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# CURRENT CONNECT

SPECIALLY DESIGNED FOR PRELIMS 2023

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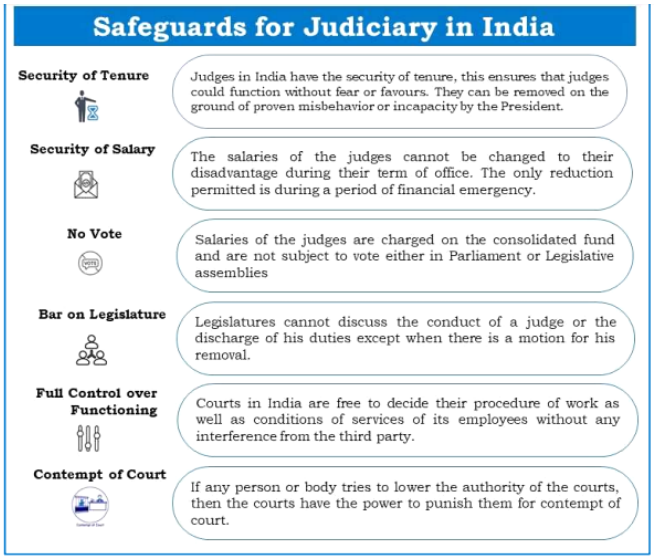
# POLITY AND GOVERNANCE

## Judiciary

### Issues with Judiciary

**Context**: On the occasion of the celebration of Constitution Day, the President of India in her speech asserted that citizens should be effective stakeholders in the dispensation of justice

**Uncle Judges Syndrome**:- It refers to **the corrupt practice in the Indian judiciary** where relatives of a judge are either favored in the judgement or appointed in the judiciary. Former **CJI RM Lodha** once remarked that **every third High Court Judge is an Uncle**. This creates a breeding ground for favouritism and nepotism in the Indian judiciary



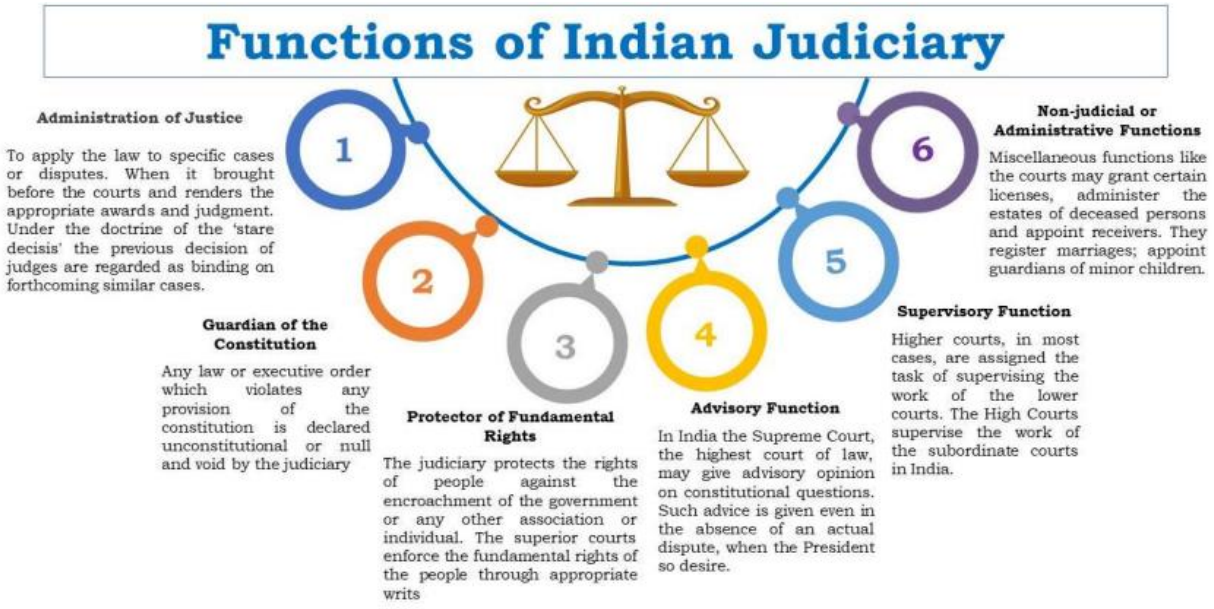

**Quality of Free Legal Aid**

Free Legal Aid is implicitly a fundamental right under **Articles 14 and 21**. Further, **DPSP**- **Article 39-A** advocates the provision for free legal aid to citizens in need.

Free legal services are **provided under the Legal Services Authorities Act, 1987**, and are operationalized by the National Legal Services Authority (NALSA).

***Who are entitled to Free Legal Services?***

(a) A member of a Scheduled Caste or Scheduled Tribe;
(b) A victim of trafficking in human beings or begar as referred to in Article 23 of the Constitution;
(c) A woman or a child; (a woman is entitled for free legal aid irrespective of her income or financial status)
(d) A mentally ill or otherwise disabled person;
(e) A person under circumstances of undeserved want such as being a victim of a mass disaster, ethnic violence, caste atrocity, flood, drought, earthquake or industrial disaster; or
(f) An industrial workman; or
(g) In custody
(h) a person in receipt of annual income less than the amount mentioned in the respective state's schedule
(i) Senior citizens' eligibility for free legal aid depends on the Rules framed by the respective State Governments




**Digital Judiciary**



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**SUVAS** (Supreme Court Vidhik Anuvaad Software) is an artificial intelligence system that can help with the translation of court decisions into regional dialects.

**SUPACE** (Supreme Court Portal for Assistance in Court Efficiency) to first understand judicial processes that require automation, and then to assist the Court in improving efficiency and reducing pendency by encapsulating judicial processes that can be automated through AI.

**E-Courts Mission Mode Project**: was conceived to transform the Indian judiciary by enabling courts with ICT (Information and Communication Technology). It is a pan India project for District Courts across the country, overseen and sponsored by the Ministry of Law and Justice and the Department of Justice. The goal was to deliver citizen-centric services in a timely and effective manner.

## EWS Judgment

**Context:** A Constitution Bench of the Supreme Court in a 3:2 majority decision upheld the **validity of the 103rd Constitutional Amendment**.

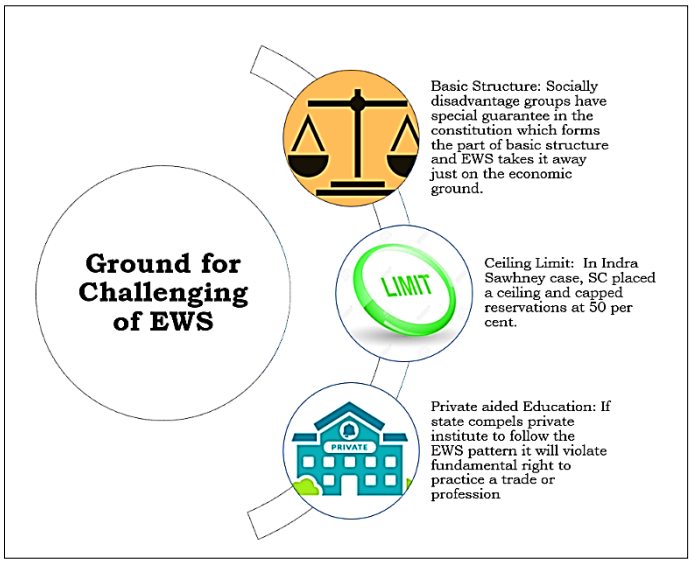
**About Economically Weaker Section (EWS) Reservation**

**Genesis**

- EWS was introduced through the 103rd Constitutional amendment act.
- The act amended **Article 15 and Article 16** of the constitution and **inserted 15(6) and 16(6).**
- It provides for reservation in **jobs and admissions** in educational institutes for EWS.
- Both **Centre and the states** can provide reservations to EWS.
- The reservation is in **addition to the existing reservations** and carries a **maximum limit of 10%** of total seats.
- The **basis of the EWS lies in Article 46 (DPSP)** of the constitution which mandates that the state should protect the educational and economic interests of the **weaker sections** of society.
- **Minority educational institutions** under Article 30 (1) are **excluded** from the reservation.
- Economic weakness will be decided based on criteria such as family income and other indicators of economic disadvantage.

### Mandal Commission

- In 1979, the Morarji Desai government set up the Mandal Commission to identify socially or educationally backward classes to address caste discrimination.
- Chaired by B.P. Mandal, the Commission recommended that members of OBCs be given 27 per cent reservations for jobs under the Central government and public sector undertakings.
- This would take the total number of reservations for Scheduled Castes and Scheduled Tribes and OBC to 49 per cent.




**Benefits**

- ➢ It fulfils the goal of social, economic, and political inclusion. It opens the doors for the most distressed, poorest of all people who due to their economic backwardness have remained excluded from attending higher educational institutions and public employment.
- ➢ It will **remove the stigma associated with reservation** because reservation has historically been related to caste.
- ➢ It **diversifies national priorities** as it introduced a form of economic criteria for the poor.

**Challenges**

- ✓ It **might twist the idea of social justice by bequeathing further privilege** to communities that are believed to be beholders of an oppressive caste system
- ✓ Lack of **unavailability of Data** on whether forward castes are inadequately represented in government jobs and higher educational institutions.



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✓ The criteria used by the government to decide the eligibility for this reservation are vague & arbitrary. There was no consideration of GDP per capita for every State. Without knowing the income distance between states, fixing a yardstick would be difficult.

**Court Observation**

Since it was a split verdict two views emerged

**Majority View**:

- EWS **Quota doesn't violate the basic structure** of the constitution and reservation in addition to the existing reservation does not violate provisions of the constitution.
- Reservation is an **instrument of affirmative action by the state** for the inclusion of both socially and economically backward classes along with the class at a disadvantage.
- The **50% ceiling limit provided under the Indira Sawhney** judgment is not inflexible. Also, the **ceiling is limited to the SC/ST/SEBC/OBC communities** and not the general category.
- The **basic structure is not breached when the state makes provisions for education**.
- Article 15(4), 15(5), and 16(4) makes SC/ST and backward classes a separate category altogether.

**Will private college have EWS quota?**

Under Article 15(5) of the Constitution, the **state has power to make reservations in private educational institutions.** They cannot be standing outside national mainstream. As they are education centers and everyone have right to education. They will have EWS quota.

**Minority View:**

- The idea behind reservation was to enable equal access and therefore any economic criteria which exclude SC/ST/OBC just because they had pre-existing benefits is injustice.
- Though the EWS quota claims that it creates a level playing field exclusion of SC, ST, OBC **discriminates against the equality code and violates basic structure**.
- Breach of the 50% ceiling limit would become "a gateway for further infractions and result in compartmentalization

## Bail Reforms in India

**Context**: The Supreme Court expressed its concern over the situation of bails given in India. It asserted that **there is a pressing need for reforms** in the law related to bail. It also called on the government to make legislation regarding bail rules in India on the lines of the law in the United Kingdom.

**Pre-Connect**

- Legally **bail means procurement of release from prison** of a person awaiting trial or an appeal, by the deposit of security to ensure their submission at the required time to legal authority.
- The **Magna Carta of 1215** prohibited imprisonment without being judged by his peers or the law of the land.
- In **1275, the Statute of Westminster** was enacted which divided crimes as bailable and non bailable.
- The **Bill of Rights of constitution of US** through the 5th, 6th and 8th Amendments, guaranteeing citizens the right to due process of law, a fair and speedy trial and protection against excessive bail.

**Criminal Jurisprudence in India**

- ***The Indian Penal Code (IPC)*** is the official criminal code of India drafted in **1860** on the recommendations of the first law commission of India established in 1834 under the Charter Act of 1833 under the Chairmanship of **Lord Thomas Babington Macaula**y.
- ***The Code of Criminal Procedure (CrPC)*** is the main legislation on procedure for **administration of substantive criminal law in India.** It was enacted in **1973** and came into force on **1st April 1974.**

**Situation in India**

- The Code of Criminal Procedure (CrPC), 1973 **does not define the word bail** rather chapter 33 of the code relates to the provisions related to bail in India.
- The basic scheme of granting bail is a legislative division or judicially evolved conditions.
- CrPC categorises offences as bailable and non-bailable
  - *Section 436 of the CrPC* states that a person accused of a bailable offence under I.P.C. can be granted bail.
  - *Section 437 of the CrPC* states that the accused does not have the right to bail in non-bailable offences. It is the **discretion of the court** to grant **bail in case of non-bailable offences**.



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- A provision **mandates the court to consider granting bail** to an accused below **16 years, someone who is sick, or is a woman**.
- The Code lacks a proper system or framework to govern the bail procedure.
- The extent of problem can be underlined from the fact that according to data compiled by the **National Crime Records Bureau (NCRB) for 2020, about 76%** of all prison inmates in the country were **under trials**. This shows the rot in the criminal justice system.
- In 2005, CrPC was amended to add two new principles:
    - Granting bail on the personal bond to a person who is indigent without sureties. However, financial obligation still remains a major obstacle for bail. Though such obligations are necessary as without them chance of absconding of accused might increase.
    - Provision of 436A was added according to which any accused incarcerated for the period prescribed in the provision has right to bail.
- Though Law commission had called **bail system in India as inadequate and inefficient**. It recommended reforms as an amendment to the Code rather than bringing a new standalone law.

**Protection against Indiscriminate Arrest**

- **Article 20:**"No person shall be convicted of any offence except for violation of the law in force at the time of the commission of the act charged as an offence, nor be subjected to a penalty greater than that which might have been inflicted under the law in force at the time of the commission of the offence."
- **Article 21**: "No person shall be deprived of his life or personal liberty except according to procedure established by law."
- **Article 22**:Protection against arrest and detention in certain cases.
    - Right to be informed of the grounds of arrest.
    - Right to consult and be defended by a legal practitioner.
    - Right to be produced before a magistrate within 24 hours, excluding the journey time.
    - Right to be released after 24 hours unless the magistrate authorises further detention.

**Supreme Court Observations**

- ✓ Courts have underlined and suggested various reforms such as:
    - If not otherwise required bails application **have to be disposed of within two weeks and anticipatory bail within six weeks**.
    - Unwarranted arrests are carried out in violation of Section 41 (**empowers police to arrest without a warrant**) and Section 41A (deals with the procedure for appearance before police) of the CrPC. There is need to stop rising culture of too many arrests for this lower courts should make sure that:
        - No arrest for non-cognisable offence
        - For cognisable offence arrest must be necessitated only prevent accuse from further committing crime or tampering with evidence or from disappearing.
        - One is arrested because they are requiring to be produced before courts.
        - In any other, situation bail should be granted.
- ✓ Supreme Court recently **reiterated the need for a separate law for bail in India**. It is of opinion that colonial legacies are reflected in our bail system. Despite amendments of CrPC required change has not been observed on the ground. It believes that uniformity and certainty in the decisions of the court are the foundations of judicial dispensation. Uniformity and certainty in the decisions of the court are the foundations of judicial dispensation.

## Custodial Deaths in India

**Context:** Custodial death has been a cause of concern in India. A lot of emphasis is now placed on the scientific methods of investigation and still incidents of custodial deaths continue

**What does a Custodial death (CDs) mean?**

- CDs are the death of a person in police custody, it also includes death of a person in judicial custody i.e., undergoing trial and serving a sentence.
- It happens when interrogation frustrates officers and when they seem to arrive at a dead end they resort to torture and violence which could lead to the death of the suspect.



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- Custodial torture and other excesses often lead to death under police custody, however sometimes due to any health conditions which might be unknown to police, custodial death occurs.

**Constitutional Provisions against Custodial violence**

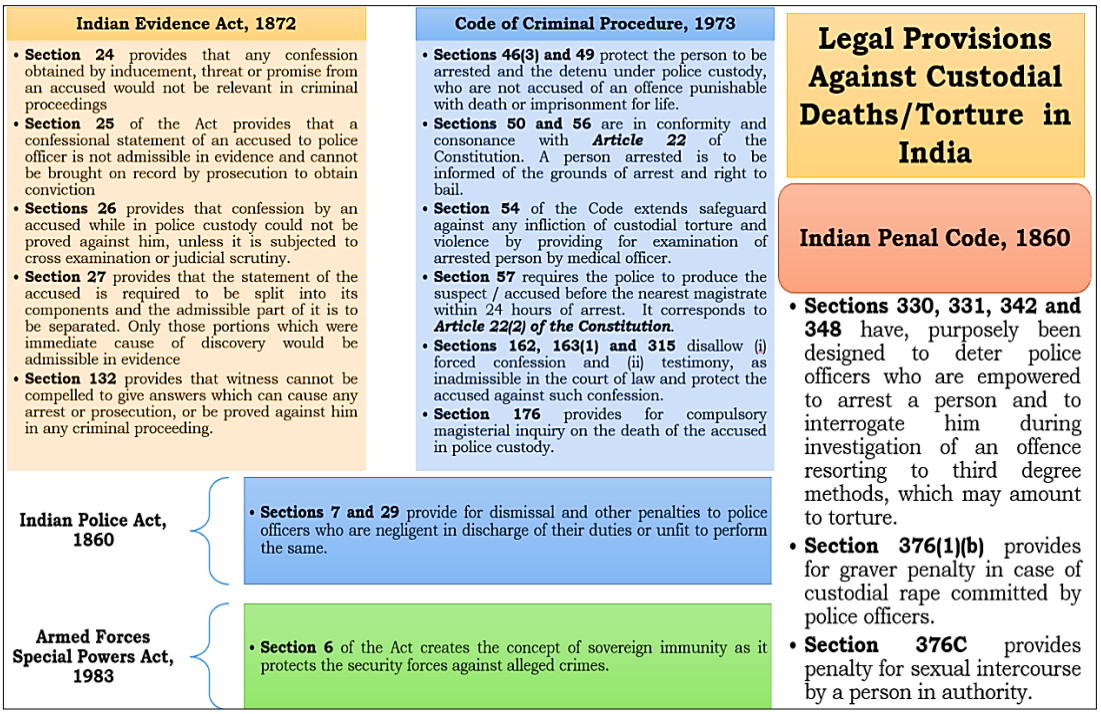
- **Article 21:** *"No person shall be deprived of his life or personal liberty* ***except according to procedure established by law****".* It also provides protection from torture as fundamental right.
- **Article 22:**provides "Protection against arrest and detention in certain cases". It also **includes right to counsel**.

