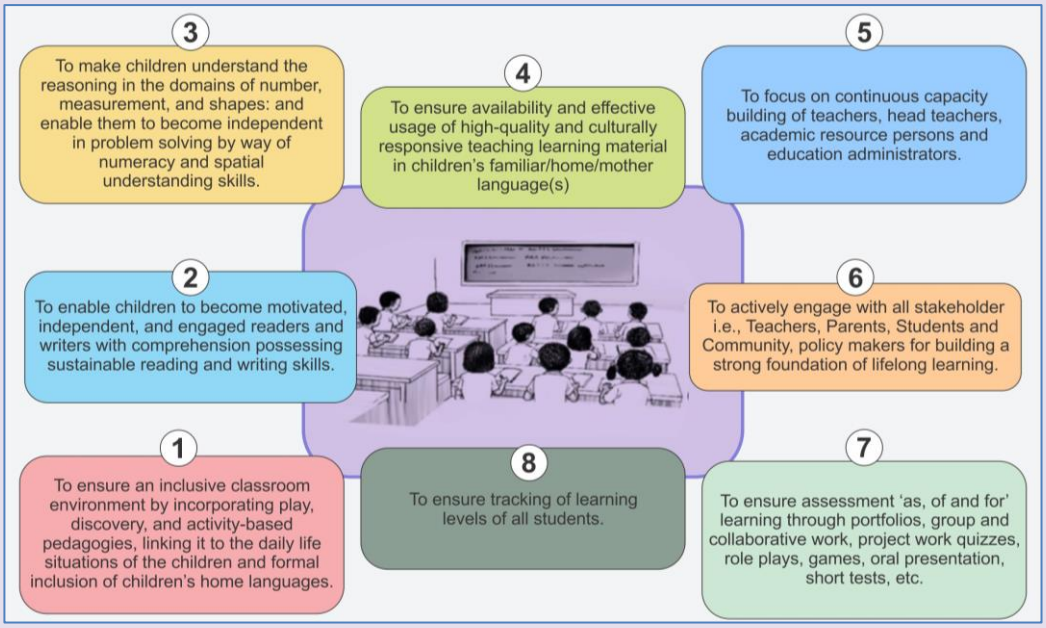
Recently, Ministry of Education (MoE) launched NIPUN Bharat programme, a National Mission on Foundational Literacy and Numeracy (FLN).

More on News

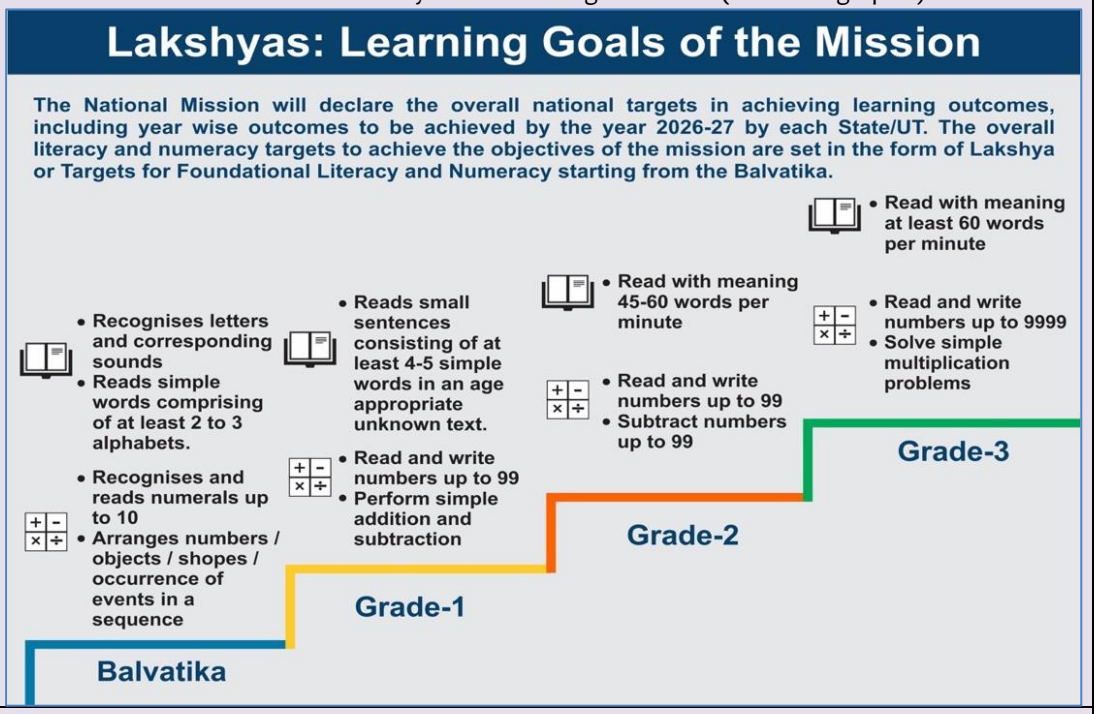
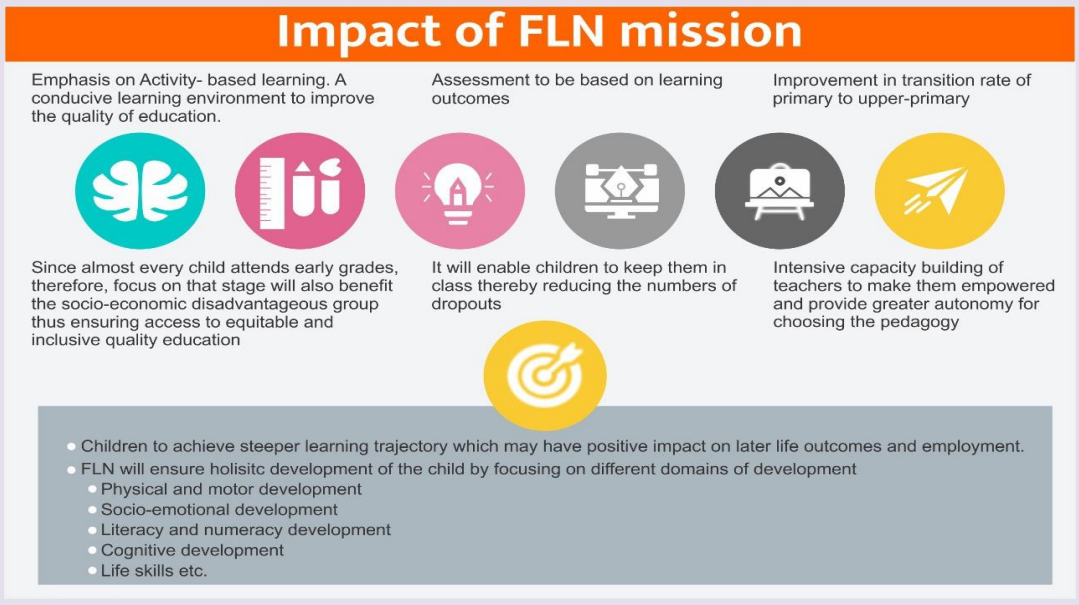
- Attaining FLN for all children has been **focused on National Education Policy 2020.** It accords highest priority to achieve **universal FLN in primary school and beyond by 2026-27.**
- The Mission will be **set up under the aegis of the centrally sponsored scheme of Samagra Shiksha** which is an integrated scheme of school education covering from Pre-School to Senior Secondary level.

About NIPUN

Aim	• Mission aims **to ensure universal acquisition of FLN,** so that by 2026-27 every child achieves the desired learning competencies in reading, writing and numeracy at the end of Grade III and not later than Grade V.
	  ○ It aims **to cover the learning needs of children in the age group of 3 to 9 years including pre-school to Grade 3.**
	  ○ The **children who are in Class 4 and 5 and have not attained the foundational skills will be provided individual teacher guidance and support,** peer support and age appropriate and supplementary graded learning materials to acquire the necessary competencies.

Objectives of the Mission	
Focus of the Mission	• Providing access and **retaining children in foundational years of schooling;** • Teacher **capacity building;** • Development of high **quality and diversified Student and Teacher Resources/Learning Materials;** and • **Tracking the progress of each child** in achieving learning outcomes.

Implementation	• A **five-tier Implementation mechanism** will be set up at **National-State-District-Block-School level.**
	• **Department of School Education and Literacy,** MoE will be the implementing agency **at the national level** and will be headed by a Mission Director.
	• **Role of States/UTs**
	  ○ Creating **multi-year Action plans** to achieve their respective FLN targets.
	  ○ Contextualise the National Mission by preparing **state specific Stage-wise Action Plan.**
	  ○ Ensure availability of **adequate number of Teachers in each school at each grade from pre-primary to grade 3** and extensive capacity building of teachers for implementing FLN in mission mode.
	  ○ Mapping of **database of each child enrolled** in foundational grades.
	  ○ Identify a **pool of mentors** to render academic support to teachers.

	○ **Ensuring delivery of textbooks and uniforms** to students before the start of academic session. ○ School/public **libraries will be made integral part** of teaching learning process.
Progress Tracking Mechanism	• Learning outcomes **have been divided into 3 three developmental goals:** Goal 1-HW (Health and Wellbeing), Goal 2-EC (Effective Communicators), Goal 3-IL (Involved Learners). • Goals are set in the form of Lakshya Soochi or Targets for FLN (Refer infographic). 
Outcomes envisaged	
Strategies outlined for success of the mission	• **Pedagogy for creating an inclusive classroom** ○ Contextualization of **materials keeping in view the linguistic and social diversity** of each State/UT. ○ **Emphasis on Child Centered Pedagogy,** Toy-based pedagogy, Play based, Art-integrated/sport-integrated, Story-telling-based, ICT-integrated learning etc. ○ **Emphasis on interactive classroom** including authentic, appropriate, and accessible toys and materials. • **Empowering Teachers** ○ **A special package for FLN under NISHTHA** (National Initiative for School Heads" and Teachers" Holistic Advancement) is being developed by NCERT and around 25 lakh teachers teaching at pre-primary to primary grade will be trained this year on FLN. • **Using DIKSHA** (offers teachers, students and parents engaging learning material relevant to the prescribed school curriculum) **to enable**

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	○ **Student Learning:** Ranging from explanation videos, interactive assessment items, worksheets, reading materials, etc. will be available ○ **Teacher Professional Development**

About Foundational Literacy and Numeracy (FLN)

- Foundational learning is the **basis of all future learning for a child. Not achieving basic foundational skills** of being able to read with comprehension, writing and doing basic mathematics operations, **leaves the child unprepared for the complexities of the curriculum beyond grade 3.**
- **Foundational Language and Literacy**
  - Pre-existing knowledge of language **helps in building literacy skills** in languages.
  - **Key components in Foundational Language and Literacy are:** Oral language development, deciphering written words, reading fluency, reading comprehension and writing.
- **Foundational Numeracy and Mathematics Skills**
  - It means the **ability to reason and to apply simple numerical concepts in daily life problem solving.**
  - The major aspects and **components of early mathematics are:** Pre-number concepts, Numbers and operations on numbers, Shapes and Spatial Understanding, Measurement and Data Handling.

Related News

School Innovation Ambassador Training Program (SIATP)

SIATP launched for schoolteachers is a **collaborative effort of the Ministry of Education's Innovation Cell, Ministry of Tribal Affairs, CBSE and AICTE.**

- The program **aims at training 50,000 School Teachers** on Innovation, Entrepreneurship, Intellectual Property Rights (IPR), Design Thinking, Product development, Idea generation, among others.
  - The training will be delivered in **online mode** only.
- The innovative and one-of-its-kind program is **designed** by the **Innovation Cell of the Ministry of Education** and **AICTE** based on its "Innovation Ambassador Training Program for Higher Educational Institution's faculty members".

Significance of SIATP:

- **It will strengthen the mentoring capacity of teachers** for nurturing and handholding ideas from students.
- **It will help in providing quality education to children,** especially in **tribal areas**. This will **help in fostering a culture of innovation in school education** across the country.
- **It is in line with the National Education Policy** (NEP) that encourages innovation and critical thinking at school level.

6. SCIENCE AND TECHNOLOGY

6.1. BIOTECHNOLOGY

6.1.1. BIOTECH-PRIDE GUIDELINES

Why in news?

"Biotech-PRIDE (**Promotion of Research and Innovation through Data Exchange**) Guidelines" developed by Department of Biotechnology (DBT), Ministry of Science and Technology were released recently.

About Guidelines

- Biotech-PRIDE guidelines have been formulated in conformity with the principles of **NDSAP (National Data Sharing and Accessibility Policy) 2012**, for enabling the **sharing, access and storage** of biological data.
  - In India at present biological data is deposited in International Repositories **and there are no guidelines for sharing it.**

Biological data
- It includes, inter alia, DNA sequence data, RNA sequence transcriptomic data, Genotype data, Epigenomic data and protein structure data.

Characteristics of Biological Data
- It is **highly complex** when compared with most other applications.
- The amount and **range of variability in data is high.**

- Under the guidelines, it is the **responsibility of the data-generator/producer/submitter to deposit data** in an appropriate database in the notified Data Repository.
- **Data withdrawal may be granted** if the individual or the organization, whose data have been placed on a publicly accessible database, make a justified request either directly or through the submitter, with valid claims to the data.
- These Guidelines **will be implemented through Indian Biological Data Centre (IBDC)** at Regional Center for Biotechnology supported by Department of Biotechnology. Other datasets/ data centres will be bridged to the IBDC which will be called Bio-Grid.
  - The Bio-Grid will be a **National Repository for all biological knowledge, information and data** generated through research within the country and will be responsible for:
    - ✓ **Enabling its exchange** to facilitate the Research and Innovation,
    - ✓ Developing measures for **safety, standards and quality for datasets** and
    - ✓ Establishing **detailed modalities** for accessing data.
- The modalities for data sharing shall be managed by IBDC under **three categories** as follows:
  - **Open access**: Open access data are those which are **intended to be shared openly** by the data provider. All data, under 'open access' category, generated from public-funded research will be available to everyone (larger scientific community and public) **under FAIR (findable, accessible, interoperable and reusable) principles.**
  - **Managed access**: Managed access data are those which are **shared with specific restrictions** imposed by the data producer/generator/submitter. In case of data generated using public funds, restrictions to access and use of such data are to be **established by the funding agency** before its deposition.
  - **No access:** Access to 'sensitive data' shall not be permitted, even if generated using public funds.

6.1.2. OTHER IMPORTANT NEWS

WHO issues new recommendations on human genome editing	• **WHO has released two reports**: Human genome Editing: A Framework for Governance and Human Genome Editing: Recommendations. ○ Reports provide the **first global recommendations** to help establish human genome editing as a tool for public health, with an emphasis on **safety, effectiveness and ethics**. • Human genome editing (also called gene editing) helps **to change an organism's DNA**, i.e. to add, remove or alter genetic material at a particular location.
National Gene Bank at NBPGR	• Refurbished **National Gene Bank** at **National Bureau of Plant Genetic Resources (NBPGR)**, Pusa was inaugurated recently. ○ Established in 1996, refurbished National Gene Bank is the **2nd largest Gene Bank of the world** with capacity to preserve 1 million germplasm with facilities of Seed Genebank, In-vitro Genebank and CryoGenebank. • NBPGR is the nodal institute at national level for **acquisition & management of indigenous & exotic plant genetic resources** for food and agriculture in India.

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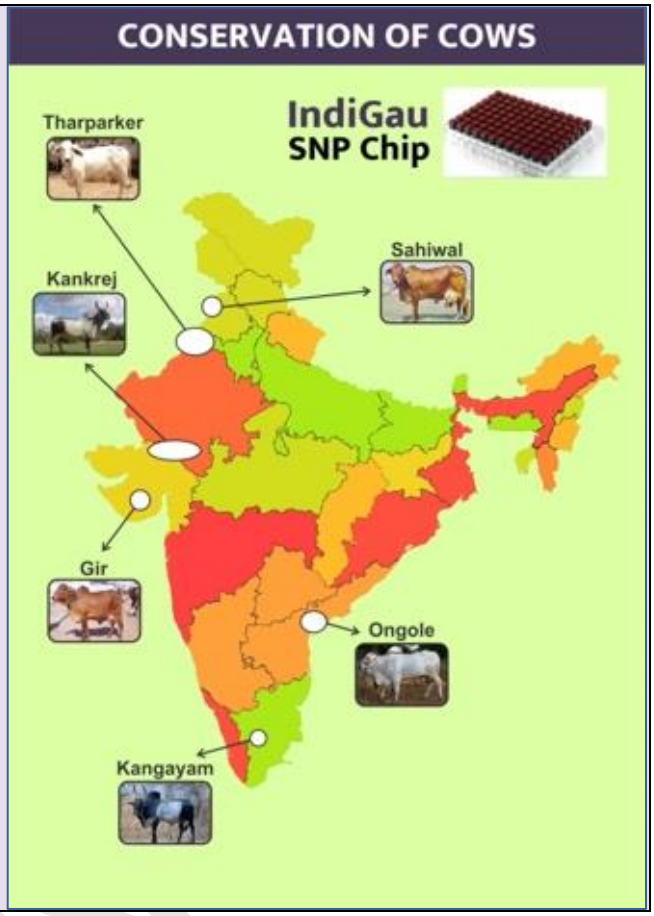
IndiGau	• It is **India's first Cattle Genomic Chip for the conservation of pure varieties of indigenous cattle breeds** and helps towards doubling farmers' income by 2022. ○ It is the **largest cattle chip in the world** with 11,496 markers. • Till now India's dairy development program **has been referring to chips which are developed for foreign western breeds of cattle.** • This indigenous chip was **developed by the National Institute of Animal Biotechnology** (Hyderabad), an autonomous institution under the aegis of the Department of Biotechnology.	

6.2. IT & COMPUTER

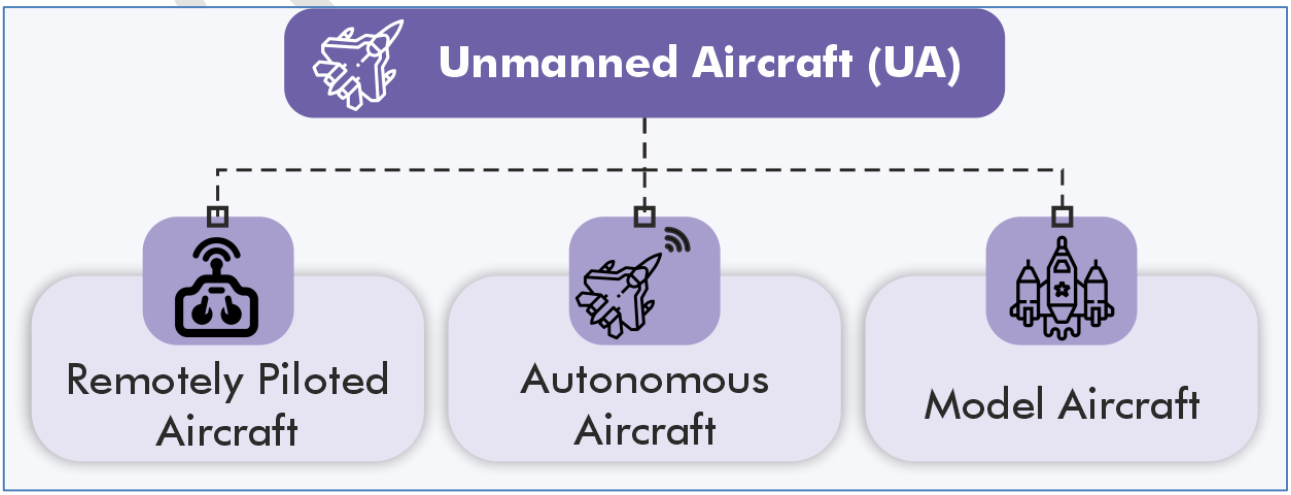
6.2.1. DRONE REGULATIONS IN INDIA

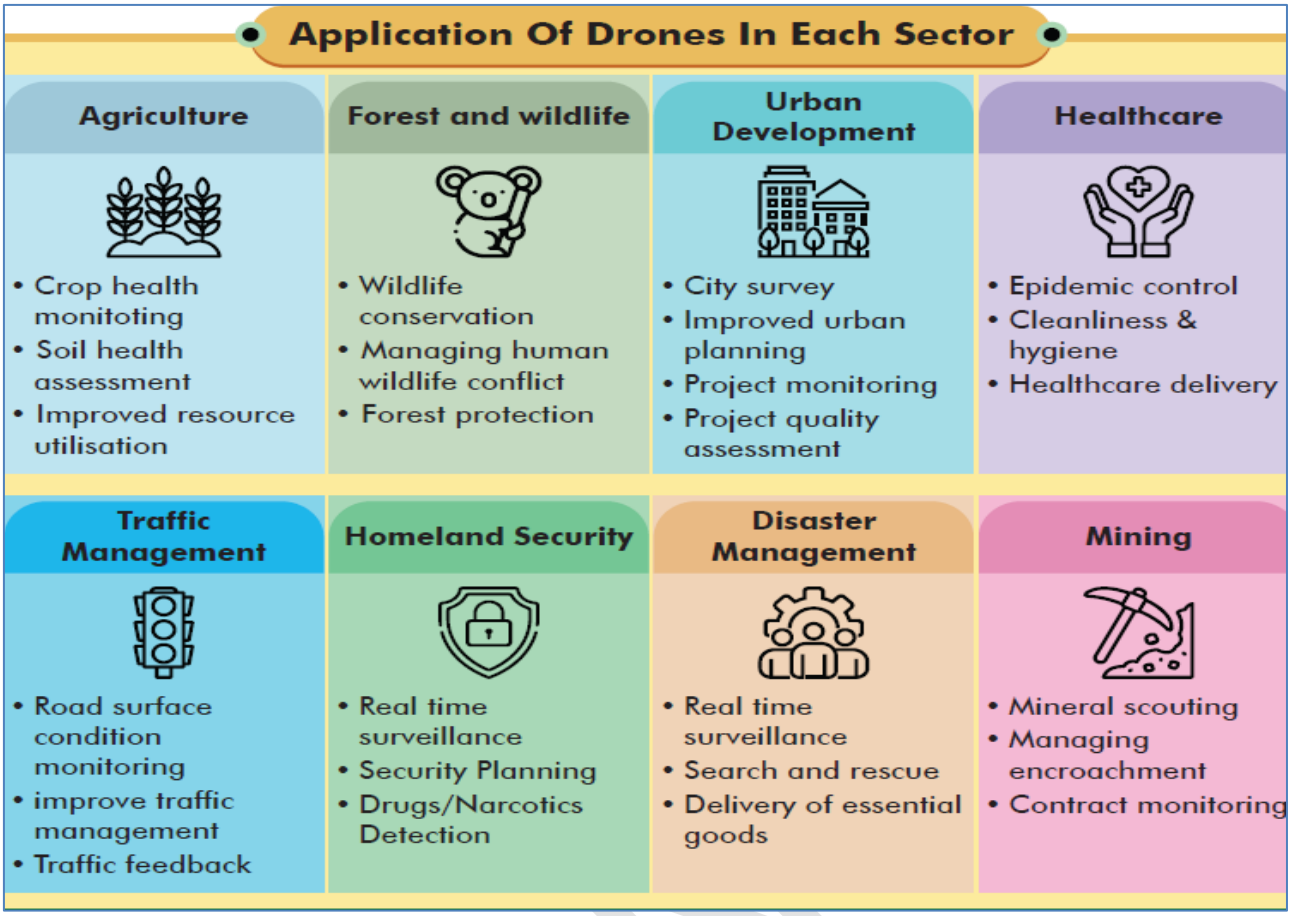
Why in News?

Ministry of Civil Aviation (MoCA) has released the updated – The Drone Rules, 2021 for public consultation.

About Drones

- Drone is a layman terminology for Unmanned Aircraft (UA), an aircraft, **which is intended to operate with no pilot on board.**
- An aircraft and its associated elements, which are operated with no pilot on board is called as Unmanned Aircraft System (UAS).





Draft Drone Rules, 2021

- Drone Rules, 2021 will replace the **Unmanned Aircraft Systems (UAS) Rules 2021** (released on 12 March 2021).
- Objective is to **enable more types of unmanned aircraft operational scenarios, increase the ease of compliance for the unmanned aviation industry, and ensure safety and security.**

Drones and Security Concern

- Security agencies in India have for some time been **anticipating the possible use of drones to target sensitive locations.**
  - A couple of years ago drones were used to drop weapons and drugs along the Punjab border.
- **Drones are becoming security threats as**
  - **Conventional radar systems are not meant for detecting low flying objects.** Besides the low altitude, what also makes it difficult to trace and intercept drones is their slow speed.
  - **Technology is easily accessible to terrorist groups** and it also provides them the capability of air strikes.
  - Drones are **relatively cheaper, compact and smaller in comparison to conventional weapons** and yet can achieve far more destructive results. There is a possible threat of them being used deliver weapons of mass destruction.
  - They **can be controlled from a remote distance** and does not endanger any member of the attacking side.
- **How India is planning to tackle the threat**
  - Defence Research and Development Organisation (DRDO) has developed an '**Anti Drone System' and it will be deployed this year.**
  - **Indian Air Force has decided to procure Counter Unarmed Aircraft System (CUAS)** that can be armed with laser directed energy weapons to bring down rogue drones.

Key provisions

Rules will apply to	• A person owning or possessing or engaged in exporting, importing, manufacturing, trading, leasing, operating, transferring, or maintaining a drone in India. • All drones that are being operated for the time being, in or over India. • These **shall not apply to drones used by the naval, military or air force.**

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<table>
<tr><td>Eligibility conditions for authorization</td><td>

Following natural persons shall be eligible for a remote pilot license:

Not less than eighteen years of age and not more than sixty-five years of age.
Have passed class tenth or its equivalent examination from a recognised Board.
Have completed the training prescribed by the Director General for the applicable class of remote pilot licence from an authorised remote pilot training organisation.

No licence shall be required for a person operating

A nano drone.
A micro drone for non-commercial purposes
For research and development (R&D) organizations operating such drones.

</td></tr>
<tr><td>Classification of drones</td><td>

Will be based upon the maximum all-up weight including payload:

<table>
<tr><th colspan="2">Classification of UAS</th></tr>
<tr><td>Nano</td><td><=250g</td></tr>
<tr><td>Micro</td><td>250g - 2kg</td></tr>
<tr><td>Small</td><td>2kg - 25kg</td></tr>
<tr><td>Medium</td><td>25kg - 150kg</td></tr>
<tr><td>Large</td><td>>150kg</td></tr>
</table>
</td></tr>
<tr><td>Drone Registration</td><td>

Drone operators will have to generate a unique identification number of a drone by providing requisite details on the digital sky platform (DSP).

DSP is an initiative by MoCA to provide a secure and a scalable platform that supports drone technology frameworks, such as NPNT (no permission, no take-off), designed to enable flight permission digitally and managing unmanned aircraft operations and traffic efficiently.

</td></tr>
<tr><td>Drone Operations</td><td>

Central Government may publish on DSP, an airspace map for drone operations segregating the entire airspace of India into red, yellow, and green zones.

<table>
<tr>
<td>Green Zone
Airspace from the ground up to a vertical distance of 400 feet (120 metre) above ground level (AGL) that has not been designated as a red zone or yellow zone in the airspace map.
Airspace from the ground up to a vertical distance of 200 feet (60 metre) AGL in the area located between a lateral distance of 8 kilometre and 12 kilometre from the perimeter of an operational airport.</td>
<td>Yellow Zone
Controlled airspace of defined dimensions above the land areas or territorial waters of India within which drone operations are restricted and shall require permission from the concerned air traffic control authority.</td>
<td>Red Zone
Airspace of defined dimensions, above the land areas or territorial waters of India, or any installation or notified port limits specified by the Central Government beyond the territorial waters of India; within which drone operations shall be permitted only under exceptional circumstances by the Central Government;</td>
</tr>
</table>

No person shall operate a drone in a red zone or yellow zone without prior permission.
In the airspace above 400 feet AGL in a designated green zone and the airspace above 200 feet AGL in the area located between the lateral distance of 8 kilometre and 12 kilometre from the perimeter of an operational airport, the provisions of yellow zone shall apply;
State Government, UT or law enforcement agency may declare a temporary red zone for a period not exceeding 48 hours at a time.