**Data on custodial deaths**

- National Crime Records Bureau (NCRB) data shows that in the **last 20 years, 1,888 custodial deaths were reported** across the country, 893 cases registered against police personnel and 358 personnel charge-sheeted. But only 26 policemen were convicted in this period.
- Data also points towards the grim situation in which more than 2,000 human rights violation cases were also recorded against the police between 2000 and 2018. And only 344 policemen were convicted in those cases.

**Role of Judiciary**

- In ***Kishore Singh Vs. State of Rajasthan (1981)*** SC held that the **use of third degree** by the police is violative of Article 21 of the Constitution of India.
- In **Joginder Kumar Vs. State of UP & Ors** (1981) case SC held that those **police should avoid arrest provided only in heinous offence**. It opined that the existence of the power to arrest is one thing. The justification for the exercise of it is quite another.




- In *D. K. Basu Vs. State of West Bengal (1994)* case SC has established **norms required to be followed during arrest and detention**. This includes

  It is the duty of the Police Officer not to use third-degree methods while having investigation and interrogation from the accused.

  Attention must be required in checking the working environment, training, and orientation of the Police Officials with the basic human values.

  Surprise inspections by Non-Official Visitors (NOVs) should also be made mandatory which would act as a preventive measure against custodial torture.

  A balanced approach should be used by the police to extract the information from hardened criminals.

## Inter-Operable Criminal Justice System

**Context**: Recently, Centre has approved the **implementation of Phase II** of the **Inter-Operable Criminal Justice System (ICJS)** project by the Ministry of Home Affairs at a total cost of Rs 3,375 crore during the period from 2022-23 to 2025-26.



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• ICJS is a **national platform for enabling integration of the main IT system** used for delivery of Criminal Justice in the country. It **seeks to integrate the five pillars of the system** viz **Police** (through Crime and Criminal Tracking and Network Systems), **e-Forensics for Forensic Labs**, **e-Courts** for Courts, **e-Prosecution** for Public Prosecutors and **e-Prisons** for Prisons.

According to MHA, in Phase-I of the project, individual IT systems have been implemented and stabilized even as search of records have been enabled on these systems.

**What is ICJS**?

➢ICJS is an initiative of the **e-Committee to enable seamless transfer of data and information among different pillars** of the criminal justice system, like courts, police, jails and forensic science laboratories, from one platform.

➢With the aid of the ICJS platform, the **metadata of FIR and charge sheet can be accessed** by all the **High Courts and subordinate** courts. Documents like FIR, case diary and charge sheet are uploaded by police in PDF format for utilization by the courts.

➢ High Courts are also requested to **appoint one Nodal Officer** to ensure that apart from the police, other State functionaries like Provident Fund Organisation, Forest Department, Municipal Authorities, Labour Welfare Boards Town Planning Authorities and Food and Drug Administration are also part of ICJS.

➢ The ICJS platform is an **effective tool for the case and court management**, as all the relevant information of a case will be available in real-time for use by the courts. Compliance of judicial orders and summons can also be achieved expeditiously, ensuring effective time management.

**National Crime Record Bureau** was set-up in **1986** to function as a repository of information on crime and criminals so as to assist the investigators in linking crime to the perpetrators based on the recommendations of the **Tandon Committee, National Police Commission (1977-1981)** and the MHA's Task force (1985).

**National Information Centre** under the Ministry of Electronics and Information Technology (**MeitY**) is the **technology partner of the Government ofIndia**. NIC was established in the year **1976** with the objective to provide technology-driven solutions to Central and State Governments.

**Phase-II of ICJS**

✓ Under Phase-II, the **system is being built on the principle of 'one data one entry'** whereby data is entered only once in one pillar and the same is then available in all other pillars without the need to re-enter the data in each pillar.

✓ The ICJS system would be **made available through a dedicated and secure cloud-based** infrastructure with high-speed connectivity.

✓**National Crime Records Bureau** (NCRB) **will be responsible for the implementation** of the project in **association with National Informatics Centre** (NIC).

## Article 142 of the Indian Constitution

**Context:** Supreme Court invoked its **extraordinary power under Article 142** of the Constitution to release AG Perarivalan, who has served over 30 years in jail in the **Rajiv Gandhi assassination case.**

- Article 142 of the Constitution of India provides a special and extraordinary power to the Supreme Court **to do complete justice to the litigants who have suffered traversed illegality or injustice in the proceedings.**
- Perarivalan, who was 19 years old at the time of Rajiv Gandhi's killing in 1991, was accused of buying the two 9-volt batteries used in the bomb to assassinate the former prime minister.
- Perarivalan was sentenced to **death by a TADA court** in 1998. The Supreme Court upheld the sentence the next year but commuted it to life imprisonment in 2014.

About Article 142 of the Constitution

➢ Subsection 1 of Article 142 mentioned about **enforcement of decrees and orders of Supreme Court and orders as to discovery, etc.**

## Lok Adalat

**Context:** Supreme Court has ruled that **LokAdalats are not courts** as it does not resort to judicial adjudication in resolving disputes.

- **The Lok Adalat** is a forum where the cases (or disputes) which are pending in a court or which are at pre-litigation stage (not yet brought before a court) are c**ompromised or settled in an amicable manner.**



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- The Supreme Court has explained the meaning of the institution of Lok Adalat as: The 'Lok Adalat' is an **old form of adjudicating system** prevailed in ancient India and its validity has not been taken away even in the modern days too.
- The word 'Lok Adalat' means 'People's Court'. This system is **based on Gandhian principles**. It is **one of the components of ADR** (Alternative Dispute Resolution) system. As the Indian courts are overburdened with the backlog of cases and the regular courts are to decide the cases involving a lengthy, expensive and tedious procedure. The court takes years together to settle even petty cases.
- The Lok Adalat, provides alternative resolution or **devise for expeditious and inexpensive justice.** In Lok Adalat proceedings, there are no victors and vanquished and, thus, no rancour.
- The Lok Adalat is another alternative in judicial justice. This is a recent strategy for delivering **informal, cheap and expeditious justice** to the common man by way of settling disputes, which are pending in courts and also those, which have not yet reached courts by negotiation, conciliation and by adopting persuasive, common sense and human approach to the problems of the disputants, with the assistance of specially trained and experienced members of a team of conciliators.

## Legal Services Clinic

**Context**: Aiming to make **legitimate assistance more accessible to women**, the National Commission for Women (NCW) in collaboration with Delhi State Legal Services Authority (DSLSA) launched a legal aid clinic which will act as a single-window facility for resolving the grievances of women.

- "Legal services clinic" means the facility established by the National Legal Services Authority, State Legal Services Authority and the District Legal Services Authority **to provide basic legal services to the People with the assistance of para-legal-volunteers or lawyers, as the point of first contact for help and advic**e.
- A legal clinic (also law clinic or law school clinic) is a Legal Services Authority/law school program providing hands –on- legal experience to law school students and services to various clients. Clinics are usually directed by clinical professors. Legal Clinics typically do pro bono work in a particular area, providing free legal services to clients.
- **Lawyers/Law graduates/Law Students typically provide assistance** with research, drafting legal arguments and meeting with clients. Clinical legal studies exist in diverse areas such as immigration law, environmental law, Intellectual property, housing, Criminal defence, Criminal prosecution and the Civil and Revenue Indian law. Clinical education presents an interesting intersection between the academic and professional environments.

**What is the New NCW Legal Services Clinic all about**?

- Under the new legal aid clinic, **proper counselling will be given for walk-in complainants**, information and advice on numerous schemes of the National Legal Services Authority (NALSA)/ DSLSA, women in distress will be given legal assistance, assistance in Mahila Jansunwai, free legal aid, hearings in matrimonial cases and any other complaints which have been registered with the Commission will be provided among other services.
- NCW is also **preparing to set up similar legal services clinics in other State** Commissions for Women as well.

## Supreme Court clears FCRA changes

**Context**: Supreme Court upholds **constitutional validity** of Foreign Contribution (Regulation) Amendment Act, 2020, says it serves to safeguard India's 'sovereignty and integrity'.

• The Foreign Contribution (Regulation) Amendment Bill, 2020 was passed in both houses of Parliament in 2020. It **seeks to regulate the process** involving acceptance and utilisation of foreign contributions by individuals, associations and companies.

**Foreign Contribution Regulation Act (FCRA)**

➢ The FCRA was **enacted during the Emergency in 1976** in an atmosphere of apprehension that foreign powers were interfering in India's affairs by pumping in funds through independent organisations. These concerns had been expressed in Parliament as early as in 1969.

➢The law sought to **regulate foreign donations to individuals and associations** so that they functioned "in a manner consistent with the values of a sovereign democratic republic".

➢An amended FCRA was enacted in 2010 to "consolidate the law" on utilisation of foreign funds, and "to prohibit" their use for "any activities detrimental to national interest".



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➢The law was amended again in 2020, **giving the government tighter control and scrutiny over the receipt and utilisation of foreign funds by NGOs.**

➢ Broadly, the FCRA requires every person or NGO wishing to receive foreign donations to be registered under the Act, **to open a bank account for the receipt of the foreign funds in State Bank of India, Delhi** ("one-point entry" for foreign donations), and to utilise those funds only for the purpose for which they have been received and as stipulated in the Act.

➢They are required **to file annual returns**, and they must not transfer the funds to another NGO.

➢ The Act **prohibits receipt of foreign funds by** candidates for elections, **journalists** or newspaper and media broadcast companies, **judges** and government servants, members of legislature and **political parties** or their office-bearers, and organisations of a political nature.

How is FCRA registration granted?

✓ NGOs that want to receive foreign funds must apply online in a prescribed format with the required documentation. FCRA registrations are **granted to individuals or associations that have definite cultural, economic, educational, religious, and social programmes**.

✓Following the application, the MHA makes inquiries through the **Intelligence Bureau** into the antecedents of the applicant, and accordingly processes the application.

✓ Under the FCRA, the applicant should not be fictitious or benami; and should not have been prosecuted or convicted for indulging in activities aimed at conversion through inducement or force, either directly or indirectly, from one religious faith to another.

✓ The applicant should not have been prosecuted for or convicted of creating communal tension or disharmony; should not have been found guilty of diversion or misutilisation of funds; and should not be engaged or likely to be engaged in the propagation of sedition.

✓ The MHA is **required to approve or reject the application within 90 days**. In case of failure to process the application in the given time, the MHA is expected to inform the NGO of the reasons for the same.

**For how long is approval granted?**

Once granted, FCRA registration is **valid for five years**. NGOs are expected to apply for renewal within six months of the date of expiry of registration. In case of failure to apply for renewal, the registration is deemed to have expired, and the NGO is no longer entitled to receive foreign funds or utilise its existing funds without permission from the ministry.

## Olga Tellis Judgment

**Context**: North Delhi Municipal Corporation's recent use of **bulldozers' against roadside stalls**, and push carts in Delhi's Jahangirpuri was seen by a constitution Bench of the Supreme Court.

**What is the Olga Tellis judgment?**

- The judgment, **Olga Tellis vs Bombay Municipal Corporation, in 1985** by a five-judge Bench led by then Chief Justice of India Y.V. Chandrachud **agrees** that **pavement dwellers do occupy public spaces unauthorised**.
- However, the court maintained **they should be given a chance to be heard** and a reasonable opportunity to depart "before force is used to expel them."
- The Supreme Court reasoned that eviction **using unreasonable force, without giving them a chance to explain is unconstitutional**.
- Pavement dwellers, too, have a right to life and dignity. **The right to life included the right to livelihood.**

## Uniform Civil Code

**Context**: Government of Uttarakhand will go ahead with the implementation of Uniform Civil Code (UCC) and had urged other states to follow the same path.

- The idea of UCC germinated during the colonial era, in 1835 British government called for codification of Indian laws relating to crimes, evidence and contracts. They also emphasized on **keeping laws of Hindus and Muslims to be kept outside the purview of codification.**
- Later, British **formed BN Rau committee in 1941** to codify Hindu Law. This was later culminated into Hindu Succession Act, 1956 which would cover Hindus, Buddhists, Jains and Sikhs. Separate personal laws for Muslims, Christians and Parsi persisted.



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- The **UCC calls for formulation of one law to be made applicable to all religious** communities in civil matters such as marriage, divorce, inheritance and adoption.
- One of the reasons behind the government's ambivalence is the potential fallout of a move on **tribal communities**. In Assam, tribals have their own personal laws and the government wouldn't like to disturb the equation.
- The issue of UCC **has seen a renewed push in the Supreme Court** as well, especially after the top court indicated that the government should explore the UCC as a means to secure gender justice, equality and dignity of women.
- The court's view is **based on several petitions claiming** that personal laws governing the followers of certain faiths discriminate against women.

**Uniform Civil Code (UCC)**

➢**Article 44** of the Directive Principles in the Constitution says the "State shall endeavour to provide for its citizens a uniform civil code (UCC) throughout the territory of India."

➢The **objective** of this endeavour should be to address the discrimination against vulnerable groups and harmonise diverse cultural practices.

➢The stand taken by **B.R. Ambedkar** in the Constituent Assembly debates has survived the years. Rd. Ambedkar had said a **UCC is desirable but for the moment should remain voluntary.**

# Federalism

## Northeast Border Dispute

**Context**- Clashes b/w **police personnel** of **Assam and Mizoram** have spotlighted long-standing border disputes among states in India's northeast

**Why do Inter-State Border Disputes still continue?**

Assam is involved in all disputes because most of the north-eastern states were carved out of Assam.

• **Geographical Factors**
  - The **presence rivers, hills, and forests straddle** at various places between the two states makes marking of border difficult.
  - Original **maps** are available with government **date back to colonial times** in which several areas are just marked as "unexplored" or "thick forests".

• **Political Factors**
  - The reorganization of Indian states was done on the pretext of **administrative convenience** but it was done on the linguistic basis of the idea of one language one state.
  - However, this has **backfired as the linguistic diversity** of India is always greater than the land availability.

• **Tribal Issues**

The distribution of Indigenous communities was not kept in mind while demarcating boundaries. This becomes more visible in the case of North-East states.

• **Indigenous Communities:**
  - Indigenous communities were, for the most part, left alone. Boundaries would be drawn for administrative convenience when the "need" arose.
  - The 1956 demarcation did not resolve the discrepancies.
  - When new states were carved out of Assam (Nagaland in 1963, Mizoram, Meghalaya, Tripura, and Manipur in 1972, and Arunachal Pradesh in 1987), it was still not addressed.

**How can we resolve Inter-State Border Disputes?**

**Constitutional Mechanism**

1) **Article 263** of the Constitution provides for Inter-State Council. It was envisaged as a conflict resolution body that will inquire and advise on disputes, discuss the issues at play and then recommend solutions accordingly. The 2nd ARC also recommended creating more than one Inter-State Council, providing a more decentralized solution to the problem.



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2) **Statutory Provisions**
The system of Zonal Councils can also be used for deliberation and discussion.
It will allow for direct deliberation between states in conflict.

**3) Technical Provisions**
Satellite Mapping can be used to develop new maps based on which boundary questions can be resolved.

4) **Cooperative federalism** principles must be used to resolve conflicts. Unity in diversity is India's strength and leveraging it would help resolve such issues.

5) The **Sundaram Commission** recommended a border between Assam and Nagaland, but Nagaland rejected the report. In 1988, Assam filed a case in the Supreme Court. It did the same over its dispute with Arunachal Pradesh, in 1989. Both reports are still pending.

6) With this in mind, the **Setalvad Study Team** on Centre-State Relationships had in 1968 recommended an inter-state council

**Constitutional provisions over Indian Territories**

- **Article 2 states** "Parliament may by law admit into the Union, or establish, new States on such terms and conditions as it thinks fit."
- **Article 3** states Parliament may by law:
  1) Form a new State by separation of territory from any State or by uniting two or more States or parts of States or by uniting any territory to a part of any State
  2) Increase the area of any State o diminish the area of any State
  3) Alter the boundaries of any State or alter the name of any State

## Centre- State dispute

Context: Recently, the decision of Chhattisgarh government of transferring land from forest department to revenue department was flagged by Ministry of Environment, Forest and Climate Change for the want of the violation of due process. **Ministry is of the opinion that the transfer of land violates Forest Conservation Act, 1980** and multiple Supreme Court order.

**Forest in India**

- In India, Forest is **not defined** by a unified definition rather it varies from state to state.
- However, Supreme Court in ***T.N. Godavarman Thirumulkpad vs the Union of India (1996)*** held that the definition of forest must be taken according to its dictionary meaning; therefore it covered all statutorily recognized forests, irrespective of the status of the land it standson.