Declaration shall be done by an officer not below the rank of Superintendent of Police or its equivalent.

</td></tr>
</table>

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Drone operations for research and development (R&D)	• **Following persons shall not require a certificate of airworthiness,** unique identification number, prior permission, and remote pilot licence for operating drones:
	  ○ **R&D entities and Educational institutions** under the administrative control of, or recognised by Central Government, State Governments or UT.
	  ○ **Startups** recognised by Department for Promotion of Industry and Internal Trade.
	  ○ Any **drone manufacturer having a Goods and Service Tax Identification Number.**
	• But **such drone operations must take place within a green zone** and within the premises of the person where such R&D is being carried out; or within an open area in a green zone under such person's control.

Other key highlights	• In case of a drone with maximum all-up-weight **more than 500 kilogram, the provisions of the Aircraft Rules, 1937 shall apply.** • Import of drones and drone components shall be **regulated by the Directorate General of Foreign Trade.** • **No security clearance required** before any registration or licence issuance. • **Approvals abolished:** unique authorisation number, unique prototype identification number, certificate of conformance, certificate of maintenance, import clearance, acceptance of existing drones, operator permit, authorisation of R&D organisation, student remote pilot licence, remote pilot instructor authorisation, drone port authorisation etc. • **Safety features** like 'No permission – no take-off' (NPNT), real-time tracking beacon, geo-fencing etc. **to be notified in future.** • Digital sky platform shall be developed as a business-friendly single-window online system. • Issuance of **Certificate of Airworthiness delegated to Quality Council of India** and certification entities authorised by it.

Anti drone technologies that can be used against rouge drones

Radio Jammer	It is a static, mobile, or handheld device that uses a combination of radar and cameras to detect and jam drones in the sky by transmitting radio frequencies
GPS spoofing	This countermeasure involves sending a new signal to the drone, replacing the communication with GPS satellites it uses for navigation.
Electromagnetic Pulse	It will interfere with radio links when fired and disrupt or even destroy the electronic circuits in drones.
Net Guns	Net Cannon fired from the ground can be hand-held, shoulder-launched, or turret-mounted and is used to capture drones effectively between a range of 20m to 300m.
High energy lasers	These are high-powered counter-Unmanned Aerial Systems that shoot an extremely focused beam of light, or laser beam that melts and disrupts a drone's electronics.

6.2.2. CYBER SURVEILLANCE

Why in news?

Recent controversy regarding **Pegasus spyware** has fuelled the debate related to cyber surveillance in India.

What is cyber surveillance and its laws in India?

- Surveillance means **close observation of a person or groups** especially the one **who are under suspicion** or the act or the condition of being observed.
- Cyber-surveillance is when a person uses **"smart" or "connected" devices that communicate through a data network to monitor people or places.** This type of connected technology has also been called the **"Internet of Things" (IoT).** Devices used for cyber-surveillance are generally connected to each other and to a device or app that can control them.

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- **Communication surveillance in India** takes place primarily **under two laws:**
  - **The Indian Telegraph Act, 1885: Section 5** of the act had given power to central or state government to **intercept any message/calls in two circumstances, if it is:**
    - ✓ Against **public safety or public emergency.**
    - ✓ Necessary in the **interests of the sovereignty and integrity of India**; the **security of the State; friendly relations with foreign states** or **public order**; for **preventing incitement** to the commission of an offense.
    - ✓ Same restrictions are also imposed on free speech under Article 19(2) of the Constitution.
  - **Information Technology (IT) Act, 2000:** It was enacted to provide legal recognition for electronic communication, electronic commerce and cybercrimes etc.
    - ✓ **Section 69** of the **IT Act and the IT (Procedure for Safeguards for Interception, Monitoring and Decryption of Information) Rules, 2009** were enacted to deal with **surveillance of all electronic communication**.
    - ✓ IT Act covers the civil and criminal offences of **data theft and hacking**.
  - **Indian Telegraph rules: Rule 419A** in the Telegraph Rules in 2007 **identifies the officers** who can order surveillance of messages.
    - ✓ A **secretary to the Government of India** in the Ministry of Home Affairs can pass orders of interception in the case of Centre.
    - ✓ A **secretary-level officer** who is in charge of the home department can issue directives in case of state government.
    - ✓ In unavoidable circumstances, such orders may be made by an officer, **not below the rank of a Joint Secretary to the Government of India,** who has been duly authorised by the Union Home Secretary or the state Home Secretary.

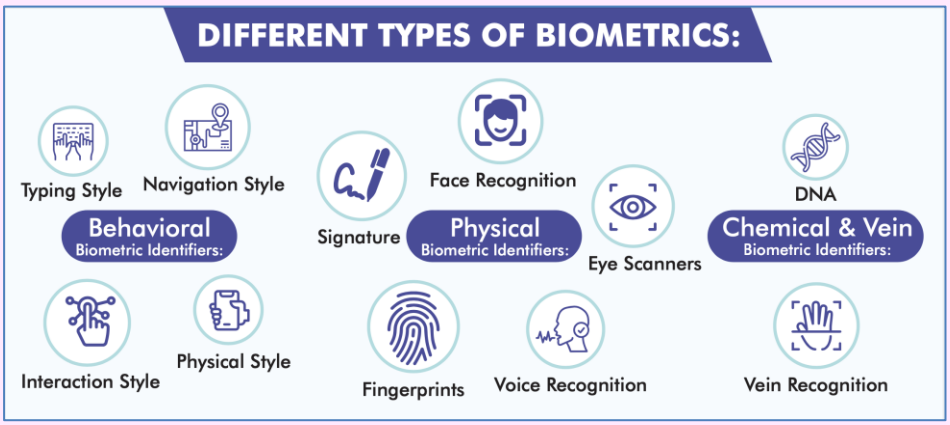
6.2.3. FACIAL RECOGNITION TECHNOLOGY

Why in news?

Recently, in order to empower the Indian police with information technology, Government has approved implementation of the **National Automated Facial Recognition System (NAFRS).**

More on news

- Facial recognition is a way of **identifying or confirming an individual's identity using their face**. Facial recognition systems can be used to identify people in photos, videos, or in real-time.



Mechanisms of some of the methods-

- **Fingerprint:** Fingerprints are easy to capture, and can verified by comparing the unique loops, arches, and whorls in each pattern.
- **Voice Recognition:** Physically, the shape of a person's vocal tract, including the nose, mouth, and larynx determines the sound produced. Behaviorally, the way a person says something – movement variations, tone, pace, accent, and so on – is also unique to each individual.
- **Retina Scan:** Retinal scans capture capillaries deep within the eye (unique to each person) by using unique near-infrared cameras.
- **Keystroke dynamics:** Keystroke dynamics leverage the fact that people follow a definite pattern while typing on a keyboard or keypad.

Apart from the aforementioned indicators, other biometrics are also emerging like ear authentication, footprint and foot dynamics and gait recognition (style of walking).

- NAFRS is to be **used by police pan-India will be issued by the National Crime Records Bureau (NCRB).**
- It would be a **mobile and web-based application hosted in Delhi** to help in crime prevention and detection, and fast track document verification.

- It is supposed to be **interlinked with other existing databases** like Crime and Criminal Tracking Network & Systems (CCTNS), Integrated Criminal Justice System (ICJS), State-specific database systems and the Khoya-paya portal.
- It will use facial recognition technology: to facilitate investigation of crime or for identifying a person of interest (e.g., a criminal) regardless of face mask, makeup, plastic surgery, beard or hair extension.

How does facial recognition work?

- **Computer algorithms map unique facial-landmarks (biometric data)** such as shape of the cheekbones, contours of the lips, and distance from forehead to chin, and **convert these into a numerical code—termed a faceprint.**
- For the purposes of 'verification' or 'identification', the system compares the faceprint generated with a large existing database of faceprints (typically available to law enforcement agencies) through a database on driver's licence or police mugshots)

6.2.4. OTHER IMPORTANT NEWS

QSim – Quantum Computer Simulator Toolkit.	• QSim toolkit allows researchers and students to **write and debug Quantum Code** that is essential for developing Quantum Algorithms. • It aims to enable Researchers and Students **to carryout research in Quantum Computing (QC)** in a cost effective manner. • It is an outcome of the project **"Design and Development of Quantum Computer Toolkit (Simulator, Workbench) and Capacity Building",** one of the first initiatives in the country to address the common challenge of advancing the Quantum Computing research frontiers in India. ○ This project is being executed collaboratively by IISc Bangalore, IIT Roorkee and C-DAC with the support of Ministry of Electronics and Information Technology (MeitY).
Metaverse	• The **metaverse is closely related to virtual reality (VR) and augmented reality (AR) technologies** currently being developed by Apple, Google, Amazon, and Microsoft in addition to Facebook. ○ It is used to **describe the concept of a future iteration of the internet,** made up of persistent, shared, 3D virtual spaces linked into a perceived virtual universe. ○ **Roblox,** a game targeted at children is often considered an **example of a metaverse**. • **AR uses a real-world setting to augment user's experience while VR is completely virtual.**
India to host Internet Governance Forum	• To be hosted in India for the first time, it will reflect **country's growing influence on international policy formulation around internet.** ○ **India is the second-largest broadband subscription country** in the world and also has highest data consumption per user per month. ○ Theme of the events is **'Inclusive Internet for Digital India'.** • **IGF is an UN-based forum for Internet Governance policy discussion.** It brings together representatives from various groups, considering all at par to discuss public policy issues related to Internet.

6.3. SPACE TECHNOLOGY

6.3.1. INDIAN SATELLITE NAVIGATION POLICY – 2021 (SATNAV POLICY – 2021)

Why in News?

In order **to achieve the goal of self-reliance in India's satellite-based navigation and augmentation services sector,** a comprehensive SATNAV Policy has been proposed by the Department of Space (DOS).

About Satellite based Navigation

- It is a **constellation of navigation satellites with global or regional coverage** and its supporting infrastructure designed to provide all weather, passive, three-dimensional position, velocity and timing data.

Major Objectives of the Policy

- Ensuring **guaranteed and continuous availability of free-to-air navigation signals** for civilian uses and **secured navigation signals for strategic uses**.

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- Working towards **compatibility and interoperability** of Indian satellite navigation and augmentation signals **with other Global Navigation Satellite Systems (GNSS) and Satellite based Augmentation Systems (SBAS) signals**.
- To provide **Position, Velocity and Time (PVT) based services.**
- **To continue and upgrade Space based navigation services (SBNS) and SBAS** as part of government's Atmanirbhar Bharat.
    - Secured SBNS exclusively for the Indian strategic community is provided through **Navigation with Indian Constellation (NavIC).**
        - ✓ NavIC or **Indian Regional Navigation Satellite System** (IRNSS) is an **independent regional navigation satellite system** developed by ISRO.
    - SBAS services via **GPS Aided Geo Augmented Navigation (GAGAN)** for the Indian airspace.
        - ✓ GAGAN is jointly developed by ISRO and Airports Authority of India **to provide navigational services and position accuracy** for Aviation.

6.3.2. OTHER IMPORTANT NEWS

Web portals to offer geospatial data	Ministry of science and technology launched **three web portals to offer geospatial data** collected by Survey of India and National Atlas and Thematic Mapping Organization **either free or at a nominal cost for the first time.** **Applications launched** • **Survey of India (SOI) Geo Spatial Data Dissemination Portal,** provides in various downloadable formats, 4,000 maps with national, state, district, and tehsil level data. • **SOI's WEB Geographic Information System, SARTHI**, to help users in creating applications for geospatial data visualisation, manipulation, and analysis without a lot of resources at their end. o **Geospatial information systems (GIS)** is the physical mapping of data within a visual representation. For example, when hurricane map is overlaid with another layer showing potential areas for lightning strikes. • **MANCHITRAN Enterprise Geoportal of National Atlas & Thematic Mapping Organisation (NATMO)** makes available thematic maps such as the cultural map of India, the climactic map, or the economic map.
Space Rice	• China harvested its first batch of "space rice" from seeds that **returned from a lunar voyage (Chang'e-5 lunar probe) last year.** o The country has been taking seeds of rice and other crops to space since 1987. • **Significance of farming in space** o After being **exposed to cosmic radiation and zero gravity, some seeds can mutate and produce higher yields** when planted back on Earth. o **Contributes to China's hybrid rice breeding** by providing more and better genetic sources to expand the seed bank.
Presence of water on moon	• ISRO home-grown instrument aboard **Chnadrayaan-2 has detected unambiguous presence of hydroxyl and water molecules on the Moon** with the precision of differentiating between the two. o Chandrayaan-2's predecessor **Chandrayaan-1, launched in 2008,** was among the lunar craft that **conclusively picked up signatures of water on moon**. • Remote detection of water and/or hydroxyl signatures on the lunar surface is of significant importance as it **provides clues to understand the various sources and water production mechanisms.**
Ganymede	• Using datasets from **NASA's Hubble Space Telescope** (Collaboration of NASA and European Space Agency), scientists for the **first time have discovered evidence of water vapour in the atmosphere of Jupiter's moon Ganymede**. • Ganymede, the **largest moon in the solar system**, contains **more water than all of Earth's oceans.** However, temperatures there are so cold that water on the surface is frozen solid. • Right now, **NASA's Juno mission is taking a close look at Ganymede and Jupiter.**
Astronomers detect Light behind Black Hole for First Time	• **X-ray radiation originating from behind a black hole** shows it as a warping space, bending light and twisting magnetic fields around itself. o Besides proving Einstein's predictions of how gravity bends light around black holes, the **X-ray echoes contain information about what is happening around a black hole.** ✓ The astronomers want to use this to **create a 3D map of the black hole surroundings.** o Earlier, a study of a **supermassive black hole** found unexpected '**luminous echoes**' – smaller, and of different colour to bright flares, bent around due to gravitational pull from black holes.