**Constitutional provisions for forest:**

- **Article48A**-Directive Principles of State Policy-It calls on the state to protect and improve the environment and also safeguard the forests and wildlife of the country.
- **Article 51A (g)**-Fundamental Duty-It is the fundamental duty of every citizen to protect and improve the natural environment including forests and Wildlife.
- **42nd Constitutional Amendment** had made Forests and Protection of Wild Animals and Birds as a **concurrent subject** under seventh schedule.
- States under Indian Forest Act 1927 were given **rights for Reserve Forest** (No activities allowed unless permitted otherwise) and Protected Forest (EVERY activity is permitted unless prohibited otherwise). Further village forest was given to revenue department of the state
- **Article131**
- Under the Constitution, laws made by Parliament are presumed to be constitutional until a court holds otherwise. However, due to India's quasi-federal structure, inter-governmental disputes are a common sight.
- The framers of the Constitution expected such differences, and added the exclusive original jurisdiction of the Supreme Court for the irresolution under **Article131.**



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- In ***State of Karnataka v Union of India, SC*** held that it's the responsibility of States to prove that the dispute involves a legal question and cannot be used to settle political differences between state and central governments.
- **Centre doesn't sue states under Article 131** as it has others power to do so, for instance, if states do not comply with the directions, the Centre can move the court seeking apermanent injunction against the states to force the mtocomply with the law.

**Forest Clearance Procedure in India**

- **Forest Conservation Act, 1980** requires statutory clearance irrespective of the department which holds the forest area, if they wish to use forest area for non-forest purpose such as industry, construction and mining etc.
- **Clearance for non-forest use of forestland** under the FC Act requires giving back twice the area for compensatory afforestation (CA) from Revenue to Forest.
- **Environment Clearance**: It involves procedure of Environment impact assessment which is mandatory for projects beyond a certain size. In, some cases it even involves public hearings involving local population.

## Centre-State power struggle over India's waters

**Context:** In recent times several issues like electricity, water resources, law and order, judiciary, and finance have emerged as new fault lines between the Centre and States.

**Water in the Constitution of India**

- The **right to clean drinking water** has been read into the right to life under **Article 21** of the constitution.
- **Article 246 grants** the **Centre the exclusive power** to make laws on the following subjects under **List I** of the Seventh Schedule:
  - Decide on shipping and navigation on inland and tidal (sea) waterways and national waterways for vessels
  - Regulate training and education of mercantile marines by states and other agencies
  - Decide on goods, and passengers by sea or national waterways via mechanically propelled vessels
  - Regulate and develop interstate rivers and river valleys
  - Decide on fishing and fisheries beyond territorial waters

Similarly, **List II of the seventh schedule empowers states** to develop roads, bridges, ferries, municipal tramways, ropeways, and other means of communication on inland waterways in the State

  - **Decide on water supply, irrigation and canals, drainage and embankments, water storage, and water power**
  - Taxes on goods and passengers carried by road or on inland waterways
  - Decide on shipping and navigation on **inland** waterways via mechanically propelled vessels and carriage of passengers and goods on such waters

**JalJeevan Mission (JJM)**

- It aims to provide a **Functional Household Tap Connection** (FHTC) to every rural household by 2024, in collaboration with States and Union Territories (UTs).
- The scheme also aims to develop bulk water transfer facilities, treatment plants and a robust in-village water distribution network.
- Since the **launch of the scheme in 2019,** 7,00,05,724 (44%) households have received new tap connections.
- Goa, Telangana, Haryana and UTs like Andaman & Nicobar Islands, Puducherry, Dadra & Nagar Haveli and Daman & Diu have achieved **100% tap water connections.**

- The **overlap in the powers** of the Centre and State in several areas is also an **area of conflict** between States.

**Inter-State Water Dispute**

Inter-State Water disputes are **governed by the Inter-State River Water Dispute Act, 1956**.

**The mechanism under the Act**

- State Government **makes a request** to the Central government for any water dispute.
- If the Central government is of opinion that the dispute cannot be resolved through negotiations then it **constitutes** a Water Dispute Tribunal for the adjudication of the Water Dispute.
- In 2002, the act was amended which provided major time frames along the lines of recommendations made by the Sarkaria commission. The constitution of the tribunal had to be done in a one-year time frame and Tribunal had to give its verdict in 3 years.



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**Active River Water Dispute Tribunals in India**

- **Krishna** Water Disputes Tribunal II (2004) – Karnataka, Telangana, Andhra Pradesh, Maharashtra
- **Mahanadi** Water Disputes Tribunal (2018) – Odisha & Chhattisgarh
- **Mahadayi** Water Disputes Tribunal (2010) – Goa, Karnataka, Maharashtra
- **Ravi & Beas** Water Tribunal (1986) – Punjab, Haryana, Rajasthan
- **Vansadhara** Water Disputes Tribunal (2010) – Andhra Pradesh &Odisha.

**Key Highlights of the Inter-State River Water Disputes (Amendment) Bill.**

- It envisages a **standalone tribunal** that would be permanent, so there would be no need to create a tribunal on a case-by-case basis.
- It envisages a **Dispute Resolution Committee (DRC)** by the Central Government for resolving amicably. DRC would resolve the inter-State water disputes within a maximum period of one year and six months. If DRC fails, then matters will be referred to the Tribunal for its adjudication.
- It **removes the publication of the final decision** of the tribunal in the official gazette.
- It allows for a **transparent data collection** system at the national level for each river basin and a single agency to maintain a data bank and information system.
- It decides the bench of the **tribunal will be final and binding** on the parties involved in the dispute.

**National Mission for Clean Ganga (NMCG)**

- The river Ganga originating from the Himalayan mountainrange **flows through Uttarakhand, Uttar Pradesh, Bihar, and West Bengal.**
- NMCG was **formed Under the Environment (Protection) Amendment Act (EPA) ,2016.**
- The NMCG was given a **two-tier management** structure Governing Council and Executive Committee (at National, State and district levels).
- NamamiGange is the project under NMCG (managed by the **Jal Shakti Ministry**) that was started in 2014.
- **Aimed** at rejuvenating Ganga, it comprises of developing sewerage treatment infrastructure, river-front development, river-surface cleaning, afforestation, industrial effluent monitoring, enhancing the river's bio-diversity, developing Ganga Gram (villages on Ganga banks) and raise public awareness.

## State Legislature and Lotteries

**Context**: Supreme Court held that a **State legislature has the right to impose tax on lotteries** conducted by other states within its jurisdiction.

- **Betting** is the act of placing a wager. Whether that's laying chips on the table, putting a certain amount on a certain outcome with a bookmaker, or buying stock in a company that one think will become more valuable, the act of committing money to be held pending an outcome (where if it happens, one gets paid, and if it doesn't, one loses bet) is betting. If one is putting up money to possibly earn more with it based on the outcome of a future event, one is betting.
- **Gambling** is the act of betting, but on an uncertain outcome. Good examples include buying a lottery ticket (one doesn't know what numbers will come up), choosing red/black on roulette (one doesn't know where the ball will land), or selecting a winning horse (one doesn't know who is going to cross the finish line first).
- **Betting and Gambling is part of the State List** in the Seventh Schedule of the Constitution. In other words, this simply means that the state government can exercise full control over betting and gambling practices in their state. They can also formulate their state-specific laws. A good example of this is the choice given to most states for the adoption of the Public Gambling Act, 1976.
- **SC Judgment**: The power to tax is on all activities which are in the nature of betting and gambling including lotteries; State legislatures have the power to tax lotteries under Entry 62 of the State List.

**What is the legal position of gambling in India?**

- **Horse racing and lotteries are legal** in India. Horse racing involves some prior skills so it isn't all about gambling.
- **Online gambling and land-based casinos** are legalized in Goa, Sikkim, Nagaland, and Daman under the Public Gambling Act, 1976.
- All India Gaming Federation, The Rummy Federation, and Federation of Indian Fantasy Sports have adopted a self-regulation code for all their advertisements.



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## Reconstitution of Inter-State Council (ISC)

**Context**: The Centre has reconstituted the Inter-State Council, which works to promote cooperative federalism.

**Inter-State Councils**

1. **Article 263** contemplates the establishment of an ISC to effect coordination between the states and between Centre and states.
2. **President** can establish such a council **if at any time it appears to him that the public interest would be served** by its establishment.
3. **President can define the nature** of duties to be performed by such a council and its organisation and procedure.
4. Even though the president is empowered to define the duties of an ISC, Article 263 specifies the duties that can be assigned to it in the following manner:

✓ Enquiring into and advising upon disputes which may arise between states;
✓ Investigating and discussing subjects in which the states or the Centre and the states have a common interest; and
✓ Making recommendations upon any such subject, and particularly for the better coordination of policy and action on it.

**Composition of the newly constituted ISC**

- **Headed by the PM**, the Council will comprise **six Union ministers**, besides the **Chief Ministers of the 28 states and UTs** with a legislature, and **administrators of UTs** without a legislature. It will also have **10 Union ministers as permanent invitees**.
- Mandated with creating a strong institutional framework to promote and support cooperative federalism, the Council helps the Centre and states iron out differences on policy and governance.

**Standing Committee of the ISC**

✓ The government has also reconstituted the **standing committee** of the Council, **with Home Minister as its chairman.**
✓ **Members** include few Union ministers & Chief Ministers
✓ The standing committee will have continuous consultation and process matters for consideration of the council, process all matters pertaining to centre-state relations before they are taken up for consideration in the inter-state council.
✓ The standing committee also monitors the implementation of the decisions taken on the recommendations of the council and consider any other matter referred to it by the chairman or the council.
✓ The standing committee may, if necessary, **invite experts and persons eminent** in specific fields to have the benefit of their views while deliberating upon the related subjects.

**The mandate of the Inter-State Council**

- A **recommendatory body** on issues relating to Inter-state, Center-States, and Center-Union Territory relations.
- It **aims** at promoting coordination between them by examining, discussing and deliberating on such issues. Its duties, in detail, are as follows:
- Investigating and discussing such subjects in which the states or the centre have a common interest;
- Making recommendations upon any such subject for the better coordination of policy and action on it; and
- Deliberating upon such other matters of general interest to the states as may be referred to it by the chairman.
- The Council **may meet at least thrice in a year**. Its meetings are held in **camera** and all questions are decided by **consensus**.

**Analytica**

- The **council's function to enquire and advice upon inter-state disputes is complementary to the Supreme Court's jurisdiction under Article 131** to decide a legal controversy between the governments.
- The Council can deal with any controversy whether legal or non-legal, but its function is advisory unlike that of the court which gives a binding decision. Under the above provisions of Article 263, the **president has established the following councils to make recommendations for the better coordination of policy and action in the related subjects:**

✓ Central Council of Health and Family Welfare.
✓ Central Council of Local Government



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- ✓ Four Regional Councils for Sales Tax for the Northern, Eastern, Western and Southern Zones.

## Inter-State police arrest

**Context:** A political leader was arrested by the Punjab police from his home in Delhi, stopped in Haryana while being taken to Punjab and brought back to the national capital by Delhi Police.

- ✓ **Inter-state police arrest means** when the police of one state arrest the accused or culprit in some other state, though this type of investigation or arrest is constitutionally invalid.
- ✓ The police force can only arrest or investigate an accused who lies within the boundaries of their state. For e.g. - If someone commits a crime in Delhi and is vested in Delhi then only.
- ✓ Delhi police have the authority to arrest that criminal and not the police of some other state.
- ✓ In order **to arrest an accused of some other state**, the police force of a **state must communicate with the police force of that particular state** where the accused is and that has the authority to take immediate actions.

**Constitutional and Legal Provisions**

- ✓ The powers of the police to arrest an accused in another state have not been defined clearly as far as arresting without a warrant is concerned. Section 48 of the Code of Criminal Procedure (CrPC) gives the police such powers, but the **procedure is not defined.**
- ✓ **Article 22(2)** of the Constitution of India stated that "Every person who is arrested and detained in custody shall be produced before the nearest magistrate **within a period of 24 hours of such arrest** excluding the time necessary for the journey from the place of arrest to the court of the magistrate, and no such person shall be detained in custody beyond the said period without the authority of a magistrate."

**Judicial Observations on Inter-State Arrests**

In '**Sandeep Kumar vs The State** (Govt. Of NCT of Delhi)' 2019, the Delhi High Court issued certain guidelines for inter-state arrests:-

- ✓ A police officer **must seek permission from his superior**, in writing or on the phone, to visit another state to arrest a criminal.
- ✓ Police personnel must record reasons for a such a move in writing, and first make an endeavour to get an arrest warrant from a court except in "emergent cases".
- ✓ Before visiting the other State, the Police Officer must endeavour to **establish contact with the local Police Station** in whose jurisdiction he is to conduct the investigation.

## Delimitation Exercise in Jammu & Kashmir

**Context:**

A commission set up by the Centre submitted its **final report** for the delimitation of Assembly and parliamentary constituencies in Jammu and Kashmir.

- ✓ Delimitation was carried out in accordance with the Jammu and **Kashmir Reorganisation Act, 2019.** This exercise **led to increase the number of seats in the Assembly.**
- ✓ As per the final Delimitation Order, the following will come into effect from the date to be notified by the Central Government:-
- ✓ **Out of the 90 Assembly Constituencies** in the region, **43 will be part of Jammu** region and **47 for Kashmir region**
- ✓ The Delimitation Commission was set up in 2020 under the chairmanship of retired Supreme Court Justice **Ranjana Prakash Desai**, it has the **Chief Election Commissioner** and J&K's **Chief Electoral Officer** as members, and J&K's **five MPs** as associate members.



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## Audit of local-self government

**Context**: the comptroller and auditor general has proposed to expand its presence up to the district level to exercise audit control over three-tier Panchayati raj institutions that are at present not audited by any government audit.

- A **large part of government expenditure directly goes to local bodies** for implementation of several central and state level schemes.
- CAG has propose to open its **offices in each district** and "exercise control and supervision" over the proper maintenance of accounts and audit of PRIs.
- Government departments draw funds from the consolidated fund, **PRIs draw money from separate fund accounts kept in bank** or treasury
- The PRIs which also mobilize revenue through rents, rates, taxes, fines, fees etc. are beyond the scrutiny of any central or state audit system.
- At present the CAG has presence in state capitals and its accountant general's office is responsible for auditing accounts of state government

**Comptroller and Auditor-General of India (CAG)**

- Constitution of India (**Article148)** provides for an independent office of the Comptroller and Auditor General of India (CAG). He is the head of the Indian Audit and Accounts Department.
- Dr. B.R. Ambedkar said that the CAG shall be the **most important Officer** under the Constitution of India
- CAG is **appointed by the President** by warrant under his hand and sea.
- **Removal** from office in like manner and on like grounds as a Judge of the Supreme Court.
- In order of precedence, the CAG is ranked 9th and enjoys the same status as a sitting judge of Supreme Court of India.

**Constitutional Provisions for Audit**

- ✓ **Article 243 J:** The Legislature of a State may, by law, make provisions with respect to the maintenance of **accounts by the Panchayats and the auditing** of such accounts.
- ✓ **Article 243 Z:** The Legislature of a State may, by law, make provisions with respect to the maintenance of **accounts by the Municipalities and the auditing** of such accounts.

## Federalism: Unique status of Delhi

Context: overlapping of functions between Centre & UTs affecting routine administrative work in UTs. (With reference to Delhi)

- The complex power structure of Delhi, on account of its status as a national capital where jurisdiction over different subjects is split between the central and the Delhi government, is executed through the provisions of Article 239AA, the GNCTD Act 1991 and TBR 1993.
- The SC had, in its 2018 verdict, stated that the Delhi L-G is bound to act on the "aid and advice" of the city-state's council of ministers in all matters that fall under the state legislature's jurisdiction – the excepted issues being **land, public order and police**, all of which are under central jurisdiction.

**The 69th CAA of 1991**

- ✓ Special status given to National Capital of Delhi with its own democratically elected government & legislative assembly.
- ✓ Insertion of new Articles **239AA and 239AB** after Article 239A of the Constitution.

**Government of National Capital Territory of Delhi (Amendment) Act (GNCTD) 2021**

Following are broad changes have now been made to the GNCTD Act:

- ✓ The expression Government referred to in any law to be made by the Legislative Assembly shall henceforth mean the Lieutenant Governor.
- ✓ Conduct of business in the Delhi Legislative Assembly will have to be consistent with Rules of Procedure and Conduct of Business in the Lok Sabha.

**NOTE-**

- **No law or constitutional provision** that dictates uniformity in conduct rules of different legislatures, and certainly, none that says an assembly's rules must be the same as those of the Lok Sabha.
- Conduct rules of the RajyaSabha and the Lok Sabha aren't the same, despite both being Houses of Parliament.



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- ✓ Before taking any Executive action in pursuance of the decision of the Council of Ministers or a Minister, to exercise powers of Government, the opinion of the L-G shall be obtained on all such matters by a general or special order by the L-G.

# Elections

## Party symbol & ECI

**Context**: Political split among the political parties is becoming a common phenomenon. Recently, a political party approached the Election Commission of India to stake a claim over the party symbol.

**Elections Symbol**

**Terms to remember**
Article 324-329, Model code of conduct Election Symbols (Reservation and Allotment) Order, and 1968.

• An election symbol is a **standardized identification** associated with the candidate which helps voters to identify which political party candidate belongs or does not belong,

• The idea behind these symbols is to **facilitate voters in voting** even if they are illiterate. Symbols play crucial role in early decades after Independence as Indian literacy rate were low.