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6.3.3. SPACE MISSION/INITIATIVES IN NEWS

GISAT-1 launch failed	• ISRO's Geo-Imaging Satellite launch was supposed to **place EOS-03, an earth observation satellite, into a geosynchronous Transfer Orbit (GTO)** ultimately reaching Geostationary Orbit (GEO) via GSLV-F10 rocket. o Mission failed due to the **Cryogenic Upper Stage (3rd Stage of GSLV) ignition did not happen** due to technical anomaly. o **Cryogenic stage is the last stage of space launch vehicles** which makes use of Liquid Oxygen (LOX) and Liquid Hydrogen (LH_2) as propellants. • **About Geosynchronous Satellite Launch Vehicle (GSLV)** o GSLV is a 3-stage**expendable space launch vehicle designed, developed, and operated by ISRO** to launch satellites and other space objects into GTO.
Nauka-Russia Module	• Nauka, meaning science in Russian, is **a space module launched by Russia to replace its existing Pirs module at International Space Station (ISS)** to serve as a research facility. • **About ISS** o ISS is a **low-earth orbit space station**, launched in 1998, **with five participating space agencies as**- NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe) and CSA (Canada)
Eutelsat Quantum Satellite	• Eutelsat Quantum, the **world's first commercial fully re-programmable satellite** lifted off from French Guiana. o **Unlike conventional models** that are designed and "hard-wired" on Earth and cannot be repurposed once in orbit, **Eutelsat Quantum allows users to tailor it almost in real-time.** o This means the satellite **can be used to provide mobile coverage for moving objects** such as aircraft and oceangoing vessels, or coverage after a natural disaster or for one-off events. • It has been developed under an **ESA (European Space Agency) partnership project** with Airbus.
Near-Earth Asteroid (NEA) Scout	• **NASA's new spacecraft NEA Scout** has been safely **tucked inside the Space Launch System rocket.** • It is a **miniaturized spacecraft, known as CubeSat.** Its main mission is **to fly by and collect data from a near-Earth asteroid**. o It will be **America's first interplanetary mission using special solar sail propulsion.** ✓ Solar sail propulsion **uses sunlight to propel vehicles through space,** much the way wind pushes sailboats across water. • It will **provide critical information on asteroid's physical properties** such as orbit, shape, volume, rotation, the dust and debris field surrounding it, plus its surface properties.
Hope Probe's first image of Mars Aurora	• United Arab Emirates' (UAE) **Hope Mars mission is designed to study Mars' atmosphere across all its layers** and at a global scale throughout the course of the year. • **First image shows Aurora on Mars are seen all around the planet** at night time unlike auroras on Earth, which are seen only near north (aurora borealis) and south poles (aurora australis). o Auroras are caused when charged particles ejected from the Sun's surface, called the solar wind, enter the Earth's atmosphere.
Space tourism race	• **Three private companies – Blue Origin (Jeff Bezos), Virgin Galactic (Richard Branson) and SpaceX (Elon Musk)** were in a close race to spearhead space tourism. o Amongst them, **Richard Branson became the first to travel to space** in his own rocket. o First space tourist was Dennis Tito, who in 2001 visited international space station on a Russian Soyuz spacecraft. • Branson was accompanied by 5 crewmates **including Sirisha Bandla, a woman of Indian origin.** o She became **third Indian-origin woman to fly into space** after Kalpana Chawla and Sunita Williams.

6.4. HEALTH

6.4.1. NUCLEIC ACID VACCINES

Why in News?

Recently, Zydus Cadilla, a pharmaceutical company, got **approval for ZyCov-D, its plasmid DNA vaccine against COVID-19.**

Classroom Study Material Extended

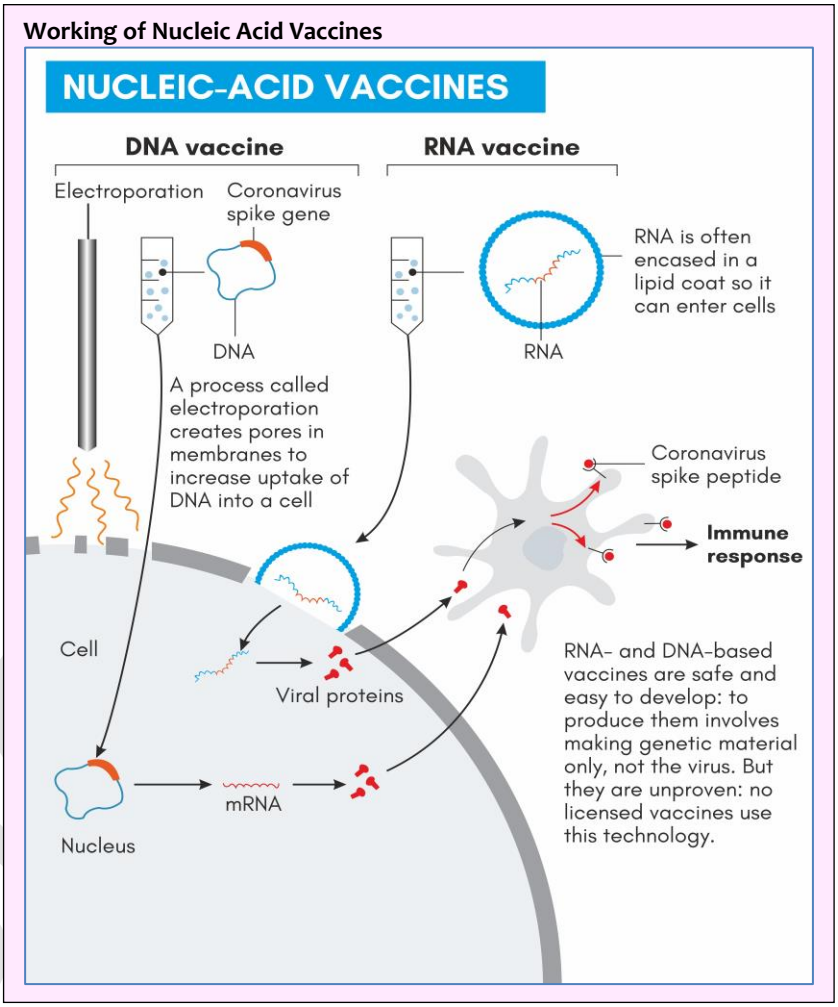
More on News

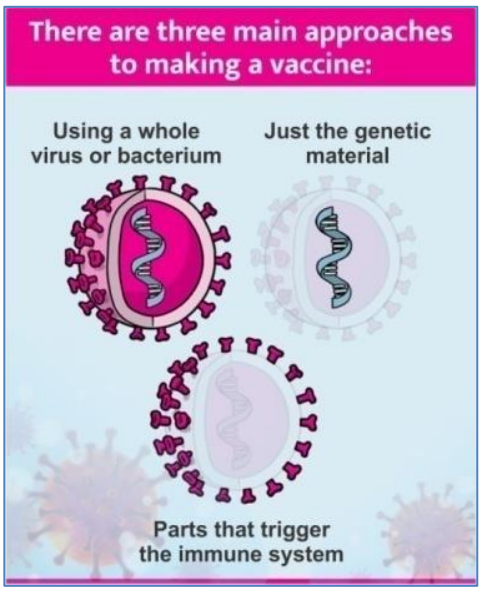
- It is **the world's first DNA vaccine against COVID-19.**
- Vaccine was developed in partnership with **Department of Biotechnology under 'Mission COVID Suraksha'** (launched under AtmaNirbhar Bharat package 3.0)**.**
- Both **DNA and RNA are types of Nucleic acid vaccines** (also known as gene-based vaccines).

About Nucleic Acid vaccines

- Instead of injecting a weakened form of a virus or bacteria into the body, Nucleic acid vaccines **use genetic material from a disease-causing virus or bacterium** (a pathogen) **to stimulate an immune response** against it.
  - That **immune response, which produces antibodies,** is what protects us from getting infected if the real virus enters our bodies.
- Depending on the vaccine, the **genetic material could be DNA or RNA.**
  - DNA and RNA are the instructions our cells use to make proteins. In our cells, DNA is first turned into messenger RNA (m RNA), which is then used as the blueprint to make specific proteins.
  - **mRNA teaches cells how to make a protein** that triggers an immune response inside human bodies.
- In the case of DNA vaccines, **a piece of DNA encoding the antigen is first inserted into a bacterial plasmid.**
  - A plasmid is a small, **often circular DNA molecule** found in bacteria and other cells. They generally carry only a small number of genes, notably some associated with antibiotic resistance.
- DNA plasmids carrying the **antigen are usually injected into the muscle and then driven into cells** with the help of technologies like electroporation (short pulses of electric current are used to create temporary pores in patients' cell membranes).
- **RNA vaccines encode the antigen of interest in mRNA.**
- The RNA can be injected by itself, encapsulated within nanoparticles (as Pfizer's mRNA-based Covid vaccine is), or driven into cells using some of the same techniques being developed for DNA vaccines.
- Unlike mRNA vaccines, DNA based vaccines donot require ultra-cold storage systems and are said to be more cost effective.

Working of Nucleic Acid Vaccines





Advantages of Nucleic acid vaccines

- **Safe and non-infectious** as they are not made with pathogen particles or inactivated pathogen.

- **Can generate a stronger type of immunity** and are well tolerated as compared to traditional vaccines.
- **Can be produced more rapidly** as they do not require a host for growth, e.g., eggs or bacteria.

Other approaches to make a Vaccine		
Whole-microbe approach	• **Inactivated vaccine by** taking the disease-carrying virus or bacterium, or one very similar to it, and inactivating or killing it using chemicals, heat, or radiation.	• This is the **way the flu and polio vaccines are made** – and vaccines can be manufactured on a reasonable scale. • **Requires special laboratory facilities** to grow the virus or bacterium safely, can have a **relatively long production time,** and will likely require two or three doses to be administered
	• **Live-attenuated vaccine** uses a living but weakened version of the virus or one that's very similar.	• **Examples are** measles, mumps and rubella (MMR) vaccine and the chickenpox and shingles vaccine. • Vaccines like this **may not be suitable for people with compromised immune systems.**
	• **Viral vector vaccine** uses a safe virus to deliver specific sub-parts – called proteins – of the germ of interest so that it can trigger an immune response without causing disease.	• **Ebola vaccine is a viral vector vaccine** and this type can be developed rapidly.
Subunit approach	• **Only uses the very specific parts** (the subunits) of a virus or bacterium that the immune system needs to recognize. o The subunits **may be proteins or sugars.**	• **Most of the vaccines on the childhood schedule are subunit vaccines,** protecting people from diseases such as whooping cough, tetanus, diphtheria and meningococcal meningitis.

6.4.2. BCG (BACILLUS CALMETTE-GUERIN) VACCINE

Why in News?

It has been 100 years since the BCG vaccine was first used in humans in 1921 against tuberculosis (TB).

About BCG vaccine

- It was developed by two Frenchmen, Albert Calmette and Camille Guerin, by modifying a strain of Mycobacterium bovis that causes TB in cattle.
  - Currently**, BCG is the only licensed vaccine available for the prevention of TB**.
- In India, BCG was first introduced in a limited scale in 1948 and became a part of the **National TB Control Programme in 1962.**
- The **efficacy of BCG is higher in geographic locations farther from the equator.**
  - This may be because regions near the equator also have a higher prevalence of environmental mycobacteria which may interfere with the protective effect against TB.
- The protective effect of the vaccine against severe forms of TB appears to wane with age.
- BCG is also used against **respiratory and bacterial infections of the newborns**, and other **mycobacterial diseases like leprosy and Buruli's ulcer** and as an **immunotherapy agent in cancer of the urinary bladder and malignant melanoma.**

About tuberculosis (TB)

- TB is caused by a bacterium called Mycobacterium tuberculosis, belonging to the **Mycobacteriaceae family** consisting of about 200 members, some of which cause diseases **like TB and leprosy in humans** and others **infect a wide range of animals.**
- According to the WHO's Global TB Report, 10 million people developed TB in 2019 with 1.4 million deaths. India accounts for 27% of these cases.
- India is committed to eliminate TB as a public health problem by 2025.
- Indian Council of Medical Research is undertaking clinical trial of two vaccines against TB- a **recombinant BCG called VPM 1002 and Mycobacterium indicus pranii (MIP).**

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6.4.3. OTHER IMPORTANT NEWS

Arogya Dhara 2.0	• Event was conducted by National Health Authority (NHA) **to mark the milestone of 2 crore hospital treatments** under Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY).
	• **Objective:** To increase the reach and create more awareness about AB PM-JAY.
	• **NHA also launched three initiatives**
	  ○ **Ayushman Mitra:** To encourage citizens to participate in motivating eligible beneficiaries to get verified under the scheme and to help them get Ayushman Cards issued.
	  ○ **Adhikaar Patra:** A welcome note containing information about the rights of AB PM-JAY beneficiaries.
	• **Abhinandan Patra:** A thank you note to the beneficiary.

Monkey B virus	• China has reported the **first human infection case** with Monkey B virus.
	• About **Monkey B virus**
	  ○ The virus, initially isolated in 1932, is **an alphaherpesvirus in macaques** of the genus Macaca.
	  ✓ Alphaherpesviruses are **pathogens that invade the nervous systems** of their mammalian hosts.
	  ○ The infection **can be transmitted via direct contact and exchange of bodily secretions** of monkeys.
	  ○ Currently, **there are no vaccines** that can protect against Monkey B virus infection.

Marburg virus	• Guinea, in western Africa, have confirmed a case of the Marburg disease
	• **About Marburg**
	  ○ It is **highly virulent disease that causes haemorrhagic fever,** with a fatality ratio of up to 88%.
	  ○ Belongs to **same family as Ebola virus.**
	  ○ First outbreak was in 1967 in Germany and Serbia simultaneously.
	  ○ Humans catch this infection **through prolonged exposure to mines or caves inhabited by Rousettus bats.**
	  ○ It can **spread through human-to-human transmission** via direct contact of infected people, and with contaminated surfaces and materials.

CoWIN Portal	• Recently, government **allowed the foreign nationals residing in India to register on CoWIN Portal** by using passport as identity proof and get vaccinated. • CoWIN is an **open source platform**, developed for **online registration for Covid-19 Vaccination programme.** ○ It allows upto **4 people** to register using same mobile number for **scheduling/ rescheduling** of vaccination in advance. • At CoWIN Global Conclave India **offered the platform to all nations** as a digital public good to combat Covid-19.

6.5. DEFENCE

Project 75 (India) [P-75(I)]	• India's Defense Ministry Issues First P-75I Submarine Tender
	• Project-75(I) **envisages indigenous construction of six modern conventional submarines** with contemporary equipment, weapons & **sensors including Fuel-Cell based AIP (Air Independent Propulsion Plant) etc.**
	  ○ **AIP technology allows conventional diesel-electric submarines to remain underwater for longer**, enhancing its lethality.
	  ○ Other countries to have an AIP system include **China, Germany, Sweden, France, Spain and Russia.**
	• P-75I submarine project – estimated at over $5.5 billion – **is the first acquisition India has undertaken through its Strategic Partnership procurement model**.

New Generation Akash Missile (Akash-NG) and Man Portable Antitank Guided Missile (MPATGM)	• Defence Research & Development Organisation (DRDO) tested two missile systems-MPATGM and a **new variant of the Akash Surface-to-Air Missile** called **Akash-NG.**
	  ○ MPATGM is an indigenously developed low-weight, **fire-and-forget missile incorporated with state-of-the-art miniaturised infrared seeker** with advanced avionics.
	  ○ Akash-NG has a **range of 60 km** and speed of **2.5 Mach.**
	• Formed in 1958, **DRDO is the R&D wing of the Ministry of Defence**with a vision to empower India with cutting-edge defence technologies and a mission to achieve self-reliance in critical defence technologies and systems.

Indigenous Aircraft Carrier (IAC)	• It has been designed by **Indian Navy's Directorate of Naval Design (DND) at Cochin Shipyard Limited (CSL)**, a Public Sector Shipyard under Ministry of Shipping (MoS).

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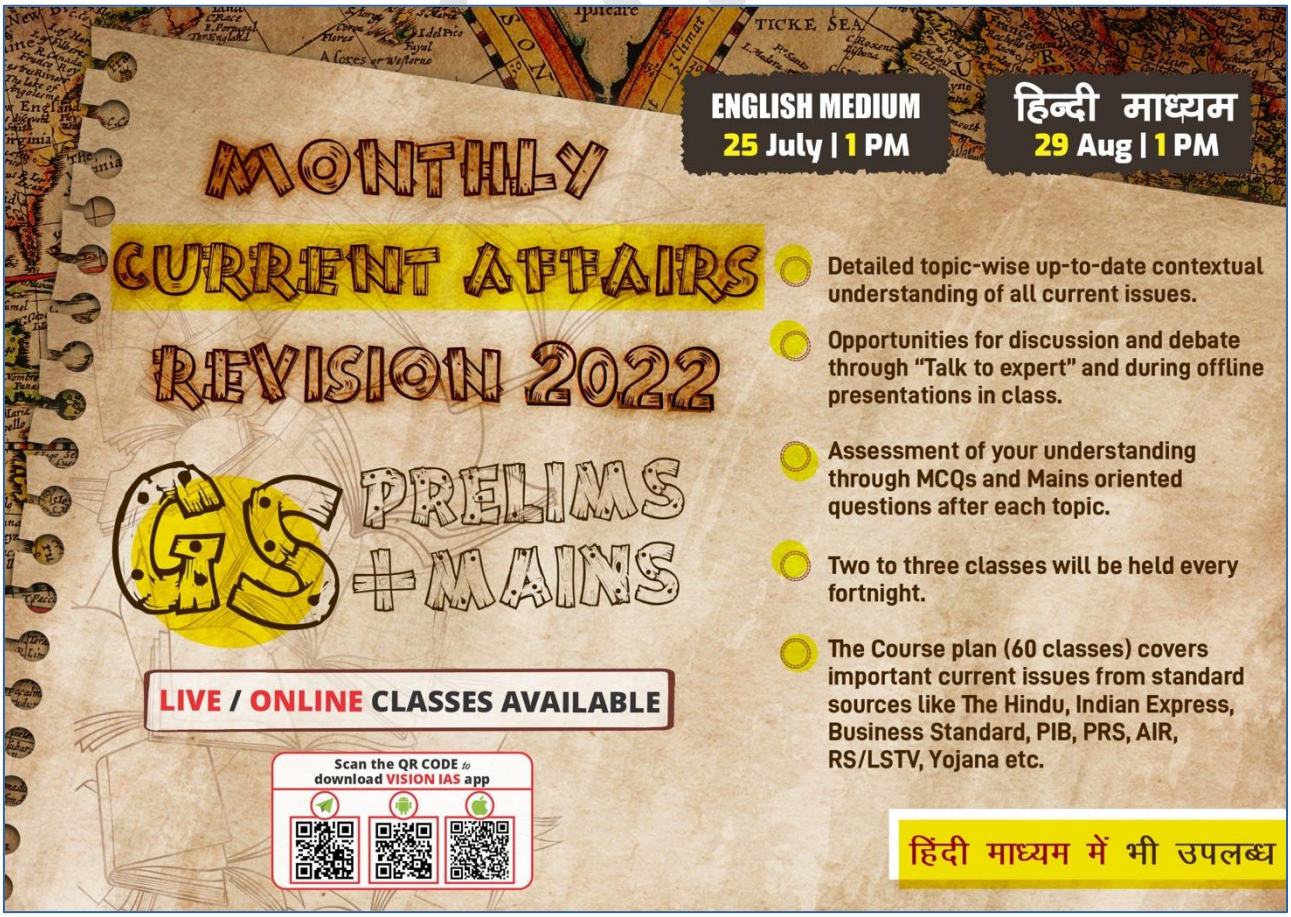
'Vikrant' begins sea trials	○ This is the **maiden attempt of the Indian Navy and Cochin Shipyard** to indigenously design and build an Aircraft Carrier. • With building of indigenous aircraft carrier**, India joins a select group of nations having niche capability** to indigenously build state-of-art aircraft carrier.
New Generation Akash Missile (Akash-NG) and Man Portable Antitank Guided Missile (MPATGM)	• Defence Research & Development Organisation (DRDO) tested two missile systems- MPATGM and a **new variant of the Akash Surface-to-Air Missile** called **Akash-NG**. ○ MPATGM is an indigenously developed low-weight, **fire-and-forget missile incorporated with state-of-the-art miniaturized infrared seeker** with advanced avionics. ○ Akash-NG has a **range of 60 km** and speed of **2.5 Mach.**
Indrajaal	• It is an **autonomous defence weapon** system that uses technologies such as Artificial Intelligence, cybersecurity and robotics **to identify and counter threats.** ○ It is capable of **protecting a large area of 1,000-2,000 sq km per system** against threats such as Unmanned Aerial Vehicles (UAVs), incoming weapons (missiles), loitering munitions and Low-Radar Cross Section (low flying) targets. • Indrajaal, developed by Hyderabad-based Grene Robotics company, came in the **backdrop of possible use of drones** in recent attack in J&K.
Defence India Startup Challenge 5.0	• Launched under **Innovations for Defence Excellence - Defence Innovation Organisation (iDEX-DIO)** • iDEX aims to **achieve self - reliance and foster innovation and technology development in Defence and Aerospace** by engaging Industries including MSMEs, start-ups, individual innovators, R&D institutes and academia. ○ DIO is a "not for profit" company to administer the iDEX framework. ○ Department of Defence Production will release funds to DIO for setting up and managing the iDEX network.



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7. CULTURE

7.1. INITIATIVES OF UNESCO

7.1.1. WORLD HERITAGE TAG

Why in News?

Recently, Kakatiya Rudreswara Temple (also known as the Ramappa Temple) and Dholavira have been inscribed on UNESCO's World Heritage list.

More on News

- With the addition of these two sites, **India now has 40 sites in the UNESCO's** World Heritage list (32 cultural, seven natural and one mixed).
- Dholavira is the first site of the ancient Indus Valley Civilisation (IVC) in India to get the tag.
- These sites are nominated by UNESCO as embodied in an international treaty called the **'Convention concerning the Protection of the World Cultural and Natural Heritage' adopted in 1972.**
- Also, some other Indian Sites have been included in the Tentative List of UNESCO's World Heritage Sites.

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What UNESCO tag means for these sites?

- It will galvanise national and international tourism not only to these sites but also to other historical sites in these states.
- A higher number of tourists automatically translates into better amenities and more money for the community where the heritage site is located.
- Once a site is inscribed on the World Heritage List, the resulting prestige often helps raise awareness among citizens and governments for heritage preservation.
- A country may also receive financial assistance and expert advice from the World Heritage Committee to support activities for the preservation of its sites.
- The inscribed site also gains protection under Geneva Convention against destruction during war.

7.1.2. RUDRESHWARA TEMPLE

Rudreshwara Temple, at Palampet, Mulugu district, near Warangal in Telangana, is a masterpiece of **Kakatiyan style of Temple architecture** with the use of engineering innovation by creating **floating bricks, sand-box foundations, material selection knowledge** and ingenuity in stone sculpting as technological ensemble.

About sand-box technique

- Using this technology, **a certain area is dug up, filled with sand, and then the structure is constructed** on top of it.
- Structures built on these 'sandboxes' have a robust foundation as the **seismic waves generated due to earthquakes are absorbed by the sand.**

- Its **construction started in 1213 AD during the reign of Recharla Rudra,** a general of Kakatiya king Ganapati Deva.
  - It has been **built over 40 years by sculptor Ramappa.**
- It is a sandstone temple **dedicated to Ramalingeswara Swamy** (**Shiva**). Ramappa is the main Shiva temple in a larger walled temple complex, which includes several smaller temples and structures.
  - It is close to the shores of the Ramappa Cheruvu, a Kakatiya-built water reservoir.
- The temple building stands on a **6 feet high star-shaped platform** with intricate carvings on beams and pillars of carved granite and dolerite.
  - It includes **pyramidal Vimana** (horizontally stepped tower) made of lightweight porous bricks, so-called **'floating bricks'**, which reduced the weight of the roof structures.
    - ✓ Bricks were made of **clay mixed with acacia wood, chaff, and myrobalan** (a tree), making it sponge-like and allowing it to float on water.
  - The chamber of the temple is **crowned by a 'shikharam' and surrounded by 'pradakshinapatha'.**
- There is high artistic quality **illustration of regional dance customs and Kakatiyan culture** on walls, pillars, and ceilings.
- Famous Italian merchant and explorer Marco Polo had remarked that temple was **"brightest star in the galaxy of medieval temples of the Deccan".**

About Marco Polo (1254-1324)

- He was a **Venetian merchant** believed to have journeyed across Asia at the height of the Mongol Empire.
- He **served the Mongol ruler Kublai Khan,** who sent him on special missions to places like Burma and India.
- In India, **Marco Polo stopped by in both Tamil Nadu and Kerala (1289-1293).**
  - During his time in India, he witnessed people wearing fewer clothes, King wearing large amount of jewellery, people fondness with paan and wrote about Jain monk's simple lifestyle.
  - Marco Polo **praised Rudrama Devi's rule**.
- He also **wrote The Travels of Marco Polo** with the help of notes taken during his adventures.

About Kakatiyas (1123–1323 CE)

- Kakatiyas were the **political successors of the Kalyana Chalukyas** (Kannada speaking region) in the Telugu speaking region ruled by the Chalukyas.
  - The Kakatiyas, along with the Hoysalas and Yadavas had **announced themselves as rulers independent of the Chalukyas.**
- Kakatiya **ruled most of eastern Deccan region** comprising present day Telangana and Andhra Pradesh, and parts of eastern Karnataka and southern Odisha.
  - Their **capital was Orugallu, now known as Warangal.**
- **Important rulers of Kakatiya dynasty**
  - **Prolla II:** He was the first independent ruler of Kakatiya dynasty.

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- **Rudradeva (1163-1195):** His exploits are described in his famous inscription in the Rudresvara temple at Anumakonda. From this inscription it is evident that he had defeated a large number of Chalukyan feudatories round his kingdom.
  - ✓ Rudradeva was succeeded by his brother **Mahadeva (1195–1198),** and Mahadeva by his son **Ganapati (1199–1261).**
- Ganapati had no sons and **was succeeded by Rudrama Devi, one of the few queens in Indian history.** She was able to repulse the Pandyas of southern Tamil Nadu, Eastern Gangas of Orissa, and Seunas of Devagiri.

- In 1303, **Alauddin Khilji invaded the Kakatiya territory** which ended up as a disaster for him.

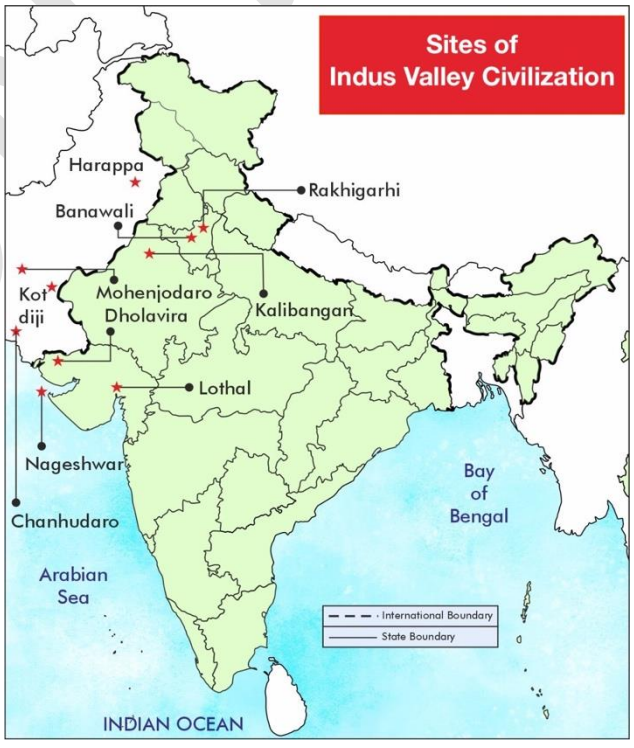
Contribution of Kakatiyas to art, architecture and literature

- Kakatiyas have carried forward the **stellate temple form and adopted the Vesara style of Vimana from the Chalukyas** and have very well adapted it to the cultural geography of Telangana.
  - The **use of simple material like sand in the construction of foundation** of a lofty temple making it an earthquake resistant structure is a masterpiece of the creative effort of the Kakatiyas in the field of construction and geo-technology.
  - The distinct style of Kakatiyas for the gateways to temple complexes, unique only to this region confirms the highly evolved proportions of aesthetics in temple and town gateways in South India.
- **Well planned irrigation systems** - devoid of any perennial water source, stand as characteristic features of Kakatiyan kingdom.
  - Recently, **Telangana Government also started 'Mission Kakatiya'** to restore tanks and irrigation network taking inspiration from Kakatiya Dynasty.
- **Telugu literature reached a level of maturity** in the 14th century during the Kakatiya period.
- **Nritta Ratnavali authored in 1253 A. D.** by Jayasenapati was inspired from the dancing female figures carved in Ramappa Temple.
- The study of Rudreshwara temple's dance scultpures gives an **understanding of the desi dance traditions such as perini, prekhana, gavundali, rasaka, dandarasaka ghatisisri nrttam** performed in the temple and the thrust on desi sthankas, charis and karnanas.