•The **regulation, reservation and allotment** of electoral symbols is e**ntrusted with Election commission of India** and done in accordance with **Election Symbols (Reservation and Allotment) Order, 1968.**

• Rules classify Election symbols as

a) **Reserved**: Symbol reserved for a recognised political party for exclusive allotment to contesting candidates set up by that party.

b) **Free**: Symbol other than a reserved symbol.

- Election Symbols (Reservation and Allotment) Order, 1968, Under Paragraph 15 empowers ECI to decide disputes among rival groups or sections of political party who stake claim over party name and symbol.
- Supreme Court in Sadiq Ali and others vs. ECI (1971) also **upheld** Election Commission as the **only body to decide in such disputes**.

The **decision of ECI is based on support** enjoyed by a claimant within a political party in

a) **Organizational wing**- Examines party constitution and its list of office-bearers at the time when it was united. Then it classifies them into rival factions and look out their numerical strength.

b) **Legislative wing**-It classify Member of Parliament and Member of Legislative Assemblies into the factions which they support by providing an affidavit.

- ECI may then rule to give party name and symbol to the faction which has majority in both the wings.
- It may also allow the losing faction to register as separate political party.

In case where there is **no certainty** i.e., no clear majority visible of any rival faction ECI:

i) Can freeze party symbol and allow groups to register as new party with a new name.

ii) It may also allow adding prefixes or suffixes to the party's existing names.

- If **claimants reunite in future**, then may approach the EC again and seek to be recognised as a unified party. ECI may restore the symbol and name of the original party.
- In case when large party breaks into various factions and register themselves as new political parties then they cannot lay claim to national or state party status of their parent party. They will have to follow the procedure for status anew.

## Election of President and Vice President

**Context:** Recently new President and Vice President of India were elected.

**Terms to remember**
President, Vice-President, Voting, Types of electoral system

Manner of the Election of the **President** of India is borrowed from the **Irish** Constitution and the office of vice-president comes from USA.



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**Article 324** and the **Presidential and Vice-Presidential Elections Act, 1952** along with the Presidential and Vice-Presidential Elections **rules**, 1974 vest the superintendence, direction and control of elections to the Election commission of India.

Elections to Office of the President and the Vice President are done using the **instrument of Single-Transferrable Vote**. In this voter do not caste single vote but instead rank candidates in order of preference. This allows voters to vote across party lines and select the most preferred candidate. Further, it **doesn't cause wastage of voter's vote**.

## Office of President

**Eligibility**

- According to Article 58- A person is eligible for election as president if
  - Citizen of India
  - Completed age of 35
  - Qualified for election as a member of house of people (Lok Sabha)
  - Does not hold any office of profit under the Government of India or the Government of any State or any local authority or any other public authority

**Electoral College**

- According to Article 54- The President shall be elected by the members of an electoral college consisting of
  - Elected Members of Lok Sabha
  - Elected Members of Rajya Sabha
  - Elected members of State Assemblies
  - Elected members of Union Territory (UT) of Delhi and Pondicherry.
  - Here one should keep in mind that UT of Delhi and Pondicherry have a legislative assemblies therefore they are part of electoral college. In future when legislative assembly of UT of Jammu & Kashmir becomes functional then it will also become part of Electoral college, just like Delhi and Pondicherry.

**Procedure**

- According to Article 55 of the constitution there shall be uniformity, as far as practicable, in the scale of representation of the different States at the election
- Elections are conducted by using the tool of Proportional representation system. According to Article 55 it is done by means of the Single transferable vote using the secret ballot.
- Value of each vote is counted as
  - For MLA's value is determined by dividing the population of the State by the number of MLAs in its legislative Assembly, and the quotient achieved is further divided by 1000.
  - For MPs of the Rajya Sabha and the Lok Sabha it is fixed as 708. However since legislative assembly of the UT of Jammu and Kashmir is suspended. This year value came down to 700.

## Office of Vice- President

**Eligibility**

- According to Article 66- No Person Shall be eligible for election as vice president unless he:
  - is a citizen of India.
  - has completed 35 years of age.
  - Is qualified for election as a member of the Council of States (Rajya Sabha).
  - Should not hold any office of profit under the Union government or any state government or any local authority or any other public authority

**Electoral College**

- According to Article 66 Vice-President is elected by the members of the Electoral College consists of:
- Elected members of Rajya Sabha.
- Nominated members of Rajya Sabha.
- Elected members of Lok Sabha (Earlier nominated members were also allowed to take part in election however, 104th Constitutional Amendment Act, 2019 ended the Anglo-Indian reserved seats in parliament making Lok Sabha as purely elected body.)
- Member of Legislative assemblies do no take part in the election.

**Procedure**

- According to Article 66- Elections are conducted by using the tool of Proportional representation system. It is done by means of the Single transferable vote using the secret ballot.
- Since all the electors are members of both Houses of Parliament, the value of the vote of each Member of Parliament would be the same i.e.1



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## Aadhaar –voter ID linkage

**Context:** Election commission of India in accordance with Election Laws (Amendment) Act, 2021 had **started a drive to link voter-ids with Aadhaar**. The idea is to develop a fool proof electoral roll without any duplication or bogus voters. This move however raised several concerns as people fear that if they didn't link their voter-id with Aadhaar they might not be able to vote.

**Terms to remember:**
GDPR, Election Commission of India, SVEEP, VVPAT, BAPU, AEPS, JAM-Trinity

- It will help in **establish the identity of electors** and authentication of entries in electoral roll and weed out duplication.
- It was launched **in 2009 as a 12-digit**uniqueidentification number as proof of residence. It draws its legal status from Targeted Delivery of Financial and other Subsidies, benefits and services Act, 2016.
- It captured biometric and demographic data, which is to be collected by Unique Identification Authority of India (UIDAI) which is **a statutory body** under **Ministry** of **Electronics and Information Technology**.
- Data of Aadhar is stored in the **Central Identities Data Repository** of UIDAI.
- NRI are also eligible for Aadhar, they had to provide Passport as Identity document.
- In 2017, SC in Justice **K. S. Puttaswamy (Retd.) and Anr. Vs Union of India** and Ors case prescribed "**necessary and proportionate**" test to make Aadhaar compulsory for any service.

**NOTE**: The Minister of Law and Justice, in a written reply to a question in the Lok Sabha, informed that the Election Laws (Amendment) Act, 2021, allows Electoral Registration Officers to require the existing or prospective elector to provide the Aadhaar number for the Purpose of establishing identity on a **voluntary basis.**

## Appointment of ECI members

**Context**: The SC has now given the Opposition and the judiciary a say in the matter, ruling that the **CEC and ECs must** be appointed by the President on the advice of a **committee** comprising the **PM**, **Leader of Opposition in Lok Sabha**, and the **Chief Justice of India**.

- The Bench headed by Justice K M Joseph ruled on a batch of petitions seeking a selection process similar to what is followed in the case of the Director, Central Bureau of Investigation (CBI).
- As of now, the central government essentially has a free hand in appointing these officials.

**How are the CEC and ECs currently appointed?**

- There are just five Articles (324-329) in **Part XV (Elections**) of the Constitution. Article 324 of the Constitution vests the "superintendence, direction and control of elections" in an Election Commission consisting "of the Chief Election Commissioner and such number of other Election Commissioners, if any, as the President may from time to time fix".
- The **Constitution does not lay down a specific legislative process** for the **appointment** of the CEC and ECs. The President makes the appointment on the advice of the Union Council of Ministers headed by the Prime Minister.
- Parliament enacted The Representation of the People Act, 1950, and The Representation of the People Act, 1951, to define and enlarge the powers of the Commission.
- The Election Commission (Conditions of Service of Election Commissioners and Transaction of Business) Act, 1991 (EC Act) requires that the EC and CEC must hold the post for a period of six years. This law essentially governs the conditions of service of the CEC and ECs.
- **Until 1989**, the Election **Commission was a single-member body**, with only a Chief Election Commissioner (CEC).

## Electoral bonds

**Context**:

The Supreme Court is hearing case- petitions **challenging the validity of the contentious electoral bond scheme** to a Constitution bench after the petitioners said the matter regarding

**Terms to remember**
Money bill, Shell Companies, FCRA Amendments, Representation of People Act 1951



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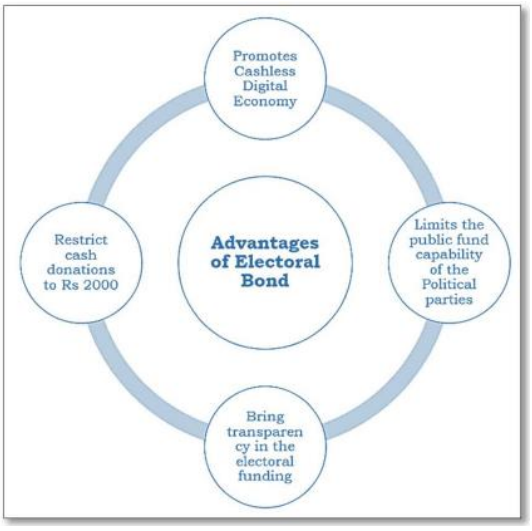
funding of political parties strikes at the root of democratic functioning in the country.

**About Electoral Bonds**

- The scheme was **introduced in 2017,** under which bonds in **multiples of Rs 1000, Rs 10000, Rs 1 Lakh, Rs 10 lakh, and Rs 1 crore** are issued without any maximum limit.
- Only the **State Bank of India's (SBI)** dedicated branch is authorized to issue and in cash such bonds. They are valid for fifteen days from the date of issuance. They are only **redeemable in the designated account** of a registered political party.
- Any **citizen** can purchase these bonds either singly or jointly with other individuals. The **name of the donor is not required, for a bond value less than Rs 20000** even PAN details are not required.
- Bonds are **available for ten days each in January, April, July, and October** as may be specified by the Central Government. Another 30 days window in case of Lok Sabha elections can be designated by the Central government.
- Every political party which is registered under section 29A of the Representation of the Peoples Act, 1951 (43 of 1951) and has secured at least one percent of the votes polled in the most recent Lok Sabha or State election is **eligible for donation through EBs.**
- According to SBI data, since the introduction of the scheme in 2018, political parties have received around **Rs 10,246 crore, till July 2022**.
- Other than EBs, Political Parties can also receive cash donations of less than 2,000 from anonymous sources through cheque or digital mode.




## National Party status & Recognised & unrecognized)

**Context**: 1) Election Commission had been writing to the government to grant it power under the Representation of the People Act **to de-register a political party on certain grounds**.

**Terms to remember**
National Party, regional party, multi-party democracy

- Political parties are **essential institutions of democracy**. By competing in elections parties offer citizens a choice in governance, and while in opposition they can hold governments accountable.
- India is **a multi-party democracy** and Election Commission facilitates and regulates registration of political parties under section 29A of the Representation of the People Act, 1951.
- **Consequent upon registration**, a political party gets **several entitlements**, inter-alia; party can **collect donations**, which is fully **exempted from income** tax. In elections, they are entitled for **privileges of common symbol**, preference over independents on ballot, star campaigners etc.
- In the last two decades, the growth in registration of parties has been 300%. Evidence suggests that there is a spurt in registration before general election of Lok Sabha/Vidhan Sabha.
- **Registered Unrecognised Political Parties** (RUPPs) are the recently registered political groups or those political organisations which have not secured enough percentage of votes in the assembly or general elections to become a state party, or those groups which **have not contested any election from the date of its registration** as unrecognised parties.
- The Registered Unrecognised Political Parties (RUPPs) **don't enjoy all the benefits** extended to the recognised parties.

2) **Updated list of national party**

**TMC, NCP and the CPI** were stripped of 'national party' status by the Election Commission recently, Meanwhile, the **AAP**, which was recognised as a national party, will now be entitled to several benefits.

**Conditions for to be recognised as 'national' party -**

- The particular party should hold the **'regional party' status**, in at least **four** states



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- It should have won at least **3 per cent of seats in the Lok Sabha from the four states**
- It should have secured **at least 6 percent of votes in the Lok Sabha** or the **Vidhan Sabha elections**

**Once a political party is recognised as a national party -**

- It can contest elections **anywhere** in the country
- The party can field candidates in any state
- The party is allotted one election symbol valid across the entire country, no other party can use it
- A proposer can remain present with the candidate at the time of filing of nomination
- The party will get two sets of voter list revisions by the Election Commission
- Party candidates also gain **access** to the voter list
- The party could open a central office in Delhi, on land provided by the government
- The party can field **40 star campaigners**
- Expenditure on the star campaigners will not be included in the election expenditure of the party candidate
- The party gets **time to convey its message to the masses through All India Radio and Doordarshan**

**National Parties**

- **Aam Aadmi Party**
- Bahujan Samaj Party
- Bharatiya Janata Party
- Communist Party of India (Marxist)
- Indian National Congress
- National People's Party (NPP)

## MLA/MP Suspension

**Context**: The Supreme Court has observed that the **suspension of 12 MLAs from the Maharashtra Assembly** for a full year is prima facie unconstitutional, and "worse than expulsion".

- The state legislature occupies a **preeminent and central position in the political** system of a state. **Articles 168 to 212 in Part VI** of the Constitution deal with the organisation, composition, duration, officers, procedures, privileges, powers and so on of the state legislature. Though these are similar to that of Parliament, there are some differences as well.

**Rules for the Suspension**

- Rules 373, 374, and 374A of the Rules of Procedure and Conduct of Business in Lok Sabha **provide for the withdrawal of a member whose conduct is "grossly disorderly",** and suspension of one who abuses the rules of the House or will fully obstructs its business.
- The **maximum suspension** as per these Rules is "for **five consecutive sittings or the remainder of the session, whichever is less**".
- The maximum suspension for **Rajya Sabha** under Rules 255 and 256 also **does not exceed the remainder of the session**. Several recent suspensions of members have not continued beyond the session.
- Similar rules are in place for state legislative assemblies and councils which prescribe a maximum suspension not exceeding the remainder of the session.

**The Counter Arguments**

- Article 212 (1) states that "The validity of any proceedings in the Legislature of a State **shall not be called in question on the ground of any alleged irregularity of procedure**".
- The next subsection says "no officer or member of the Legislature, in whom powers are vested by or under this Constitution for regulating procedure or the conduct of business, or for maintaining order, in the Legislature shall be subject to the jurisdiction of any court in respect of the exercise by him of those powers."
- The state has referred to **Article 194** on the powers and privileges of the House, and argued that any **member who transgresses these privileges can be suspended through the inherent powers of the House.**
- It has denied that the power to suspend a member can be exercised only through Rule 53 of the Assembly.

**Suspension beyond the remainder of the session**

- Article 190 (4) of the Constitution, which says, "**If for a period of sixty days a member of a House of the Legislature of a State is without permission** of the House absent from all meetings thereof, the House **may**



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**declare his seat vacant**."

- Under Section 151 (A) of The Representation of the People Act, 1951, "a **bye-election** for filling any vacancy... [in the House] shall be held within a period of six months from the date of the occurrence of the vacancy".
- This means that barring exceptions specified under this section, **no constituency can remain without a representative for more than six months**. Anything in excess of that would be irrational

## Disqualification of MP/MLA

**Context**: Wayanad MP **Rahul Gandhi has lost his Lok Sabha seat** after being convicted of criminal defamation by a Surat court.

- **Section 8(3) of the Representation of the People Act, 1951** states that "a person convicted of any offence and sentenced to **imprisonment for not less than two years** shall be **disqualified from the date of such conviction** and shall continue to be disqualified for a further **period of six years since his release**
- Thus, the disqualification is triggered by the conviction itself, and not by the Lok-Sabha notification.
- The Supreme Court in its ruling in **Lok Prahari v Union of India (2018)** clarified that a disqualification **triggered by a conviction will be reversed if the conviction is stayed by a court**.

**Article 102** of the Constitution deals with **grounds for disqualification** of a parliamentarian.

- Sub-clause (e) of Article 102(1) says an MP will lose his membership of the House "if he is so disqualified by or under any law made by Parliament". The law in this case is the RP Act.
- Section 8 of the RP Act deals with disqualification of a lawmaker for conviction in certain offences. The provision is aimed at "preventing criminalisation of politics and keeping 'tainted' lawmakers from contesting elections.

## ONE candidate one constituency

**Context**: The Supreme Court refused to set aside a provision in the election law which allows candidates to contest polls from two constituencies simultaneously.

- Reason for rejection: 'a policy matter and an issue concerning political democracy. It is for the Parliament to take a call' – CJI
- A candidate can **contest from two seats under Section 33 (7**) of the RP's Act.
- There have been cases where a person contests election from two constituencies, and **wins from both**. In such a situation **he vacates the seat in one of the two constituencies**. The consequence is that a **by-election** would be required from one constituency involving avoidable expenditure on the conduct of that bye-election.
- Therefore, the **Election Commission** had, in an affidavit in 2018, **supported** the petition. It had informed the Supreme Court that it had proposed an amendment to Section 33(7) in **July 2004.**
- The poll body had even **suggested** that a candidate should deposit an amount of 5 lakh for contesting in two constituencies in an Assembly election or 10 lakh in a general election. The amount would be used to cover the expenses for a by-election in the eventuality that he or she was victorious in both constituencies and had to relinquish one.

## Remote voting for migrant workers:

**Context:** Recently the Election Commission showcased the remote electronic voting machine prototype for migrant voters, to representatives of political parties.