7.1.3. DHOLAVIRA

Dholavira (Occupied between ca. 3000-1500 BCE), the southern centre of the Harappan Civilization, is **sited on the arid island of Khadir (located within Rann of Kachchh)** in Gujarat. It was discovered in 1968 by archaeologist Jagat Pati Joshi.

- At Dholavira an entire sequence spanning the history of Harappan cities, **from early Harappan town / pre-urban phase to the height of the Harappan expansion and the late Harappan is observed.**



Key Features of Dholavira

Town Planning	• Comprises of two parts: **a walled city and a cemetery to the west of the city.**
	  ○ The walled city consists of a **fortified Castle with attached fortified Bailey i.e., outer wall** (very similar to the Harappan settlement at Kalibangan) **and Ceremonial Ground, and a fortified Middle Town and a Lower Town.**
	  ○ **A series of reservoirs are found** to the east and south of the Citadel.
	  ○ The great majority of the **burials in the Cemetery are memorial in nature.**

Water Management /Conservation systems	• **Two seasonal streams provided water,** a scarce resource in the region, to the walled city. • Water diverted from seasonal streams, scanty precipitation and available ground was **sourced, stored, in large stone-cut reservoirs** which are extant along the eastern and southern fortification. • To further access water, **few rock-cut wells are evident in different parts of the city.**

Artistic and Technological advancement	• **Bead processing workshops and artifacts of various kinds** such as copper, shell, stone, jewellery of semi-precious stones, terracotta, gold, ivory and other materials have been found. • **Design, execution, harnessing of local materials** in an effective manner.
Strategic location	• **Location in the island of Khadir was strategic to:** o **Harness different mineral and raw material sources** (copper, shell, agate-carnelian, steatite, lead, banded limestone, among others). o **Facilitate internal as well as external trade** to the Magan (modern Oman peninsula) and Mesopotamian regions.
Other Features	• Settlements like **Surkotada, Juni Kuran in Gujarat indicates considerable inspiration** drawn from Dholavira. • **A stratified social order is demonstrated** by heavily fortified castle and ceremonial ground as well as streets and houses of different proportion quality. • **Walls were made of sandstone or limestone** instead of mud bricks used in many other Harappan sites. • **Some unique features of Dholavira include:** a cascading series of water reservoirs, outer fortification, two multi-purpose grounds, nine gates with unique designs, and funerary architecture featuring tumulus — hemispherical structures like the Buddhist Stupas.

7.1.4. LIST OF TENTATIVE WORLD HERITAGE SITES

Iconic riverfront of the historic city of Varanasi (Uttar Pradesh)	• The 6.5km long riverfront of River Ganga presents a view of the magnificent architectural row of lofty buildings, holy sites and ghats. o There are **84 stepped ghats**, which is a unique Indian typology of an architectural interface of the river with the land o **Five ghats called Panchatirthis** are mentioned in the ancient text **Matsya Purana**: ✓ Asi ✓ Dashashvamedha ✓ Manikarnika ✓ Panchaganga (believed to be the meeting point of the five rivers- Ganga, Yamuna, Sarasvati, Kirana and the Dhutpapa) ✓ Adi Keshava • Besides Hinduism, Varanasi is also linked to the cultural, spiritual and religious traditions of other major religions: o **Lord Buddha gave his first sermon** "Turning the wheel of Law" in 528 BC at Sarnath near Varanasi. o According to Jain tradition, it is the **birthplace of the 4 Jain Tirthankaras**-Suparshvanath (7th), Chandraprabhu (8th), Shreyanshnath (11th) and Parshvanath (23rd) o **Guru Nanak visited Varanasi twice** in the 16th century. o The **Alamgir mosque** on **Panchganga ghat** was built by Mughal Emperor **Aurangzeb**. • **Other traditions practised** here include wooden toy making, saree making, silk weaving, metal, wood and terracotta handicrafts, paintings, the use of Sanskrit language and Vedic chanting.
Temples of Kanchipuram (Tamil Nadu)	• Situated on the banks of **River Vegavathi**, the historic temple town of Kanchipuram **once had 1,000 temples**, of which only 126 (108 Shaiva and 18 Vaishnava) now remain. • Kanchipuram was the **capital of the Pallava dynasty** from 6th to 9th century CE, under whom the Dravidian style of temple architecture began and flourished. • Of the 11 temples identified under this nomination, some important ones are: o **Kailasanathar Temple**: Built by the Pallava **king Rajasimha I (Narasimhavarman II)**, it is the oldest structure in Kanchipuram. The temple's sanctum sanctorum contains a **unique 16-sided shivalinga** carved out of black granite. o **Ekambaresvara temple**: It is **one of the five major Shiva temples** of Pancha Bootha Sthalams (each representing a natural element) representing the element – Earth. ✓ The temple's Raja Gopuram is one of the tallest (57m) in south India and was **built by the Vijayanagara king Krishnadevaraya**. ✓ One notable feature is the Aayiram Kaal Mandapam, or the **"hallway with a thousand pillars"**. o **Varadharaja Perumal temple:** Dedicated to **Lord Vishnu**, it is one of the 108 Divya Desams **visited by all the 12 Alwar saints.** It has a **'hundred pillar' Mandapam** built by the Vijayanagara kings. o **Ulagalanda Perumal Temple**: This temple has a unique feature of having four Divya Desams in the same complex, which is not seen anywhere.

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	• **Kanchipuram** is also **famous for its silk weaving**. Temple motifs such as gopuram, peacocks, nightingales, rudraksham beads and floral designs are part of the intricate weaving found on Kanchipuram sarees.
Megalithic site of Hire Benkal (Karnataka)	• The site of Hire Benkal consists of **almost 1000 megalithic burial structures** situated **on a granite peak** for more than 2500 years. Major architectural varieties found are dolmens, cairns, passage chambers, stone circle, menhirs, anthropomorphic figure carved from granite, etc o Megalith is derived from two greek words-'megas' meaning large and 'lithos' meaning stone. They are constructed either as burial sites or commemorative memorials. • Another unique feature of Hire Benkal is **prehistoric rock paintings**. 11 rock shelters have been discovered with motifs **like human figures, horse rider holding battle-axe, row of deers**, bull with long horns, peacock, etc. • The site provides an exceptional insight into the funerary and ritual practices of the **Iron Age – Megalithic Culture of Indian Protohistory**. • In India, **megaliths** are seen in **Peninsular South, Deccan plateau, Vindhyas and North West region of Indian subcontinent**.
Bhedaghat-Lametaghat in Narmada Valley (Madhya Pradesh)	• Bhedaghat is the only place in **river Narmada**'s course where it falls into a 30-meter deep gorge forming the **Dhuandhar fall** and flows through the narrow gorges. o Here the towering marble rock rises perpendicularly on both sides, creating a stunning spectacle. It is referred to as the **Grand Canyon of India**. • Bhedaghat area is the **only example of regional metamorphism in limestone** within a short distance of 2 to 3 km in the world. • Besides, **dinosaur fossils have been found** in the Narmada valley particularly in this area. • Narmada originates at Amarkantak and flows west in the rift valley between the Satpura and Vindhya Range.
Satpura Tiger Reserve (Madhya Pradesh)	• **Located at Hoshangabad**, Satpura Tiger Reserve (STR) is a prime example of a **central Indian highlands ecosystem**. • It supports 17% of India's tiger population and 12% of its tiger habitat. • STR was declared as the **first biosphere reserve of Madhya Pradesh** in the year 1999. It consists of **three protected areas- Satpura National Park, Bori Sanctuary and Pachmarhi Sanctuary**. • **Archeological significance:** There are **55 rock shelters which are 1500 to 10000 years old** with wall paintings depicting animals like elephants, tigers, deers, and porcupines.
Maratha Military Architecture in Maharashtra	• This consists of **14 forts from the era of 17th century Maratha king Chhatrapati Shivaji**. Important among them includes: o **Shivneri Fort:** It is the **birthplace of Chhatrapati Shivaji** in 1630. o **Alibag/ Kulaba Fort:** It was chosen as one of the forts to be modeled as a **naval base by Chhatrapati Shivaji**. o **Rajgad Fort:** It is one of the forts kept out from the Mughals when Shivaji signed the Treaty of Purandar (1655) and also the longest occupied by him (26 years). • The networks of forts built on hills, land and sea are **excellent examples of how existing terrain/ landscape was used for developing the guerrilla warfare strategy by Shivaji and Maratha army** to combat the Mughals on the landside and European coastal powers from the seaside.
Santiniketan, West Bengal	• **Santiniketan, known as a university town** (houses Vishva Bharati university), was originally an ashram **built by Debendranath Tagore,** where anyone can meditate on one Supreme God. • Among the structures built were **Santiniketan Griha (house) and a stained glass temple**, where worship is non-denominational. • **Other important structures** built at a later date includes: o **Patha-Bhavana,** with beautiful frescoes by Nandalal Bose. o **Natun-Bari,** a thatched cottage. • **About Viswa-Bharati University** o It was founded at Santiniketan in West Bengal by the **Nobel Laureate Rabindranath Tagore** in 1921 (completed 100 years). o It was a **conscious repudiation of the British education system.** o **It was centred around** simplicity in externals which is necessary for true spiritual realization. The curriculum had **music, painting, dramatic performances and other performative practices.**

Sacred Ensemble of Hoysalas (Belur and Halebid in Karnataka)	• Set in the foothills of Western Ghats, sacred ensembles **included Hindu temples, Jaina temples, secondary structures,** intricate sculpture and iconography, temple dances and music etc. ○ Chennakeshava temple at Belur and Hoysaleshwara temple at Halebid are considered as masterpieces of Hoysala Art. • Most remarkable architectural achievement is **stone temples in star shaped plans.** • Architecture of the Hoysalas is a **hybrid of the nagara and dravidian style.** • **Kalyani or stepped wells** are commonly found. • Ensembles were important agents in the development of spiritual beliefs of **Vaishanavism, Shaivism, and Jainism.**

Related News

Recently, **UNESCO's 'Historic Urban Landscape Project (HULP)', for Gwalior and Orchha** cities (Madhya Pradesh) was launched.

- **Gwalior** was established in 9th century and **ruled by Gurjar Pratihar Rajvansh, Tomar, Baghel Kachvaho and Scindias.**
- **Gwalior is known for its palaces and temples,** including Sas Bahu Temple.
- **Orchha is in the Bundelkhand region of MP** and was the 16th century capital of the erstwhile Bundela dynasty.
- The famous spots in the town are **Raj Mahal, Jehangir Mahal, Ramraja Temple, Rai Praveen Mahal, and Laxminarayan Mandir.**
- HULP was started in 2011 as an approach for the **management of heritage resources in dynamic and constantly changing environments**.
  - ✓ It is based on the recognition and identification of a l**ayering and interconnection of natural and cultural, tangible and intangible, international and local values** present in any city.

- **Significance of HULP**
  - It aims to **enhance and integrate the urban heritage** of the cities, especially in the context of the Smart City initiative.
  - **Chemical treatment of historic spots will be done** so that art inscribed on them will become more visible.
  - **UNESCO will suggest best measures and resources** for the development of these places.
  - **Extensive survey work and mapping of the urban characteristics** of the historical cities will be carried out.

Liverpool (UK)

- Recently, **Liverpool (UK) was removed from the World Heritage List.**
- Decision was taken citing **concerns about overdevelopment** including plans for a new football stadium.
- Liverpool was **added to World Heritage List in 2004** in recognition of its role as one of the world's major trading centres in the 18th and 19th centuries – and its pioneering dock technology, transport systems and port management.
- It is **only the third location to lose its World Heritage status. Arabian Oryx Sanctuary in Oman** (2007) and **Elbe Valley in Dresden, Germany** (2009) are the other two sites.

7.2. MODERN INDIAN HISTORY

7.2.1. JALLIANWALA BAGH MASSACRE

Why in News?

Prime Minister of India recently unveiled the plaque and dedicated the renovated complex of Jallianwala Bagh Smarak at Amritsar to the nation and inaugurated Museum/Galleries.

More on the news

- The Jallianwala Bagh Smarak commemorates the Jallianwala Bagh Massacre that occurred on **April 13, 1919.**
- The memorial was set up by the Jallianwala Bagh National Memorial Act, 1951 (recently amended in 2019), making it the first national monument of the country governed by an Act of Parliament that had the **Prime Minister as its chairperson.**
- It was recently renovated by NBCC under the supervision of five-member committee headed by DG, Archaeological Survey of India (ASI) and the funds were provided by the Ministry of Tourism under the scheme on "Assistance to Central Agencies".

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About Jallianwala Bagh Massacre

The massacre wasn't an isolated incident, rather an incident that happened with a multitude of factors working in the background.

EVENTS THAT LED TO THE MASSACRE

Passage of Rowlatt Act and Initiation of Rowlatt Satyagraha	• The Rowlatt Act (Black Act) authorized the government to imprison or confine, without a trial, any person associated with seditious activities. This led to nationwide unrest. • Gandhiji initiated **Satyagraha** to protest against the Rowlatt Act and the British issued to **prohibit him from entering Punjab.**
Arrest of leaders in Amritsar and Unrest in Punjab	• **Dr Saifuddin Kitchlew and Dr Satyapal,** the two prominent leaders organised a peaceful protest against the Rowlatt Act in Amritsar and were subsequently arrested. • Soldiers fired upon demonstrators demanding release of the 2 leaders, resulting in violent outbreaks where railway lines, telegraph posts and government buildings were destroyed and Europeans and Indians killed.
Punjab placed under Martial law	• Most of Punjab was under martial law and civil liberties, including freedom of assembly, were curtailed. • **Brigadier-General Dyer** banned gatherings of more than four people.
Gathering at Jallianwala Bagh	• A crowd of around 10,000 had gathered at Jallianwala Bagh to celebrate the festival of Baisakhi on **April 13, 1919** and to protest against the arrest of the 2 leaders.
The Massacre	• **Brigadier-General Dyer,** headed to the Bagh with his troops, blocked the only exit and ordered them to open fire without giving any warning. • The firing continued for 10-15 minutes and ceased only after the ammunition had run out. • The total estimated figure of the dead as given by General Dyer and Mr Irving was 291. However, other reports including that of a committee headed by Madan Mohan Malviya put the **figure of dead** at over 500.

Aftermath of the Massacre

- The news of Jallianwala Bagh spread and led to widespread demonstrations to which the government responded with brutal repression. Seeing the violence, Mahatma Gandhi called off the Satyagraha.
- **Rabindranath Tagore renounced his Knighthood in protest**.
- In **October 1919, the Disorders Inquiry Committee,** also known as the **Hunter Commission**, was formed to inquire about the massacre.
- In 1920, the Commission censured Dyer for his actions, directed **him to resign** from his appointment as Brigade Commander and informed him that he would receive no further employment in India.
- Later in **1940**, at Caxton Hall in London, **Udham Singh, an Indian freedom fighter, killed Michael O'Dwyer,** the Lieutenant Governor of Punjab during the massacre, who had approved of Dyer's action and imposed martial law in Punjab after the firing, thereby ensuring that the news did not get out.

The **shock and outrage led to the non-cooperation movement of 1920-22,** which proved a step in the direction of ending the British rule of India 25 years later.

Related News- Partition Horrors Remembrance Day

- Government declared that that **August 14 would now be observed as "Partition Horrors Remembrance Day"** to commemorate the "struggles and sacrifices" of millions who were displaced and who lost their lives during Partition.

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- Based on Mountbatten's **3 June Plan**, on 18 July 1947 the **Indian Independence Act 1947** from British Parliament received Royal Assent, dividing India into **two independent dominion states** of India and Pakistan.
- This lead to migration of millions of people with many losing life or suffering brutal tragedies.

7.3. MALABAR/MOPLAH REBELLION

Why in news?

Malabar Rebellion leaders Variamkunnath Kunhamed Haji, Ali Musaliar and 387 other "Moplah martyrs" will be removed from the **Dictionary of Martyrs of India's Freedom Struggle**.

Indian Council of Historical Research (ICHR)

- It is an **autonomous organization under the Ministry of Education** established in 1972.
- It was registered under Societies Registration Act.
- The primary aim and objective of the ICHR is to promote and give directions to historical research and to encourage and foster objective and scientific writing of history.

More on the news

- A three-member panel, which reviewed the entries in the fifth volume of the dictionary, brought out by the **Indian Council for Historical Research (ICHR),** is understood to have recommended the deletion as it felt that the 1921 rebellion was never part of the independence struggle but a **fundamentalist movement**.
- It concluded that Haji was a rioter who had established a Sharia court and a large number of "Moplah martyrs," who were under-trial prisoners, died due to diseases such as cholera and natural causes hence cannot be treated as martyrs.

About Moplahs

- Moplahs/Mappilas were the **Muslim tenants (kanamdars)** and **cultivators (verumpattamdars)** inhabiting the Malabar region where most of the landlords (**janmi or jenmies**) were upper caste Hindus.
- Moplahs had gained some prominence over their landlords during the Mysorean invasions by Hyder Ali and Tipu Sultan. But after the British occupation of Malabar in 1792 (following the 3rd Anglo-Mysore war), the domination of the Hindu landlords was re-established.
- In this scenario, the Mappilas soon found themselves at the mercy of their Hindu landlords who were sustained by the British authority as their agents.

About Malabar rebellion

- Malabar rebellion, also known as the Moplah riots, was an armed uprising of Muslim tenants against British rulers and local Hindu landlords in 1921.
- It has often been perceived as one of the first nationalist uprisings in southern India and has even been described as a **peasant revolt**.
- It occurred within the broader spectrum of the **Khilafat/Non-cooperation movement (1920-1922)** led by Mahatma Gandhi.

Causes of The Revolt

History of feudal conflicts in the Malabar region	○ Peasant-landlord relations were historically strained in the region. ○ Evidently, about **32 uprisings were organized by the Moplahs**, between 1836 and 1919, against high caste Hindu landlords, their relatives or assistants and British officials.
Agrarian discontent	○ The economic condition of Mappila tenants had deteriorated overtime due to oppressive British policies resulting in increased taxation, insecure tenancy, rack renting, forced evictions etc. ○ This had given rise to anti-British and anti-feudal sentiments.
Political mobilization of mappilas	○ The **Congress reached out to the Mappila cultivators to mobilize support for independence through Khilafat movement** and support agrarian reforms in the region. • A Khilafat committee was formed in Malabar in June 1920, which became increasingly active. • In August, 1920, Gandhi along with Shaukat Ali (the leader of the Khilafat movement in India) visited Calicut to spread the combined message of non-cooperation and Khilafat among the residents of Malabar. • By January 1921, the Mappilas, under their religious head Mahadum Tangal pledged support to the non-cooperation movement.
Immediate cause	○ Mappilas under the leadership of Variyamkunnath Kunjahammed Haji took up arms in August 1921 due to the arrest of Khilafat leader Ali Musaliyar and a widespread rumour that a prominent mosque in Thirurangadi has been raided.

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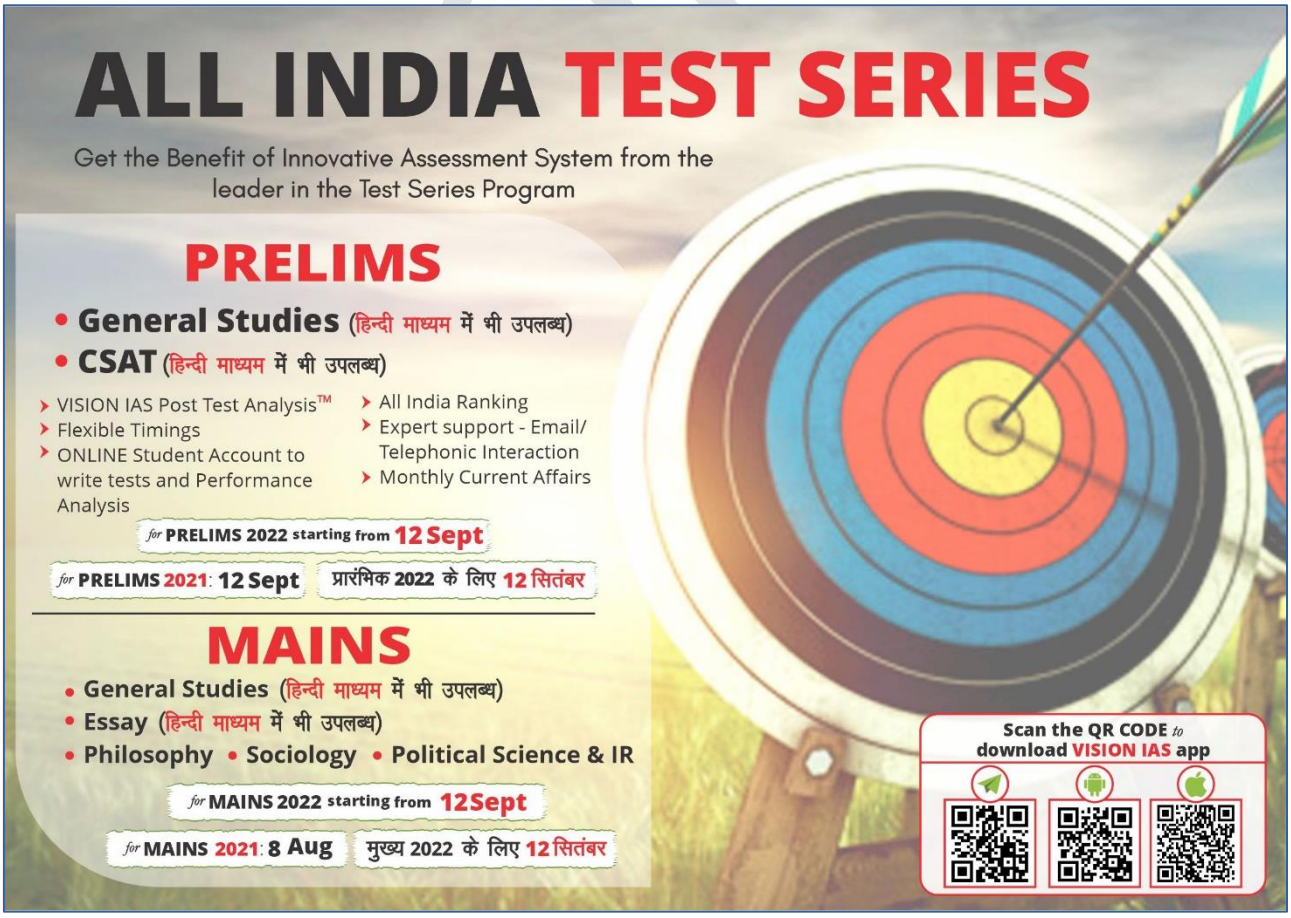
Course of the rebellion

- It largely took the shape of guerrilla-type **attacks on janmis, police and troops**.
- Symbols of the colonial state – telegraph lines, train stations, courts, post offices etc. and homes of landlords were attacked.
- When the rebellion spread across the Malabar district, British officers and the local police escaped, leaving **vast tracts of territory firmly under the control of the local rebels**.
    - The territory was declared an 'independent state' in August 1921 with Haji as its ruler.
    - For nearly six months, he ran a **parallel Khilafat regime headquartered in Nilambur**, with even its own separate passport, currency and system of taxation.
    - Tenants were granted the power over the lands they cultivated along with tax incentives.
- Although the movement started off largely as a protest against British authorities, it acquired communal overtones that culminated into **communal violence**.
    - Massacres, forcible conversions, desecration of temples etc. became a part of the revolt.

British suppression of the revolt

- The British government responded to the movement with much aggression, bringing in **Gurkha regiments** to suppress it and imposing **martial law**.
    - **Wagon tragedy:** Approximately 60 Mappila prisoners on their way to a prison, suffocated to death in a closed railway goods wagon.
- By January 1922, they had taken back the areas held by the rebels and captured all their key leaders.
    - Haji was arrested and was sentenced to death along with his compatriots.



8. GOVERNMENT SCHEMES IN NEWS

8.1. MINISTRY OF AYUSH

8.1.1. NATIONAL AYUSH MISSION (NAM)

Objectives	Salient features

• To provide **cost effective AYUSH Services,** with a universal access through upgrading AYUSH Hospitals and Dispensaries, co-location of AYUSH facilities at Primary Health Centres (PHCs), Community Health Centres (CHCs) and District Hospitals (DHs).
• To **strengthen institutional capacity** at the state level.
• **Support cultivation of medicinal plants** by adopting Good Agricultural Practices (GAPs).
• **Support setting up of clusters** through convergence of cultivation, warehousing, value addition and marketing and development of infrastructure for entrepreneurs.
	• The Centre has, recently, **approved continuation** of this Centrally Sponsored Scheme **for further 5 years i.e., from 2021 to 2026.**
	  ○ The Mission was **launched in 2014.**
	• AYUSH systems of medicine include **Ayurveda, Yoga & Naturopathy, Unani, Siddha & Sowa-Rigpa and Homoeopathy**.
	
	Components of the Mission
	
	Mandatory Components (80% of the Resource pool)
	AYUSH Services (including co-location of AYUSH facilities at Primary Health Centres (PHCs), Community Health Centres (CHCs) and District Hospitals(DH)
	AYUSH Educational Institution
	Quality Control of AYSUH & Drugs, Medicinal Plants
	School Health Programme: to address both physical and mental health needs of School going children using Yoga and counselling
	
	Flexible Components (20% of resource pool)
	AYUSH Wellness Centres including Yoga & Naturopathy
	IEC activities And Tele-medicine
	Crop Insurance for Medicinal Plants
	Public Private Partnership provision and Interest subsidy component for **Private AYUSH educational Institutions**
	
	• **Monitoring and Evaluation** - Dedicated MIS monitoring and evaluation cell would be established at Centre/ State level.
	• **AYUSH Gram:** one village per block will be selected where AYUSH based lifestyles are promoted.
	• **10% of the Health and Wellness Centers (HWCs) of the Ayushman Bharat Scheme** shall be operationalized by the Ministry of AYUSH through State / UT Governments.
	  ○ Therefore, some AYUSH Dispensaries under NAM will be upgraded **as AYUSH Health and Wellness Centres.**
	• **Subsidy** is being given to farmers **for cultivation of medicinal plants.**

8.2. MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY (MEITY)

8.2.1. SAMRIDH SCHEME (START-UP ACCELERATORS OF MEITY FOR PRODUCT INNOVATION, DEVELOPMENT AND GROWTH)

Objectives	Salient Features
• **Support existing and upcoming Accelerators** to select and	• It will **develop Startup Accelerator ecosystem in India.** • **Two components** as: ○ **Providing administrative** cost to Accelerators for providing acceleration services to startups.