- However, it met with strong objections from opposition parties who questioned the need to deploy such a system, according to party leaders who attended it.
  - ECI said it has developed a **prototype of a multi-constituency remote electronic voting machine for domestic migrants**, a potentially landmark development that can boost voter participation and eliminate problems of travelling to home districts during polls for voting.
  - **Currently**, a voter has to physically travel to the district where they are a registered voter in order to cast their vote, but if the new initiative is implemented, migrant voters will not be required to travel to their home district to exercise their franchise and will be able to use a remote electronic voting machine (EVM) instead.
  - There was only **67.4 per cent of voter turnout in the general elections in 2019** and over 30 crore electors did



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not exercise their voting rights, the EC noted, and one of the main reasons was that a significant chunk of the migrant population failed to vote. The commission has also stated there was differential voter turnout in various states and union territories.

- The **Representation of the People Act, The Conduct of Election Rules and The Registration of Electors Rules** will need to be **amended to introduce** remote voting

# Legislative functions

## First Amendment

**Context**

The Supreme Court has agreed to examine a PIL challenging changes made to the right to freedom of speech and expression by the first amendment to the Constitution in 1951.

**About the First Amendment**

• The First Amendment was passed by the Provisional Parliament, members of which had just finished drafting the Constitution as part of the Constitutional Assembly, in 1951.

- Thus, Articles 15, 19, 85, 87, 174, 176, 341, 342, 372, and 376 were amended.

• It provided for the preservation of laws governing the acquisition of estates, etc.

• The Ninth Schedule was added to protect land reforms and other laws from judicial review.

• Articles 31A and 31B were added after Article 31.

• Changes such as exempting land reforms from scrutiny to providing protections for backward classes were introduced.

• Restrictions on the right to free speech increased.

## Ninth Schedule

**Context**

Recently, the Government of Jharkhand passed two bills in the assembly but asserted that they would come into force only after the Centre carries out amendments to include these in the Ninth Schedule of the Constitution.

**About Ninth Schedule**

• The Ninth Schedule contains a list of central and state laws which cannot be challenged in court. The Schedule became a part of the Constitution in 1951 through the first amendment.

• Through the First Amendment, Article 31A (extends protection to 'classes' of laws) and Article 31B (shields specific laws or enactments- giving birth to Schedule IX) were also added.

• Article 31B has a retrospective operation. If an act is held unconstitutional and thereafter is put under the 9th schedule it will be considered as its part since its commencement. SC had termed it as a drastic and novel method of an amendment

• The first Amendment added 13 laws to the Schedule. Currently, there are 284 such laws are shielded from judicial review.

• Most of the laws protected under the Schedule concern agriculture/land issues, the list includes other subjects, such as reservation.

**Understanding Judicial Review**

➢ Judicial Review act as a cornerstone for the principle of constitutionalism as it upholds the principle of the rule of law and the doctrine of separation of powers.

➢ On a broader scale there are mainly three aspects of judicial review, they are

- o Judicial review of administrative actions
- o Reviewing Judicial pronouncements, and
- o Review of the action of the legislature.

➢ The nature of the judicial review is procedural Indian Judicial review has its root directly in several Articles of the Indian Constitution e.g. Articles 13, 32, 131 to 136, 143, 226, and 227.

➢ Judicial review is responsible for balancing the interests and powers of different organs of the government and in assisting in the maintenance of control by marking a boundary to limit uneven encroachment of the authorities towards a person's constitutional rights and among themselves.



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## Foreign Contribution Regulation Act (FCRA)

**Context**

Recently, Foreign Contribution (Regulation) Amendment Rules, 2022 notified by the Central Government to reduce compliance burden on citizens.

**About FCRA Rule, 2022**

- Any person receiving Foreign Contribution (FC) more than Rs. 10 Lakh in a financial year from relatives [as defined in section 2(1) (r) of the Foreign Contribution (Regulation) Act, 2010] has to intimate to Central Government within three months of receipt of FC.
  - Earlier such monetary threshold limit was Rs 1 Lakh and intimation to Central Govt. was required within thirty days.
- It has given individuals and organizations or NGOs 45 days to apply for 'registration' or 'prior permission' under FCRA to receive funds. Earlier in FCRR, 2011 it was 30 days.
- Organizations receiving foreign funding may not use more than 20% of such funding for administrative purposes. Before 2020, this limit was 50%.
- Five more offenses were made "compoundable" under the FCRA, making 12 offenses instead of directly prosecuting organizations or individuals. Earlier, only seven offenses were compoundable under FCRA.

**FCRA**

- ✓ The Act regulates the acceptance and utilisation of foreign contribution by individuals, associations and companies.
- ✓ Foreign contribution is the donation or transfer of any currency, security or article (of beyond a specified value) by a foreign source.
- ✓ FCRA is implemented by Ministry of Home Affairs (MHA), supported by Intelligence Bureau in approvals and rejections through investigation on antecedents.
- ✓ Persons, who are prohibited to accept any foreign contribution are:
  - Public servant,
  - Judge,
  - Government servant or
  - Employee of any corporation or
  - Any other body controlled or owned by the Government
- ✓ According to the Act, foreign contribution must be received only in an account designated by the bank as "FCRA account" in such branch of the State Bank of India, New Delhi, as notified by the central government.
- ✓ It was amended in 2016, 2018 and 2020.

## Panchayats (Extension to the Scheduled Areas) Act, 1996

**Context**

Recently, Madhya Pradesh has notified its PESA Rules on the occasion of Janjatiya Gaurav Divas on 15th November, 2022.

**About PESA**

- PESA Act was enacted in 1996 for tribal empowerment and to bring them into mainstream.
  - It was based on recommendations of Dileep Singh Bhuria Committee.
- Ministry of Panchayati Raj is nodal Ministry for implementation of provisions of PESA in States.
- PESA Act is called a 'Constitution within the Constitution'.
- The PESA Act will empower the Gram Sabhas to take decision on the rules and regulations with regard to all natural resources in the forest areas.
- The PESA Act will give more constitutional rights to the tribal people to reap the benefits of natural resources from the forest areas where they live.



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- With the objective of effective implementation of PESA, Ministry of Panchayati Raj circulated Draft Model PESA Rules in 2009.
  - Out of the ten PESA States, eight States namely; Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Maharashtra, Madhya Pradesh, Rajasthan and Telangana have framed and notified their State PESA Rules under their respective State Panchayati Raj Acts.
  - State of Chhattisgarh has notified their PESA Rules on 8th August, 2022.
- Presently, 10 States viz. Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan and Telangana, have Fifth Schedule Areas in their respective States.
- PESA is an Act to provide for the extension of the provisions of Part IX of the Constitution relating to the Panchayats to the Scheduled Areas. In terms of section 2 of this Act, "Scheduled Areas" means the Scheduled Areas as referred to in clause (1) of article 244 of the Constitution.

## DELEGATED LEGISLATION

**Context**

Recently, Supreme Court was upholding the Centre's 2016 decision on demonetisation. The majority ruling upheld the validity of the delegated legislation, the dissenting verdict noted that excessive delegation of power is arbitrary.

**About delegated legislations**

- Parliament routinely delegates certain functions to authorities established by law since every aspect cannot be dealt with directly by the law makers themselves.
  - This delegation of powers is noted in statutes, which are commonly referred to as delegated legislations.
- The delegated legislation would specify operational details, giving power to those executing the details.
  - Regulations and by-laws under legislations are classic examples of delegated legislation.
- Delegated legislation can only exist in relation to an enabling act.
- Delegated legislation contains the many administrative details necessary to ensure that the provisions of the act will operate successfully.
  - It may be administered by Government Departments, Local Councils or Courts.
- Regulations and Statutory Rules are the most common forms of delegated legislation. Laws, and Ordinances are also its form.
- This delegation is also **known as secondary legislation or subordinate legislation**. The Act that gives the executive the power to legislate is called the Enabling Statute or Parent Act.

## PARLIAMENTARY PRIVILEGES

Parliamentary privilege refers to rights and immunities enjoyed by Parliament as an institution and MPs in their individual capacity, without which they cannot discharge their functions as entrusted upon them by the Constitution.

- The Indian Constitution's Article 105 defines parliamentary privileges.

- According to the Constitution, the powers, privileges and immunities of Parliament and MP's are to be defined by Parliament.
- No law has so far been enacted in this respect. In the absence of any such law, it continues to be governed by British Parliamentary conventions.

| Parliamentary privileges | |
|---|---|
| **Individually enjoyed by the members** | **Enjoyed by the members collectively** |
| ❖ Freedom of speech in parliament<br>❖ Freedom from arrest<br>❖ Freedom from appearing as a witness<br>❖ Power to make rules of procedure | ➢ Right to prohibit the publication of proceedings<br>➢ Right to exclude strangers<br>➢ The right to punish members and outsiders for breach of its privileges<br>➢ The right to regulate the internal affairs of the House |



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- Members of Parliament are not held liable in civil or criminal court for their words or acts while carrying out their official duties.
- Only when a person is a member of the House can they make use of the privileges.
- The privileges are supposed to be terminated as soon as he ceases to be a member.
- The members' privileges are required to carry out their constitutional duties.
- These rights are crucial for all processes and functions' orderly and disciplined conduct.

## The Anti-Defection Law

**Context**

Anti-defection law become most important and debatable in recent years.

**About Anti-defection law**

- The anti-defection law is contained in the 10th Schedule of the Constitution. It was enacted by Parliament in 1985.
- The anti-defection law, as it is popularly known, aims at checking toppling of governments by party-hopping MLAs in the 60's and 70's.
- The law punishes individual MPs and MLAs from changing party after being elected. They could be disqualified from their membership of the House by the presiding officer.
- A member is deemed to have defected if he or she gives of primary membership of his party or does not obey party during voting in the House. However, if at least two-third members of the legislative group of a political party decide to merge with any other political party, they could not be punished under the Anti-Defection law.

**The grounds of disqualification**

✓If the member voluntarily gives up the membership of the party, he shall be disqualified. Voluntarily giving up the membership is not the same as resigning from a party. Even without resigning, a legislator can be disqualified if by his conduct the Speaker/Chairman of the concerned House draws a reasonable inference that the member has voluntarily given up the membership of his party.

✓If a legislator votes in the House against the direction of his party and his action is not condoned by his party, he can be disqualified.

✓ However, there is an exception that was provided in the law to protect the legislators from disqualification. The 10th Schedule says that if there is a merger between two political parties and two-thirds of the members of a legislature party agree to the merger, they will not be disqualified.

**Amendments in the Anti-Defection Law till date**

▪ The law was amended in the year 2003. When it was enacted first, there was a provision under which if there occurs a split in the original political party and as a result of which one-third of the legislators of that party forms a separate group, they shall not be disqualified.

▪ This provision resulted in large scale defections and the lawmakers were convinced that the provision of a split in the party was being misused. Therefore, they decided to delete this provision. Now, the only provision which can be invoked for protection from disqualification is the provision relating to the merger, which is provided in Paragraph 4 of the 10th Schedule.

## Reservation in Local Bodies

**Context**

Supreme Court allowed that Madhya Pradesh State can provide reservation to Other Backward Classes (OBC) in local body elections for now.

**About Reservation in local bodies**

- The Supreme Court has emphasised since 2010 that OBC quota in elections should be backed by empirical data, unlike reservation for OBCs, (along with SCs and STs) in education and employment.
- Local body elections in at least three states, Maharashtra, Karnataka, and Madhya Pradesh had been stalled in the absence of updated empirical data on OBC groups.
- The court had directed that the elections to the local bodies be notified within two weeks without providing for OBC reservation as the state was yet to complete the triple test laid down by the SC before providing for such reservation.



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- The Madhya Pradesh government again approached the court seeking permission to implement the OBC quota saying that the first report of the commission was revised keeping in view the concerns expressed by the court and contended that the second report satisfies the triple test requirement.
- The triple conditions to empirically establish the need for OBC quota were
  - a state commission must "conduct contemporaneous rigorous empirical inquiry into the nature and implications of the backwardness qua local bodies, within the state";
  - specify the proportion of reservation required to be provisioned local body wise in light of recommendations of the commission; and
  - total "reservation (must) not exceed the aggregate of 50% of the seats"

**Constitutional provisions**

According to Article 243(T) of Indian constitution-

- ✓ For Scheduled Castes and Scheduled Tribes, the Constitution specifies that seats have to be reserved in proportion to the population of these groups in the area.
- ✓ However, on the "backward class of citizens", the Constitution only says that state governments have the power to reserve seats for these groups without specifying how this is to be done.
- ✓ One third of the total number of seats reserved for women.

## The Office of Profit

**Context**

The Election Commission has sent a notice to Jharkhand Chief Minister over an office-of-profit charge against him for allotment of a mining lease in his name last year.

**Office of Profit in India**

- ➢ In India, the office of profit disqualifying the holder was imported from Britain and made its appearance for the first time in the Act of 1909 which embodied the Morley- Minto Reforms proposals.
- ➢ The basic idea was - and remains - that the legislators should not be vulnerable to temptations an executive can offer. The framers of the Constitution thoughtfully incorporated Article 102(1) and 191(1), prescribing the restriction at central and state levels. In the Indian constitution Article 102 and Article 191 deal with disqualification of the members of Parliaments and state legislature respectively.
- ➢ Article 102(1) (a) provides for the disqualification of the membership of either house of parliament and read it as follows:
  - o Article 102 (1) (a) of the constitution says that a person shall be disqualified from being chosen as and for being a member of the either house of the parliament.
  - o If he holds any office of profit under the Government (center or state) other than an office declared by parliament by law not to disqualify its holder.
  - o An office of profit need not be necessarily conferred pecuniary benefit, it is sufficient if it bestows administrative and executive powers.
- ➢ There is a similar provision in the Constitution for the disqualification of members of the legislative assembly under Art.191 (1).
- ➢ The expression, "office of profit" has not been defined in the Constitution or in the Representation of People Act, 1951.
- ➢ Its ambit has to be inferred only from the pronouncement of the courts and other competent authorities like the Election Commission and the president.
- ➢ The object of the provision is to secure the independence of the members of Parliament and do not contain persons who have received favors or benefits from the executive and who consequently being under an obligation to executive might be amenable to influence.
- ➢ The object of enacting Articles 102(1)(a) and the 191(1)(a) is that there should not be any conflict between the duties and interests of an elected member and to see that such an elected member can carry freely and fearlessly his duties without subjected to any kind of governmental pressure, thereby implying that if such an elected person is holding an office which brings him remunerations and if the Government has a voice in his functions in that office there is every likelihood of such persons succumbing to the wishes of Government.



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## Legislative Councils

**Context**

Recently, Elections to the Karnataka Legislative Council's graduate and teacher constituencies were conducted. In this election only graduates and teachers can vote.

**About Legislative council**

- Constitution of India provides for a bicameral system at both the center and state level. At the level of state houses are divided into Legislative Assembly or Vidhan Sabha and Legislative Council or Vidhan Parishad.
- Under Article 169- Legislative Council can be formed —if the Legislative Assembly of the State passes a resolution to that effect by a Special majority (the total membership of the Assembly and by a majority of not less than two-thirds of the members of the Assembly present and voting) Parliament can then pass a law to this effect.
- Under Article 171 of the Constitution, the Legislative Council of a state shall not have more than one-third of the total number of MLAs of the state, and not less than 40 members.
- The tenure of the members of the council is six years, and a third of the members of the House retire after every two years
- Currently, six states have Legislative Councils (Andhra Pradesh, Bihar, Karnataka, Maharashtra, Telangana, and U.P). Legislative Council pf Andhra Pradesh, set up in 1958, was abolished in 1985, and then reconstituted in 2007. Proposals to create Councils in Rajasthan and Assam are pending in Parliament.

**Composition of the Legislative Council**

❖ The members of the Council are either nominated by the Governor of the state or are indirectly elected.
❖ One-third of the members of this House are elected by the Legislative Assembly.
❖ One-third members are elected by the local bodies like a municipality or other local authorities.
❖ One-twelfth of the members are elected by graduates.
❖ One-twelfth of the members are elected by teachers.
❖ About one-sixth of the members are nominated by the Governor.
❖ The legislative Council elects its chairman, who plays the role of presiding officer and Deputy Chairman from amongst its members.
❖ Eligibility criteria to become an MLC are Indian citizen who is at least 30 years of age; a person cannot simultaneously be a Member of Parliament and State legislature.

**Role and Responsibilities of Legislative councils**

- ✓ MLCs are expected to help the state government make laws and regulations based on their knowledge and experience.
- ✓ MLCs can ask questions of ministers and initiate debates and can introduce ordinary bills. However, it cannot introduce or vote on money bills.
- ✓ Chairman and Deputy Chairman of Councils enjoys the status of Cabinet Ministers in the state.
- ✓ It ensures it act as a check on hasty actions by the popularly elected House.
- ✓ It ensures that individuals who might not be cut out for the rough-and-tumble of direct elections too are able to contribute to the legislative process.
- ✓ There are certain criticisms which Legislative council faces such as

**Legislative Council (LC) vs Rajya Sabha (RS)**

❖ LCs and RS carries several similarities which are o LCs and RS members have same term and retirement procedure.
  o They both are void of "Power of Purse" i.e., they cannot introduce or vote on money bill.
  o They both provide for checks and balances in ordinary legislation and act as revisionary house.
  o They both provides for adequate representation to section who are left behind due to first past the post-election system
❖ However, RS differs from LC on several grounds
  o RS institutionalize the principle of federalism, while LC provides for larger representation within states.
  o RS offers a degree of continuity while LC can be abolished by Legislative Assemblies passing resolution to that effect with special majority.
  o RS carries special power which are not available to LCs such as
    - Under **Article 312** Creation of additional All India Services.
    - Under **Article 249** Transfer subject from state to Union list.
    - Under **Article 352** Endorse emergency for a limited per

o It can be used to park leaders who have not been able to win an election.
o It can be used to delay progressive legislations.
o It creates a burden on state finances.