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accelerate IT-based startups to scale. • **Accelerating the startups** by providing customer connect, investor connect, international expansion, and overall business growth in terms of revenue, users, and valuation parameters.	○ **Matching equity seed funding** provided to startups for scaling their business. • To support around **300 startups** through nearly **40 cohorts** in next **three years**, the accelerators will develop **customized acceleration programs to fit startup needs in the cohort with-** ○ **Services** ranging from customer connect, investor connect, capacity enhancement, product enhancement, international immersion, revenue growth etc. ○ Up to **₹ 40 lakh** investment in a start-up based on current valuation and growth stage of the Start-Up through selected accelerators. ○ Facilitate **equal matching investment** by accelerator/investor. ○ Encourage accelerators to **utilize the investment vehicle which is most conducive to the startup for its growth.** ○ **A maximum of 10 and minimum of 5 startups** in each cohort. • The formulation of **process to support** existing and upcoming startup accelerators and the **implementation supervision** of the scheme will be done by a **10 member committee** under the **Secretary** (MeitY). • **Implementing agency:** MeitY Start-up Hub (MSH).
MeitY Start-up Hub (MSH)	• It is a **nodal entity** under MeitY to **facilitate MeitY's vision** of promoting technology innovation, start-ups and creation of Intellectual Properties. • It acts as a **national coordination, facilitation and monitoring centre** to integrate all the incubation centres, start-ups and innovation related activities of MeitY.

8.3. MINISTRY OF FINANCE

8.3.1. UBHARTE SITAARE FUND

Objectives	
• **To identify** Indian enterprises with potential advantages by way of technology, products, or processes, along with **export potential**, but which are currently underperforming or unable to tap their latent potential to grow. • **To enhance India's export competitiveness** in select sectors through finance and extensive handholding support to Indian companies with potential to be future champions in the domestic arena while catering to global demands.	• **Fund Corpus: ₹ 250 crore** with a **greenshoe** option of **₹ 250 crore.** ○ In the context of an initial public offering (IPO), **greenshoe option is a provision that grants the right to sell investors more shares than initially planned** by the issuer **if the demand for a security issue proves higher than expected.** • **Setup by: Exim Bank** and **Small Industries Development Bank of India (SIDBI).** • **Nature of Assistance:** A **mix of structured support** to export-oriented units in manufacturing and services. i.e. **financial** and **advisory services** in the form of: ○ investments in **equity** and **equity-like instruments,** ○ **debt** (funded and non-funded) ○ **technical Assistance**. • **Other Features:** Based on model followed by other nations like Germany, i.e., identifying champion sector and provide support or handhold them through necessary technological help or funds to emerge as champion, the fund will help: ○ **Micro, Small and Medium companies** with annual turnover of up to ₹ 500 crore with ability to penetrate global market, ○ **SEBI and EXIM bank have jointly identified over 100 potential proposals from diverse sectors**, such as pharmaceuticals, auto components, engineering solutions, agriculture, and software.

8.4. MINISTRY OF HEALTH & FAMILY WELFARE (MOHFW)

8.4.1. MUSQAN

Objectives	Salient features
• To **reduce preventable mortality and morbidity** among **children below 12 years of age.** • To **enhance Quality of Care (QoC)** as per National Quality	• MusQan is designed to ensure provision of quality child-friendly facility based services from birth to children upto 12 years of age.

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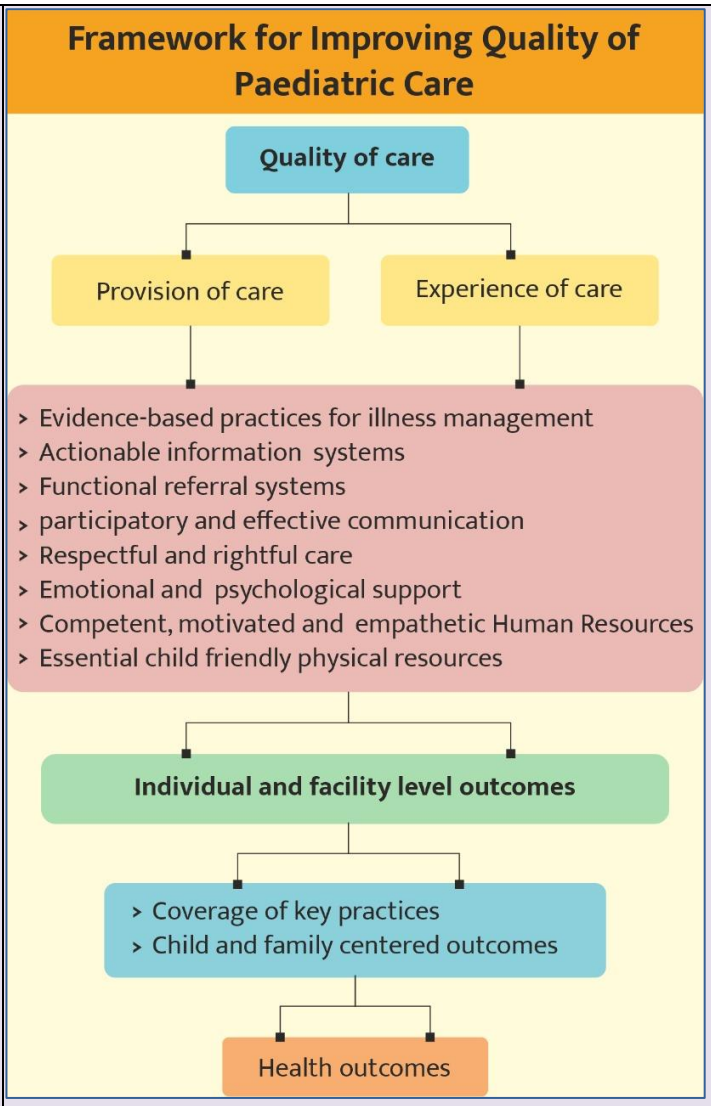
Assurance Standards **(NQAS).**

- To promote **adherence to evidence-based practices and standard treatment guidelines & protocols.**
- To **provide child-friendly services to newborn and children** in humane and supportive environment.
- To **enhance satisfaction of mother and family,** seeking healthcare for their child.



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National Quality Assurance Standards (NQAS)	• NQAS is **accredited by the International Society for Quality in Healthcare (ISQua).** • NQAS has been **developed keeping in the specific requirements for public health facilities as well global best practices.** • It **supports the delivery of quality care within the facilities.** ○ Currently, it is available for District Hospitals, Community Health Centres (CHC), Primary Health Centres (PHC) and Urban Primary Health Centres (UPHC). • A systemic approach under the NQAS implementation has **established a well-structured institutional framework** from the facility level to the national level. • There is an **in-built system of State and National level certification of health facilities** those exhibiting compliance to the NQAS norms and sustaining also.

8.5. MINISTRY OF LAW AND JUSTICE

8.5.1. CENTRALLY SPONSORED SCHEME (CSS) FOR DEVELOPMENT OF INFRASTRUCTURE FACILITIES FOR JUDICIARY

Objective	Salient features

Improving the **physical infrastructure of the Subordinate Courts** as also the **housing needs for judicial officers of District and Subordinate Courts** in the country with a view **to facilitate better justice delivery.**	• The Centre has, recently, **approved continuation** of this Centrally Sponsored Scheme **for further 5 years i.e. from 2021 to 2026.**
	  ○ This scheme been **in operation since 1993-94 to augment the resources of the state Governments** for the construction of court buildings and residential accommodation of judicial officers/judges covering district and subordinate courts**.**
	• **Fund sharing pattern between Centre and States: 90:10** for 8 states of North East Indian along with Himachal Pradesh and Uttarakhand and **60:40** for other states
	• **Activities to be carried out:**
	  ○ **Construction** (in all the District and Subordinate Courts) of **court halls** and **residential units for Judicial Officers (JO); Lawyers' Halls; toilet complex; Digital Computer Rooms.**
	  ○ **Operationalisation of Gram Nyayalayas** in implementing states with an expenditure of Rs.50 crore.
	• **Provision of Flexi fund:** States/UTs if they so desire can set aside the fund allocated (25% in the case of States and 30% in the case of UTS) including Central and State share, as flexi fund to be spent on any sub-scheme or innovation or component that is in line with the overall aim and objective the scheme.
	• **Monitoring and evaluation:**
	  ○ **High Court Level Monitoring Committee** chaired by the Chief justice of the respective High Court.
	  ○ **Central Level Monitoring Committee chaired by the Secretary the Department of Justice (DoJ), GoI.**
	  ○ **Nyaya Vikas Portal:** It is an **online monitoring** mechanism that collects data on completion of court halls and residential units under construction. It is **developed by the DoJ** with technical assistance from **National Remote Sensing Centre (NRSC), ISRO.**

8.6. OTHER INITIATIVES/SCHEMES

Initiatives/Schemes	Ministry	Feature

PM UJJWALA (Pradhan Mantri Ujjwala Yojana – PMUY) 2.0.	Ministry of Petroleum & Natural Gas	• **Procedures have been simplified** with less paperwork.
		• Beneficiaries will get **a deposit free LPG connection first refill and hotplate free of cost.**
		• M**igrants will not be required to submit ration cards or address proof.** A self-declaration for both **'family declaration' and as a 'proof of address' will suffice.**
		• **Eligibility:** An adult woman belonging to a poor household and not having LPG connection in her household who belongs to any of the following categories:
		  ○ Eligible as per **SECC 2011 list**
		  ○ Belongs to SC/ST households, be a beneficiary of Pradhan Mantri Awas Yojana (PMAY), Antyodaya Anna Yojana (AAY), Forest dwellers, Most Backward Classes (MBC), Tea and Ex-Tea Garden Tribes, People residing in riverIslands (Beneficiary will submit supporting document)

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		✓ If she is not falling in the above 2 categories, then she can stake her claim to be **a beneficiary under Poor household by submitting 14-point declaration.**
Agriculture Infrastructure Fund (AIF)	Ministry of Agriculture and Farmers Welfare.	• It was launched in 2020 to deal with the Covid crisis. • **NABARD will steer this initiative** in association with the Ministry of Agriculture and Farmers Welfare. • **Objective:** To mobilize a **medium - long term debt financing facility for investment** in viable projects for post-harvest management (PHM) infrastructure and community farming assets • **Corpus:** Rs. 1 Lakh Crore • **Financial assistance:** It is provided in in the form of **interest subvention and credit guarantee** for setting PHM projects which will help better post harvest management and reduction in wastage. • **Beneficiaries:** Farmers, Primary Agricultural Credit Societies (PACS), Farmer Producers Organisations (FPOs), Self Help Groups (SHG) and others for building "community farming assets" and "post-harvest agriculture infrastructure • **Eligible community assets project:** Organic inputs production; Bio stimulant production units; Infrastructure for smart and precision agriculture; Projects identified for providing supply chain infrastructure for clusters of crops including export clusters; Projects promoted by Central/State/Local Governments or their agencies under PPP for building community farming assets or post-harvest management projects. • **Duration:** Overall period of the scheme has been extended **upto 2032-33 (initially it was for** 2020 to 2029**).**
KisanSarathi: Digital Platform	Joint Initiative of Ministry of Agriculture & Ministry Electronics and Information Technology	• It facilitates farmers to **get right information at right time** in their desired language. o **Empowers farmers with the technological interventions** and reach farmers in remote areas. o Farmers can **avail personalised advisories on agriculture and allied areas** directly from scientists of **KrishiVigyan Kendra** through the digital platform. • Highly valuable in **Agricultural Extension, Education and Research activities** of ICAR.
SonChiraiya	Ministry of Housing and Urban Affair (MoHUA)	• **'SonChiraiya' is a** 'brand and logo' **for marketing of urban Self-Help Group (SHG) products**. • It will **increase visibility and global access for products** made by urban SHG women.
Pradhan Mantri Dakshta Aur Kushalta Sampann Hitgrahi (PM-DAKSH)	Ministry of Social Justice and Empowerment	• Started from 2020-21, it **aims to provide free training to 2.71 lakh persons from SCs/OBCs, Safai Karamcharis,** etc. through interventions as: o Up-skilling/Reskilling o Short Term Training Programme (focus on self-employment) o Long Term Training Programme (for global class skills), o Entrepreneurship Development Program • Recently, **'PM-DAKSH'** Portal and **'PM-DAKSH'** mobile app is developed in collaboration with **National e-Governance Division** (NeGD), to make the skill development schemes **accessible to the target groups.**
SAMVAD (Support, Advocacy & Mental health interventions for children in Vulnerable circumstances And Distress)	Ministry of Women and Child Development	• **2nd phase of SAMVAD** programme was launched on the eve of Independence Day. o During first year, SAMVAD provided coping mechanism for children in distress by **training close to 1 lakh stakeholders comprising of Child Protection Functionaries, tele-counsellors, educators, law professionals among others.** • **About SAMVAD** o It is a **National Initiative and Integrated Resource that works in child protection, mental health and psychosocial care.** o It is under Dept. of Child and Adolescent Psychiatry, National Institute of Mental Health And Neuro Sciences (NIMHANS), **Supported by Ministry of Women & Child Development.**

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SUJALAM campaign	Ministry of Jal Shakti	• **A campaign to create a million soak pits** in villages across the country over the next 100 days, **to help manage grey water and prevent the clogging of water bodies.** ○ Although the Central government does not have any comprehensive estimate of the total number of soak pits needed countrywide, **the States have been asked to develop their own targets.** • The **Campaign would boost the momentum of Swachh Bharat Mission (Gramin) - Phase II activities** through community participation and it will increase awareness about ODF-plus activities.

Scheme for Rebate of State and Central Taxes and levies (RoSCTL)	Ministry of Textiles	• Recently, the Centre has approved the **continuation** of the RoSCTL w.e.f. 01st January **2021 to 31st March 2024 for apparel/garments** and Made-ups.
		  ○ This scheme was announced in March, 2019.
		• The Scheme shall be implemented by **Department of Revenue** with end to end digitization for issuance of transferable Duty Credit Scrip.
		• **Significance:**
		  ○ Continuation of RoSCTL for Apparel/Garments and Made-ups will make these **products globally competitive** by **rebating all embedded taxes/levies which are currently not being rebated under any other mechanism.**
		  ○ It will ensure a **stable and predictable policy regime** and provide a level playing field to Indian textiles exporters.
		• It will **promote startups and entrepreneurs** to export and ensure creation of lakhs of jobs.

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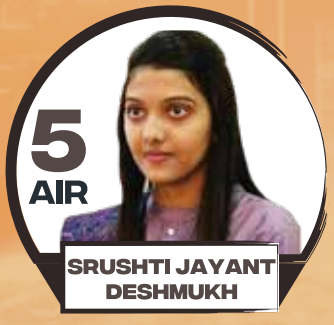

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