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# Laws & Bills

## Prevention of Money Laundering Act

**Context**

Supreme Court of India upheld the constitutional validity of the Prevention of Money Laundering Act 2002. Court highlighted that principle of innocence of the accused is through a human right but this presumption can be interdicted

**About Money laundering (ML)**

- According to Black's Law of Lexicon laundering means a process where illegal is converted into legal money in a manner that original source of the money cannot be traced.
- The origin of money laundering can be traced back to American gangsterism which started with the prohibition of sale of alcoholic drinks in the US. To convert their ill-gotten money into a legitimate business they started investing in laundry business in US which was a cash business.
- Over the time these criminals moved further into business where use of cash was higher like casinos and narcotics.
- ML involves three basic steps which are:
  - **Placement-** In this stage the idea is to introduce illegal profits and money into formal financial system. Technique used here is called smurfing i.e., breaking down large volumes of cash into smaller and untraceable amounts. This money can be used to buy high value goods such as in India purchase of gold, silver and bullion.
    - **Layering-** In this fund are moved far away from their source of origin. In this wealth can be taken to a country with weak anti-money laundering laws and then can be used to legitimate investment instruments, for this bogus companies which exist only on paper are created.
    - **Integration-** Money which is placed and integrated is brought back into the economy as a legitimate transaction into sectors like real-estate, luxury assets etc.
- Money laundering is a threat to national security as it led to loss of tax revenue to the government. In order to compensate government raises tax rates, this undermines tax equity and promotes tax evasions, thereby creating an unending cycle.

• Corruption is a source of ML as it generates large amounts of proceeds to be laundered. Corruption may also enable the commission of a ML offense and hinder its detection, since it can obstruct the effective implementation of a country's judicial, law enforcement and legislative frameworks.

**Enforcement Directorate**

Founded on 1st May 1956 as enforcement unit under the Department of Economic Affairs for handling exchange control laws violation under Foreign Exchange Regulation Act (FERA) 1947.

Agency play different role under different act which are:

- Conservation of Foreign Exchange and Prevention of Smuggling Activities Act, 1974 (COFEPOSA)
  - ED is empowered to sponsor cases of preventive detention with regard to contraventions of FEMA.
- The Foreign Exchange Management Act, 1999 (FEMA):
  - Investigation of suspected contraventions of the rules and regulations of Act
  - Adjudicate and impose penalties on the convicts under the act.
- The Prevention of Money Laundering Act, 2002 (PMLA):
  - Enforce provisions of the PMLA and investigate and trace the assets derived from proceeds of crime.
  - Ensure prosecution and confiscation of the property by the special court.
- The Fugitive Economic Offenders Act, 2018 (FOEA):
  - ED is mandated to attach the properties of the fugitive economic offender's and confiscate their properties.

**Prevention of Money Laundering Act, 2002**

➢It was enacted in January 2003 and came into force from 2004. It was enacted to prevent and control money laundering. It provides for confiscation and seizure of properties derived from laundered proceeds.

➢ Nodal Agency for the implementation of the act is Enforcement Directorate (ED) works under the Department of Revenue in the Finance Ministry.

➢ Act also provides for adjudicating authority and appellate tribunal to hear against the order of adjudicating authority.



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➢ Government of India can enter into agreement with government of any country for enforcing provision of the PMLA. This will include information exchange for the prevention of offence and investigation of cases relating to any offence under PMLA.

➢The act empowers Director of FIU-IND (Financial Intelligence Unit-India) to impose fines on the financial intermediaries if they fail to comply with the provisions of the act.

**New amendments to PMLA and Issues**

Government of India brought changes in the PMLA which includes:

✓ Redefinition of crime: not only it will include the properties derived from the scheduled offences but also include any other properties obtained while indulging in the scheduled offence.

- o It stopped looking ML in silos, rather started looking it in connection with another crime which are known as the predicate offences. It also made ML as stand-alone crime.
- o It recognized ML as offence of continuing nature and therefore person involved in the offence of money laundering till the time that person is getting the fruits of activities.

**Keywords**
PMLA, ED, Money laundering

✓ Expansion of the scope of crime: by amending Section 3 of MLA, now a person shall be accused if they are involved in crimes such as:

- o Concealment
- o Possession
- o Acquisition
- o Use or claiming as untainted property

## law for treating Juvenile as an Adult

**CONTEXT**

The National Commission for Protection of Child Rights (NCPCR) has come up with draft guidelines on the preliminary assessment of whether certain minors are to be tried under law as adults in particular cases, under the Juvenile Justice (Care and Protection of Children) Act.

**About draft guidelines on the preliminary assessment**

- ✓ Earlier, **all children under the age of 18** were considered minors by the law, but through **an amendment in 2015**, a provision was added to **the JJ Act** for trying a child in conflict with the law as an adult.
  - o Under this, a child in the age group of 16-18 years could be tried as an adult in case of heinous offences. **Section 15 (1) of the Act states** that the **Juvenile Justice Board** shall conduct a preliminary assessment to determine whether to try such a child as an adult or a minor.
- ✓ The Act directs that the Board shall consider **the mental and physical capacity** of the child for committing the **alleged offence**, the ability to understand the consequences of the offence, and the circumstances in which **the offence was committed**.
  - o It states that the Board can take the assistance of experienced **psychologists or psychosocial workers or other experts**.
  - o The Act also gives a disclaimer that the assessment is not a trial, but is only to assess the capacity of the child to commit and **understand the consequences of the alleged offence**.
- ✓ After the assessment, the Board can pass an order saying there is a need to try the said child as an adult and **transfer the case to a children's court** with the **relevant jurisdiction**.
  - o If tried as a minor, the child could be sent to a special home for a maximum of three years.

**NCPCR**

- National Commission for Protection of Child Rights (NCPCR was established in March 2007 under an Act of Parliament (December 2005) under the Commission for Protection of Child Rights Act, 2005.
- The commission's mandate is to ensure that all laws, policies, programs and administrative systems conform to the vision of the rights of the child as enunciated in the Constitution of India as well as the United Nations Convention on the Rights of the Child.
- It is a seven-member body consisting of a chairman and six members.



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- If tried as an adult, **the child can be sentenced to a jail term**, except being sentenced to **death or life imprisonment** without the possibility of release.

## Media accreditation guidelines

**Context**

Recently, Central government released the Central Media Accreditation Guidelines2022.

**How this is different from the past?**

For one, the guidelines prepared by the Ministry of Information and Broadcasting are more in the nature of proscriptions rather than prescriptions. In laying down the conditions for withdrawal of accreditation, they serve more as censorship rules rather than guidelines. Previous guidelines were more general in nature and did mention that accreditation would be withdrawn if found to be misused. In the new guidelines, there are 10 provisions under which accreditation to a journalist can be withdrawn.

**What has changed?**

• The new policy, prepared by the Ministry of Information and Broadcasting (I&B) and issued by the Press Information Bureau, lays down guidelines on how PIB accreditation will be granted to eligible journalists. At the moment there are 2,457 PIB-accredited journalists in the country.

• For the first time, it specifies conditions that can result in the journalist losing accreditation. If a journalist "acts in manner which is prejudicial to the sovereignty and integrity of India, the security of the state, friendly relations with foreign states, public order, decency or morality or in relation to contempt of court, defamation or incitement of an offence", her accreditation can be cancelled.

• The previous policy, issued in 2013, had stated, under general terms of accreditation, that accreditation "shall be withdrawn as soon as the conditions on which it was given cease to exist. Accreditation is also liable to be withdrawn/suspended if it is found to have been misused".

• The new policy has ten points that may result in the accreditation being cancelled, including if a journalist is charged with a "serious cognisable offence".

# FR/DPSP/FD

## Digital Free Speech

**Context**

Microblogging site Twitter has recently filed a case against government of India in Karnataka High Court alleging disproportionate use of power by officials and challenging several blocking orders from the Union government on content posted on its website.

A **'constitutional tort'** is a violation of one's constitutional rights, particularly fundamental rights, by an agent of the government, acting in his/her official capacity. A court of law can award monetary compensation to the victim in such a case.

**Freedom of Speech and Expression**

• Freedom of speech and expression had existed since ancient times, dating back at least to the Greek Athenian era more than 2400 years ago.

• It means everyone can express themselves through any media and frontier without outside interference, such as censorship, and without fear of reprisal, such as threats and persecutions

• It includes:

o Freedom of opinion and expression

o Freedom to seek, receive and impart information and ideas of all kinds

**Keywords**

IT act 2000, Freedom of speech and expression

• Constitution of India provides for freedom of speech and expression for its citizens under Article 19 (1) (a). It also places several restrictions on the following grounds:

- Sovereignty and integrity of India
- Security of the State
- Friendly relations with foreign States



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- Public Order
- Decency or morality
- Contempt of court
- Defamation
- Incitement to an offence

• In 2020, The High Court of Tripura has held that posting on social media was virtually the same as a fundamental right of speech and expression applicable to all citizens, including government employees.

**Regulation of digital speech in India**

**Information technology Act, 2021**

- It mandates social media to exercise greater diligence with respect to content on their website.
- They should establish a grievance redressal officer to take down objectionable content within stipulated time frames
- A Grievance Appellate Committee where user can complain against the redressal officer if they are not satisfied with the resolution. However this won't curtail user right to approach courts

Section 66 IT Act 2000

- It empowers police to make arrest if in its their subjective discretion they found any post as offensive or menacing and can cause annoyance, inconvenience etc.
- Under its ambit punishment prescribed is conviction of maximum of three years in jail.
- Supreme Court in Shreya Singhal vs Union of India case (2015) used doctrine of severability and removed the word offensive given in the act as it was very vague.

Section 69A of IT Act 2000

- Central and State government are empowered to intercept, monitor or decrypt any information generated, transmitted, received or stored in any computer resource.
- It enables the Centre to ask any agency of the government, or any intermediary, to block access to the public of any information generated, transmitted, received or stored or hosted on any computer resource. Any such request for blocking access must be based on reasons given in writing.
- Such powers can be exercised when it's a matter of
  - Sovereignty or integrity of India, defence of India, the security of the state.
  - Regulation of Digital Speech in India
  - Friendly relations with foreign states.
  - Public order, or for preventing incitement to the commission of any cognizable offence relating to these.
  - For investigating any

## Child Rights and Corporal Punishment

**Context**

Despite several efforts of the government and civil society, menace of corporal punishment has not been eliminated in India. Incidents of excessive use of force against school students continues, they are being intimated and often thrashed sometimes causing grievous injuries and, in some cases, even caused death.

**Corporal Punishment**

• There is no statutory definition of corporal punishment of children in Indian law. However, United Nations Committee on the Rights of the Child defines corporal punishment as "any punishment in which physical force is used and intended to cause some degree of pain or discomfort, however light." It also includes non-physical form of punishment such as belittling, humiliating, denigrating, scapegoating, threatening, scaring or ridiculing the child.

• Problem of corporal punishment is quite rampant and this is even reflected in the study conducted by the Ministry of Women and Child Development children are facing physical abuses in the setting which were meant for care and protection of children such as hostels, orphanages, ashram shalas, and juvenile homes and even in the family setting.

**Legal Provisions against Corporal Punishment**

**Constitutional Provisions**



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▪ Corporal punishment violates the multiple articles of the constitution such as

o Article 21- Right to life and dignity.

o**Article 21A-** Free and compulsory education for children up to 14 years of age however fear of corporal punishment makes children more likely to avoid school or to drop out altogether.

o**Article 39(e)** directs the State to make sure that the tender age of children is not abused.

o**Article 39(f)** directs the State to ensure that children are given opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity and that childhood and youth are protected against exploitation and against moral and material abandonment.

**The Right of Children to Free and Compulsory Education (RTE) Act 2009**

- Section 17(1) and 17(2) prohibits physical punishment and mental harassment and makes it a punishable offence.
- Section 8 and 9 places responsibility on the government to ensure that there is no discrimination against children belonging to dis-advantaged group and weaker sections. The

**Juvenile Justice (Care and Protection of Children) Act, 2000**

- The act under Section 23 criminalizes acts that may cause a child mental or physical suffering.
- It makes corporal punishment punishable with imprisonment for a term which may extend to six months, or fine, or with both.
- It covers anyone in a position of authority over a child, which would include parents, guardians, teachers and employers.

**Role of National Commission for Protection of Child Rights (NCPCR)**

❖ Statutory Body formed under section 3 of Protection of Child Rights (PCR) Act 2005.

❖ It is entrusted with the following:

o Monitoring implementation of Right to Education.

o Safeguards child rights provided under the PCR Act 2005

o Recommend measures for effective implementation of rights provided under PCR Act 2005.

o Enquire into any matters relating to child's right to free and compulsory education under RTE Act 2009.

**Role of State Commissions for Protection of Child Rights (SCPCRs)**

❖ It's a statutory body formed under section 4 of Protection of Child Rights (PCR) Act 2005.

❖ In absence of SCPCR state government can appoint another competent authority which performs the functions which an SCPCR will perform.

❖ SCPCRs are the appellate authority to receive appeals from the aggrieved persons who would prefer such appeals when their grievances relating to children's right to education are not redressed by the designated local authorities.

❖ SCPCRs is also entrusted with the same functions which NCPCR performs.

**Scheduled Castes and Tribes (Prevention of Atrocities) Act, 1989**

o Provisions of the act can be used to prosecute an adult in the general category who inflicts corporal punishment upon a scheduled caste or scheduled tribe child.

**Protection of Civil Rights Act, 1955**

o Provisions of the act prosecute a person/ manager/trustee as well as warrant resumption or suspension of grants made by the Government to the educational institution or hostel on the ground of untouchability.

## Personality Rights

**Context**

Recently, The Delhi High Court passed an interim order to prevent the unlawful use of a Bollywood star's name, images, and voice. Through its order, the court restrained persons at large from infringing the personality rights of the actor.

**Understanding Personality Rights**

• Personality rights refer to the right of a person to protect her/his personality under the right to privacy or property.

• These rights are important to celebrities as their names, photographs or even voices can easily be misused in various advertisements by different companies to boost their sales.

• Therefore, renowned personalities/celebrities must register their names to save their personality rights.

• Attributes which are needed to be protected includes-name, nickname, stage name, picture, likeness, image, and any identifiable personal property, such as a distinctive race car.

**Personality vs Publicity Rights**



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➢ Personality Rights include two sets of rights

- O **Right to Publicity-** This is similar to the use of a trademark. It includes the right to keep one's image and likeness from being commercially exploited without permission or contractual compensation
- O **Right to Privacy-** This is the right to not have one's personality represented publicly without permission.

➢ Publicity rights fall under the realm of the 'tort of passing off'. Passing off means passing your goods and services intentionally or unintentionally as those belonging to another party. This might result in misrepresentation and can cause reputational damage.

➢ Publicity rights are governed by statutes like the Trademarks Act 1999 and the Copyright Act 1957.

**Personality Rights in India**

✓There is no separate codified law in India dealing with personality or celebrity rights. However, there are several statutory provisions broadly governing and protecting Personality Rights which include:

- O **Right to Life (Article 21):** Personality Rights are contained and governed as part of the fundamental right of the Right to Life guaranteed under Article 21 of the Constitution of India.
- O **Intellectual Property Law-** Personality Rights are construed as property of well-known public figures which cannot be misused or misappropriated by anyone.
- O **Copyright Act 1957-** The Authors or the Performers have the right to be given credit or claim authorship of their work and have a negative right to restrain others from causing any kind of damage to their work which consequently disrupts their reputation.
- O **Indian Trademarks Act, 1999-** Section 14 of the Act prohibits the use of personal names.
- o Personality Rights are also protected under the common law remedy of passing off and that of the Law of Torts protecting against the tort of disparagement, libel, or slander.

✓In Arun Jaitley v. Network Solutions Private Limited and Ors. Case Delhi High Court observed that the popularity or fame of an individual will be no different on the internet than in reality. Court asserted that the name also falls in the category wherein besides it being a personal name it has also attained distinctive indicia of its own.

## Age of Consent

**Context**

Karnataka High Court has urged the Law Commission of India to rethink the age of consent for adolescents. The court asserted this while dismissing a plea on POCSO Act.

**Understanding the POCSO (Protection of Children from Sexual offense) Act**

• Under the act, a child is a person who is below 18 yrs of age.

• Under the act, different forms of sexual abuse are included ranging from penetrative to non penetrative assault. It also includes sexual harassment and pornography.

• It casts police in the role of child protectors during the process of investigation.

**Age of consent**

The age of consent is the age at which a person is considered to be legally competent to consent to sexual acts. POCSO fixed the age of consent for both boys as well as girls at 18.

• Under the act, any case of child sexual abuse must be disposed of within one year from the date the offense is reported.

• Sexual assault is considered aggravated when the abused child is mentally ill or when the abuse is committed by a person in a position of trust or authority like a family member, police officer, teacher, or doctor.

• The Act was amended in 2019 and more stringent punishment like the death penalty, for sexual crimes against children was added.

## Cooperatives

**Context**

Recently, Lok Sabha referred the Multi-State Co-operative Societies (Amendment) Bill-2022 to a joint committee of Parliament comprising 21 members from the Lower House and 10 from the Upper House.

**About the bill**



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- The Bill amends the Multi-State Co-operative Societies Act, 2002. It establishes the Co-operative Election Authority to conduct and supervise elections to the boards of multi-state co-operative societies.
- A multi-state co-operative society will require prior permission of government authorities before the redemption of their shareholding.
- A Co-operative Rehabilitation, Reconstruction and Development Fund will be established for the revival of sick multi-state co-operative societies. The Fund will be financed through contributions by profitable multi-state co-operative societies.
- The Bill allows state co-operative societies to merge into an existing multi-state co-operative society, subject to the respective state laws.

**About Co-operative societies**

- A cooperative (also known as co-operative, co-op, or coop) is "an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically-controlled enterprise".
- It is aiming to provide goods and services, eliminate the unnecessary profits of middlemen in trade and commerce and prevent the exploitation of the weaker members of society.
- Cooperatives are democratically controlled by their \members, with each member having one vote in electing the board of directors.
- Constitutional provisions are:
  - The right to form cooperative societies was included as Right to Freedom (Article 19 (1)).
  - Promotion of Cooperation societies was inserted as one of the DPSPs (Article 43-B).
  - Cooperatives are a state subject under seventh schedule.

**Multi State Cooperative Societies ACT, 2002**

**An Act to,**

- consolidate and amend the law relating to co-operative societies, with objects not confined to one State and serving the interests of members in more than one State,
- facilitate the voluntary formation and democratic functioning of co-operatives as people's institutions based on self-help and mutual aid and
- enable them to promote their economic and social betterment and
- Provide functional autonomy was being felt necessary by the various cooperative societies, and federation of various cooperative societies as well as by the Government.

## Economically Weaker Sections (EWS) Quota

**Context**

A Constitution Bench of the Supreme Court in a 3:2 majority decision upheld the validity of the 103rd Constitutional Amendment.

**About Economically Weaker Section (EWS) Reservation**

**Genesis**

• EWS was introduced through the 103rd Constitutional amendment act.

• The act amended Article 15 and Article 16 of the constitution and inserted 15(6) and 16(6).

• It provides for reservation in jobs and admissions in educational institutes for EWS.

• Both Centre and the states can provide reservations to EWS.

• The reservation is in addition to the existing reservations and carries a maximum limit of 10% of total seats.

**Mandal Commission**

❖ In 1979, the Morarji Desai government set up the Mandal Commission to identify socially or educationally backward classes to address caste discrimination.

❖ Chaired by B.P. Mandal, the Commission recommended that members of OBCs be given 27 per cent reservations for jobs under the Central government and public sector undertakings.

❖ This would take the total number of reservations for Scheduled Castes and Scheduled Tribes and OBC to 49 per cent.



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• The basis of the EWS lies in Article 46 (DPSP) of the constitution which mandates that the state should protect the educational and economic interests of the weaker sections of society.
• Minority educational institutions under Article 30 (1) are excluded from the reservation.
• Economic weakness will be decided based on criteria such as family income and other indicators of economic disadvantage.

## Crackdown of child marriage

**Context**

The Assam government recently launched its crackdown on child marriage. Supreme Court is set to look into whether the age limit for marriage under the Prohibition of Child Marriage Act overrides Muslim personal law provisions, so long referred to by courts in such cases.

**About Child Marriage**

- It refers to any formal marriage or informal union. Between a child under the age of 18 and an adult or another child.
- The Prohibition of Child Marriage (Amendment) Bill, 2021, fixes 21 years as the marriageable age for women.

**Protection of Children from Sexual Offences (POCSO) Act**

- The POCSO Act was enacted in 2012. It criminalizes sex between a minor and an adult and defines a child as someone under the age of 18. The law does not recognize a minor's consent as valid.
- It is a gender-neutral act and recognizes that boys can also become victims of sexual violence.

**Legal status of Child marriage**

**Prohibition of Child Marriage Act 2006**

- A The act says that child marriages are illegal but not void. They are voidable only when the minor partner asks the court to declare the marriage void.
- It prescribes 18 and 21 years as the minimum marriageable age for women and men respectively. It punishes child marriage with imprisonment which may extend to 2 years or with a fine which may extend to Rs 1 lakh or both. The punishment also extends to anyone who performs or conducts any child marriage.

**Muslim legal age of marriage under personal law:**

- Under Muslim personal laws, the marriage of a bride who has attained puberty is legal.
- The age gap difference provision between Muslim personal law and special legislation prohibiting child marriages or the sexual activity of minors classifying it as a criminal offence.

**Juvenile Justice Boards**

**About:** Juveniles accused of a crime or detained for a crime are brought before the Juvenile Justice Board (JJB) under the Juvenile Justice (Care and Protection of Children) Act, 2015.

**Aim:** To hold a child culpable for their criminal activity, not through punishment, but counseling the child to understand their actions and persuade them away from criminal activities in the future.

**Structure:** The JJB consists of judicial magistrate of the first class and two social workers, at least one of whom should be a woman.

**Tenure:** The tenure period for members of the board is 3 years. However, members can also be appointed consecutively for a maximum of two terms.

**Powers:** The Bench shall have all the powers conferred by the Code of Criminal Procedure, 1973 on a Metropolitan Magistrate or a Judicial Magistrate First Class. The onus of sensitizing and providing training to all the Board Members lies on the State Government.

**Central Government's Stand**

- In 1978, the government increased age of marriage to 18 for girls and 21 for men and before that it was 15 years for female and 18 for men since independence.
- Indian Parliament enacted several laws including the Prohibition of Child Marriage Act, 2006 and the Protection of Children from Sexual Offences Act, 2012, to protect the human rights of Children.
- Beti Bachao Beti Padhao to address the declining Child Sex Ratio.
- PM Matru Vandana Yojana (PMMVY) Providing Cash incentives for improved health and nutrition to pregnant and nursing mothers.
- Scheme for Adolescent Girls aims at girls in the age group 11-18, to empower and improve their social status through nutrition, life skills, home skills and vocational training.
- Government started programmes like Rashtriya mahilakosh, national creche scheme, ujjawala scheme, one stop centre etc. for women empowerment.



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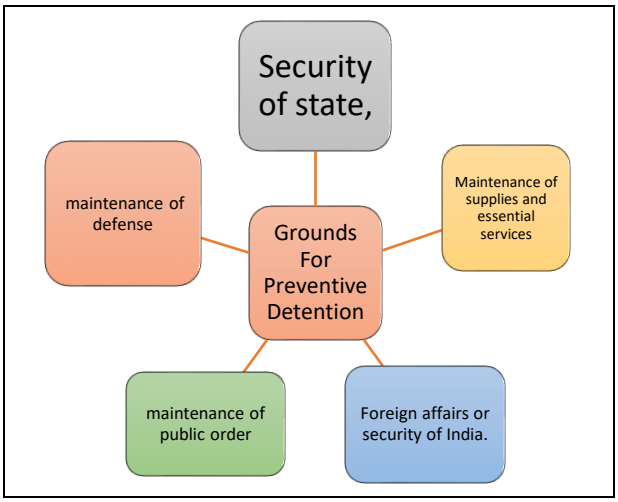
## Preventive Detention

**Context**

Recently, Supreme Court has ruled that preventive detention is to be used only in exceptional circumstances.




**About Preventive detention**

- Preventive detention means to detain a person so that to prevent that person from commenting on any possible crime or in other words preventive detention is an action taken by the administration on the grounds of the suspicion that some wrong actions may be done by the person concerned which will be prejudicial to the state.
- Multiple laws like Narcotic Drug and Psychotropic Substance Act (NDPS) 1985, Code of Criminal Procedure and Unlawful Activities (Prevention) Act etc. permit Preventive Detention.
- Preventive Detention is the most contentious part of the scheme fundamental rights in the Indian constitutions.
- Article 22(3) provides that if the person who has been arrested or detained under preventive detention laws then the protection against arrest and detention provided under article22 (1) and22 (2) shall not be available to that person.

**DIGITAL RIGHTS**

- Digital rights are those human rights and legal rights that allow individuals to access, use, create, and publish digital media or to access and use computers, other electronic devices, and telecommunications networks.
- The concept is particularly related to the protection and realization of existing rights, such as the right to privacy and freedom of expression, in the context of digital technologies, especially the Internet. The laws of several countries recognize a right to Internet access.
- According to the UN, disconnecting people from the internet violates these rights and goes against international law.

- A person may be detained without trial only on any or some of the above grounds. A detainee under preventive detention can have no right of personal liberty guaranteed by Article 19 or Article 21.

Safeguard Against preventive Detention

**Article 22(a):** No person who is arrested shall be detained in custody without being informed, as soon as may be, of the grounds for such arrest nor shall he be denied the right to consult, and to be defended by, a legal practitioner of his choice.

**Article 22 (b):** Every person who is arrested and detained in custody shall be produced before the nearest magistrate within a period of twenty-four hours of such arrest excluding the time necessary for the journey from the place of arrest to the court of the magistrate and no such person shall be detained in custody beyond the said period without the authority of a magistrate.

**Article 22 (3):** Nothing in clauses (1) and (2) shall apply—

(a) to any person who for the time being is an enemy alien; or

(b) To any person who is arrested or detained under any law providing for preventive detention.

**Article 22 (4):** No law providing for preventive detention shall authorise the detention of a person for a longer period than three months. unless—

(a) an Advisory Board consisting of persons who are, or have been, or are qualified to be appointed as, Judges of a High Court has reported before the expiration of the said period of three months that there is in its opinion sufficient cause for such detention

(b) Such person is detained in accordance with the provisions of any law made by Parliament under sub-clauses (a) and (b) of clause (7).

**Article 22 (7) (b):** Parliament may by law prescribe the maximum period for which any person may in any class or classes of cases be detained under any law providing for preventive detention

- The object of Preventive Detention is not to Punish but to prevent the detenu from doing something which is prejudicial to the State. The satisfaction of the concerned authority is a subjective satisfaction in such a manner.



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## Women Right Issues: Section 498A

**Context**

Recently, Supreme Court has said that it becomes pertinent to mention that incorporation of Section 498A of IPC was aimed at preventing cruelty committed upon a woman by her husband and her in-laws by facilitating rapid state intervention.

**About Section 498A**

• Section 498A was introduced in the year 1983 to protect a married woman from being subjected to cruelty. It claims to provide protection to women against dowry-related harassment and cruelty. On the other hand, it became an easy tool for women to misuse it and wreak revenge from their NRI husbands or to file a false case. Section 498A is one of the most controversial sections of the IPC.

| Section | Offence | Punishment | Cognizable or Non-Cognizable | Bailable or Non-Bailable | By what court triable |
|---|---|---|---|---|---|
| **498A** | Punishment for subjecting a married woman to cruelty | Fine and imprisonment for 3 years | Cognizable if the information relating to the commission of the offence is given to the officer. | Non bailable | Magistrate of the first class |

• Section 498A of the Indian Penal Code (IPC) deals with the violence done on women after her marriage by her husband or her in-laws or any relative of the husband. It prescribes punishment for 3 years and a fine. It gave a new definition to cruelty. Cruelty can be defined as –

- If the act done is of such a nature that the woman is enticed to commit suicide or cause an injury to herself, which may prove fatal. This was added in the case of Shobha Rani v. Medhukar Reddy. It was held in the case that evidence is required to prove cruelty.
- If the act done is to harass women or any other person related to her to meet unlawful demands.

## Vulnerable Witness

**Context**

Supreme Court expanded the definition of "vulnerable witness" in a criminal case, which earlier used to be a child below the age of 18, to include age and gender-neutral victims of sexual assault and witnesses suffering from mental illness among others.

**Vulnerable Witness Deposition Centre**

- The Vulnerable Witness Deposition Scheme aims at providing safety to vulnerable witnesses based on threat assessment and protection measures.
- The **Supreme Court of India** has expanded the meaning of vulnerable witnesses to also include among others sexual assault victims, those with mental illness and people with speech or hearing impairment.
- SC evidently mentioned that vulnerable witnesses would not just include child witnesses but also,
  - Age-neutral & Gender-neutral victims of sexual assault
  - Witnesses suffering from mental illness as defined in Mental Healthcare Act
  - Witnesses with threat perception and any speech or hearing- impaired individual
  - A person with other disabilities is considered vulnerable by the court

**Witness Protection Scheme, 2018**

- India's First Witness Protection Scheme was introduced in the year 2018. It was drawn by the central government with the objective of ensuring protection to the witnesses who may be intimidated or frightened to give evidence.
- The Scheme provides for three categories of witness as per threat perception:



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- **Category 'A':** Where the threat extends to the life of the witness or his/her family members, during investigation/trial or thereafter.
- **Category 'B':** Where the threat extends to safety, reputation or property of the witness or his/her family members, during the investigation/trial or thereafter.
- **Category 'C':** Where the threat is moderate and extends to harassment or intimidation of the witness or his/her family member's, reputation or property, during the investigation/ trial or thereafter.

- A State Witness Protection Fund was also introduced under the scheme that would be managed by the Department/Ministry of Home under State/Union Territories. Trial or thereafter.

**About Vulnerable Witness**

- The definition of "vulnerable witnesses" would now also include those with speech or hearing impediments and a "person suffering from any other disability who is considered to be vulnerable by court concerned."
- A Bench of SC issued the new guidelines while hearing a plea on protection of vulnerable witnesses in compliance with a 2018 Supreme Court verdict.
- In the 2018 case, the Supreme Court had issued directions for setting up special centres for examining vulnerable witnesses in criminal cases to create a "conducive environment" which would allow them to make statements before the court.
- According to Supreme Court women and children are vulnerable witness.

## Reasonable Accommodation and Fundamental Rights

**Context**

The All-India Muslim Personal Law Board (AIMPLB) along with two other petitioners has moved the Supreme Court against the Karnataka High Court judgement that upheld the ban on wearing hijab in educational institutions of the state.

**The principle of "Reasonable Accommodation"**

- 'Reasonable accommodation' is a principle that promotes equality, enables the grant of positive rights and prevents discrimination based on disability, health condition or personal belief. Its use is primarily in the disability rights sector.
- Article 2 of the UN Convention on the Rights of People with Disabilities (UNCRPD) defines reasonable accommodation as "necessary and appropriate modification and adjustments not imposing a disproportionate or undue burden, where needed in a particular case, to ensure to persons with disabilities the enjoyment or exercise on an equal basis with others of all human rights and fundamental freedoms".
- The International Labour Organization (ILO), in its recommendation on HIV/AIDS and the world of work, defines it as "any modification or adjustment to a job or to the workplace that is reasonably practicable and enables a person living with HIV or AIDS to have access to, or participate or advance in, employment".

**How does the principle of "Reasonable Accommodation" work?**

- ✓ The general principle is that reasonable accommodation should be provided, unless some undue hardship is caused by such accommodation.
- ✓ In 2016, the ILO came out with a practical guide on promoting diversity and inclusion through workplace adjustments. The need for workplace accommodation may arise in a variety of situations, but four categories of workers were chosen for the guide: workers with disabilities, workers living with HIV and AIDS, pregnant workers and those with family responsibilities, and workers who hold a particular religion or belief. These categories of workers come across different kinds of barriers at work. These may result in either loss of employment or lack of access to employment. "The provision of reasonable accommodation plays a major role in addressing these barriers and thus contributes to greater workplace equality, diversity and inclusion," according to the ILO guide.
- ✓ A modified working environment, shortened or staggered working hours, additional support from supervisory staff and reduced work commitments are ways in which accommodation can be made. Suitable changes in recruitment processes — allowing scribes during written tests or sign language interpreters during interviews — will also be a form of accommodation.

**The legal position of the principle of "Reasonable Accommodation" in India**



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- In India, the Rights of People with Disabilities Act, 2016, defines 'reasonable accommodation' as "necessary and appropriate modification and adjustments, without imposing a disproportionate or undue burden in a particular case, to ensure to persons with disabilities the enjoyment or exercise of rights equally with others".
- The definition of 'discrimination' in Section 2(h) includes 'denial of reasonable accommodation'.
- In Section 3, which deals with equality and non-discrimination, sub-section (5) says: "The appropriate Government shall take necessary steps to ensure reasonable accommodation for persons with disabilities."
- In Jeeja Ghosh and Another v. Union of India and Others (2016), the Supreme Court, while awarding a compensation of ₹10 lakh to a passenger with cerebral palsy who was evicted from a flight after boarding, said: "Equality not only implies preventing discrimination, but goes beyond in remedying discrimination against groups suffering systematic discrimination in society. In concrete terms, it means embracing the notion of positive rights, affirmative action and reasonable accommodation."
- The Supreme Court elaborated on the concept in Vikash Kumar v. UPSC (2021). This was a case in which the court allowed the use of a scribe in the Union Public Service Commission examination for a candidate with dysgraphia, or writer's cramp. The court ruled that benchmark disability, that is a specified disability to the extent of 40%, is related only to special reservation for the disabled in employment, but it need not be a restriction for other kinds of accommodation.

**Keywords**
Fundamental rights

# Miscellaneous

## Section 6A of Citizenship Act

**Context**

As Citizenship issue gets more controversial in Assam, a constitution bench of the Apex Court will examine the constitutional validity of Section 6A of the Citizenship Act.

**Understanding Section 6A of Citizenship Act**

- The section was inserted in to the Citizenship Act, 1955, after the tripartite agreement between the Centre, the Assam government and the All-Assam Students Union was signed in 1985, known as "Assam Accord".
- Under Section 6A of the Act, a special provision for Assam was created under which:
  - A person who entered between January 1, 1966, and March 25, 1971, and who are residing in the state, upon being detected as foreigners, will be allowed to register.
  - After registration, such a person will have the same rights and obligations as a citizen of India, but will not be entitled to be included in any electoral roll for a period of 10 years.
  - Foreigners who had entered Assam before January 1, 1966, and been "ordinarily resident" in the State, would have all the rights and obligations of Indian citizens including the right to vote.

**Constitutional Provisions**

- Citizenship is listed in the union list; Thus, it comes under exclusive jurisdiction of parliament.
- The term 'Citizen' is not defined in the constitution, but Categories of persons who are entitled to citizenship are given in Part-2 (Articles 5-11).
- Article-11 empowers Parliament to make any provision with respect to the acquisition and termination of citizenship and all matters relating to it.

**About the National Register of Citizens (NRC)**

- NRC is the register containing names of Indian citizens.
- After conducting the Census of 1951, the National Register of Citizens (NRC) was prepared by recording particulars of all the persons enumerated during the 1951 Census.
- The Citizenship (Registration of Citizens and Issue of National Identity Cards) Rules, 2003 called for the updating of the NRC
- It has been implemented for the state of Assam starting in 2013–2014.
- The Government of India announced plans to implement it for the rest of the country in 2021, but it has not yet been implemented.



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## CORRUPTION PERCEPTION INDEX

**Context**

Recently, Corruption perception index, 2022 published by transparency international.

**About CORRUPTION PERCEPTION INDEX, 2022**

- The 2022 Corruption Perceptions Index (CPI) shows that most countries are failing to stop corruption.
- The CPI ranks 180 countries and territories around the world by their perceived levels of public sector corruption, scoring on a scale of 0 (highly corrupt) to 100 (very clean).
- Global peace has been deteriorating for 15 years. Corruption has been both a key cause and result of this.
- High CPI scores play a role in the threats that corruption poses to global security.
- The Index ranks 180 countries and territories by their perceived levels of public sector corruption according to experts and businesspeople.
    - More than two-thirds of countries (68 per cent) score below 50 and the average global score remains unchanged at 43.
    - **Denmark** heads the ranking, with a score of 90. **Finland** and **New Zealand** follow closely with a score of 87.
    - On the flip side, countries experiencing conflict or where basic personal and political freedoms are highly restricted tend to earn the lowest marks. This year, **Somalia** (12), **Syria** (13), and **South Sudan** (13) are at the bottom of the index.
    - India ranked 85$^{th}$ out of 180 countries.

**Transparency international**

- Transparency International is a global movement working in over 100 countries to end the injustice of corruption.
- It is independent, non-governmental, not-for-profit and work with like-minded partners across the world to end the injustice of corruption.
- Its mission is to stop corruption and promote transparency, accountability and integrity at all levels and across all sectors of society.

## UNIQUE IDENTIFICATION AUTHORITY OF INDIA (UIDAI)

**Context**

Recently, government has amended Aadhaar regulations, specifying that supporting documents need to be updated "at least once" by Aadhaar holders on completion of 10 years from enrolment date.

**About Amendment**

- The updation would ensure "continued accuracy" of Aadhaar-related information in the Central Identities Data Repository (CIDR).
- The UIDAI has developed a new feature of 'update document'. This feature can be accessed online through the my Aadhaar portal, and my Aadhaar app or residents can visit any Aadhaar enrolment centre to avail of the facility.
- The new feature permits Aadhaar number holders to revalidate details by updating the POI (containing name and photo) and POA (containing name and address) documents.

**About UIDAI**

- The Unique Identification Authority of India (UIDAI) is a statutory authority.
- It is established under the provisions of the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016 ("Aadhaar Act 2016") on 12 July 2016 by the Government of India.
- It comes under the Ministry of Electronics and Information Technology (MeitY).
- The UIDAI is mandated to assign a 12-digit unique identification (UID) number to all the residents of India.
- Under the Aadhaar Act 2016, UIDAI is responsible for Aadhaar enrolment and authentication, including operation and management of all stages of Aadhaar life cycle, developing the policy, procedure, and system for issuing Aadhaar numbers to individuals and perform authentication and **the security** of identity information and authentication records of individuals.
- **Vision:** Its vision is to empower residents of India with a unique identity and a digital platform to authenticate anytime, anywhere.



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- **Composition:** The Unique Identification Authority of India (UIDAI) consists of a Chairperson, two part-time Members and the Chief Executive Officer (CEO), who is also the Member-Secretary of the Authority.

# Constitutional bodies

## National Commission for Women

**Context**

Recently, Prime Minister said that "In order to address the evolving needs of women in the country the National Commission for Women (NCW) must broaden its ambit.

**About National Women Commission**

The National Commission for Women was set up as **statutory body in January 1992** under **the National Commission for Women Act, 1990** (Act No. 20 of 1990 of Govt. of India) to:

- review the Constitutional and Legal safeguards for women;
- recommend remedial legislative measures;
- facilitate redressal of grievances and
- Advise the Government on all policy matters affecting women.

**Composition**

- The commission consists of a chairperson, a member secretary and five other members.
- The chairperson of the NCW **is nominated by the Central Government**. The Central Government also nominates **the member secretary**.
- **The member secretary** should be an expert in **the field of management**. He or she is an officer or organization who is a member. The five members nominated by the Central Government should be individuals **with ability, standing and integrity**.
- They should have experience in law, legislation, management, women voluntary organization, economic social development and so on.

**Constitutional status**

- The Constitution does not contain any provision specifically made to favor women as such. Though **Art. 15 (3), Art. 21 and Art. 14** are in favor of women they are more general in nature and provide for making any special provisions for women, while they are not in themselves such provisions.

## Reconstitution of Inter-State Council

**Context**

The Centre has reconstituted the Inter-State Council, which works to promote cooperative federalism.

**About Inter-State Council**

- **Article 263** contemplates the establishment of an Inter-State Council to effect coordination between the states and between Centre and states.
- Therefore**, the President** can establish such a council if at any time it appears to him that the public interest would be served by its establishment.
- President can define the **nature of duties** to be performed by such a council and its **organization and procedure.**
- Even though the president is empowered to define the duties of an inter-state council, Article263 specifies the duties that can be assigned to it in the following manner:
- Enquiring into and advising upon disputes which may arise between states;



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- Investigating and discussing subjects in which the states or the Centre and the states have a common interest; and
- Making recommendations upon any such subject and particularly for the better coordination of policy and action on it.

**Composition of the newly constituted Council**

- Headed by the PM, the Council will comprise six Union ministers, besides the Chief Ministers of the 28 states and UTs with a legislature, and administrators of UTs without a legislature.
- It will also have 10 Union ministers as permanent invitees.
- The government has also reconstituted the standing committee of the Council, with Home Minister as its chairman.

**Mandate of the Inter-State Council**

- The Council may meet **at least thrice in a year**. Its meetings are held in camera and all questions are decided by consensus.
- There is also a **Standing Committee of the Council**. It was set up in 1996 for continuous Consultation and processing of matters for the consideration of the Council. It consists of the following members:
- Union Home Minister as the Chairman
- Six Union Cabinet Ministers
- Ten Chief Ministers
- The Council is assisted by a secretariat called the **Inter-State Council Secretariat.** This secretariat was set-up in 1991 and is headed by a secretary to the Government of India. Since2011, it is also functioning as the **secretariat of the Zonal Councils**.

# Constitutional & Democratic issues

## Anti-Doping Act (ADA)

**Context**

The government of India has recently enacted the Anti-Doping Act, 2022 which is a mark of India's commitment to the anti-doping movement.

**About doping**

- Doping refers to the use of banned substances in competitive sports**. Performance-enhancing drugs (PEDs)** are another term used for drugs used by athletes to improve their athletic performance.
- In general, the following classes of drugs are banned: **Street drugs, stimulants, anabolic steroids, peptide hormones** (i.e., human growth hormone [hGH]), **alcohol and beta blockers** (for archery and rifle shooting only**), diuretics, beta-2 agonists, anti-estrogens, blood doping,** and **gene manipulation.**
- National Anti-Doping Agency becomes a statutory body, headed by a director general appointed by the central government.
- Agency will plan, implement and monitor anti-doping activities. It will investigate anti-doping rules and promote anti-doping research.
- **National Dope Testing Laboratory** will now be the **principal dope testing laboratory**. More labs can be established by the central government.

**About NADA**

- **National Anti-Doping Agency (NADA)** was set up as a registered society under **the Societies Registration Act of 1860** on November 24, 2005, with a mandate for Dope-free sports in India.
- National Anti-Doping Agency is mandated for Dope-free sports in India



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## Issues with the Right to Information (RTI)

**Context**

According to a report by Satark Nagrik Sangathan, the backlog of appeals or complaints is steadily increasing in commissions every year.

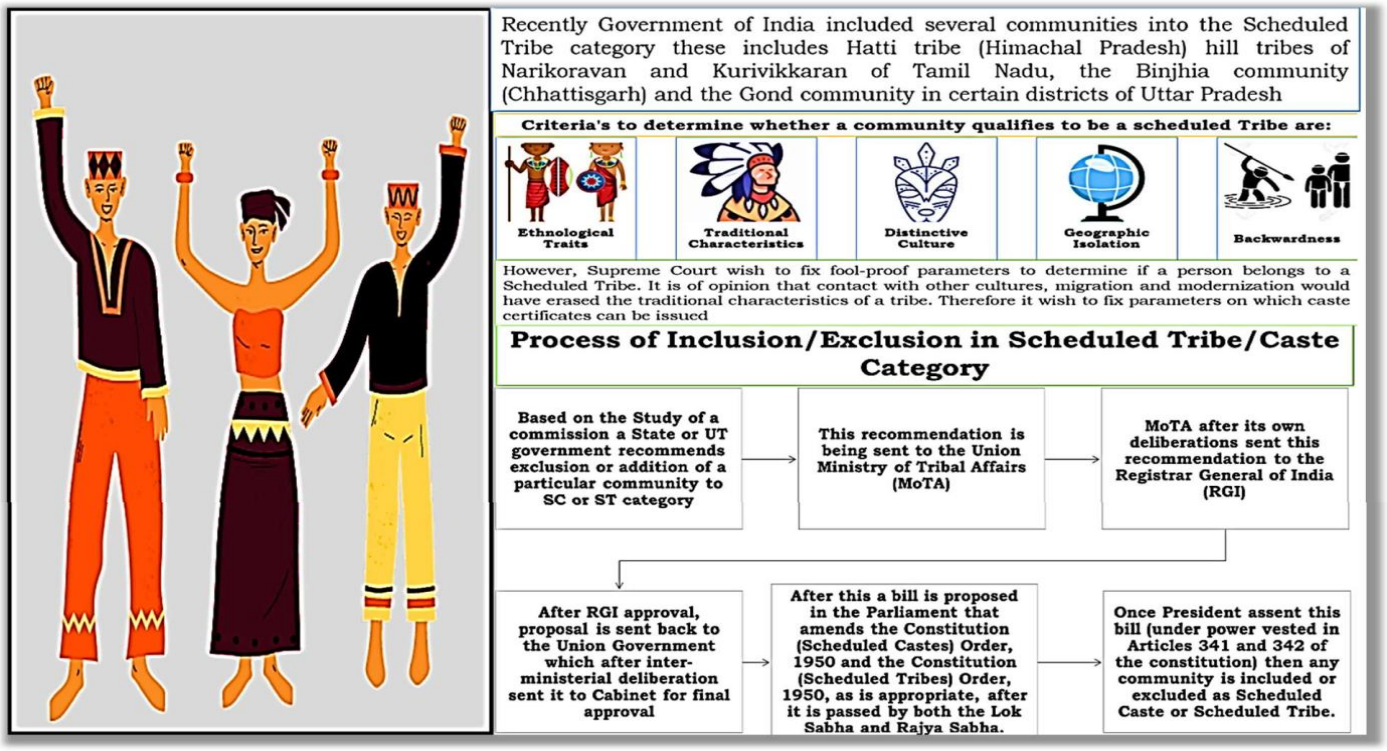
**About RTI**

- RTI was enacted in 2005 to empower citizens and promotes transparency and accountability in governance. It makes democracy in India more people-oriented.
- RTI provides rules and procedures for access to information from a public authority. Those agencies are required to reply expeditiously or **within 30 days.**

**About Recent Amendments**

- **RTI (Amendment) Act, 2019** was criticized on grounds of diluting the law and giving more powers to the central government.
- The amended act provided that the **Chief Information Commissioner** and **an Information Commissioner of Centre and States** shall hold office for such term as prescribed by the Central Government. Before this, their term **was fixed for 5 years**.
- The same act provided that the **salary, allowances, and other service conditions** of the Chief Information Commissioner and an Information Commissioner (of Centre as well as States)shall be such as prescribed by the **Central Government.**
- Before this amendment, the salary, allowances, and other service conditions of the Chief Information Commissioner were similar to those of the **Chief Election Commissioner** and that of an Information Commissioner were similar to those of an **Election Commissioner**(State Election Commissioners in the case of States)

## Process of Inclusion/Exclusion in Scheduled Tribe/Caste Category



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## National Emblem of India

### Context

Recently, the Prime Minister of India unveiled a national emblem atop the new Parliament House coming up as part of the Central Vista Project.

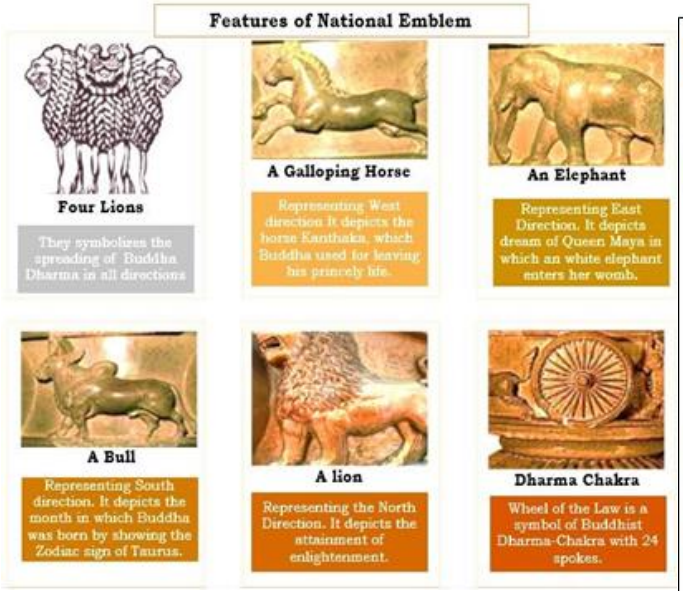
### Adoption by Constituent Assembly

- Constituent Assembly adopted Sarnath pillar as the national emblem as the pillar epitomized the power, courage and confidence of the free nation.
- On January 26, 1950, the Lion Capital of Asoka at Sarnath officially became the national emblem of India. However, the bell**- shaped lotus** has been omitted.

**Legal Provision**

- State Emblem of India (Prohibition of Improper Use) Act 2005 and the State Emblem of India (Regulation of Use) Rules 2007 allows for the use of National emblem.
- It also provides punishment for any unauthorized use with punishment for imprisonment of up to 2 years or a fine up toRs5000ifsomeoneviolatesthelaw.

- The words Satyameva Jayate from **Mundaka Upanishad**, meaning '**Truth Alone Triumphs'**, are inscribed below the abacus in **Devanagari Script.**
- The emblem represents the seal of the Republic of India.
- It was designed by **Dinanath Bhargava** who observed lions at the zoo from close quarters for months and then finalized it.



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## Usage of National Emblem

| | |
|---|---|
| **Official Use** | • On Letterheads of governments and its agencies.<br>• On the Currency of India<br>• On the Passports of India |
| **National Flag** | • The Ashoka Chakra |
| **Buildings** | • Rashtrapati Bhawan<br>• Parliament House<br>• Supreme Court (with a different moto- Yato Dharamstato Jaya)<br>• High Courts<br>• Central Secretariat<br>• Secretariat Buildings of States and Union Territories<br>• Raj Bhawan/Raj Niwas<br>• State Legislature |
| **Diplomatic** | • Premises of India's Diplomatic Mission abroad<br>• Residence of Heads of Missions in the countries of their accreditation<br>• At the entrance doors of buildings occupied by Indian Consulates abroad |



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## Suspension of Member of Parliament

### Causes of Disruption

- Paucity of time available for MPs to raise issues.
- For Political and publicity reason.
- Retaliatory postures of treasury benches along with government unresponsiveness.
- Immediate actions is often not taken against member who interrupt proceedings.

### Terms of Suspension

- Suspended member looses right to enter chamber or meetings of committee.
- Suspended member cannot give notice for discussion.
- Suspended member cannot get a reply to his questions.
- Suspended member can be suspended for maximum of the remainder of the session.

### Rules of Procedure and Conduct:

**Rule 373:** Speaker directs the member to withdraw immediately and member had to do it forthwith and will remain absent during the remainder of the day's sitting.

**Rule 374:** Speaker can suspend a member for a period not exceeding the remainder of the session if member abuses the rules of the house willfully.

**Rule 374A:** Speaker, In case found member in gross violation can suspend member of the house for five consecutive sittings or the remainder of the session, whichever is less.

**Rule 255** (Rajya Sabha): Chairman suspend any member whose conduct in his opinion was not right or was disorderly.

**Rule 256** (Rajya Sabha): Chairman can suspend a member from the service of the Council for a period not exceeding the remainder of the Session.

## Unparliamentary Words

### Rules for Declaration of unparliamentary words

- Its up to presiding officer of the house to decide which words are unparliamentary. They keep out such words from the parliament records (under rule 380 and 381 of Procedure and Conduct of Business in Lok Sabha )
- Presiding officer uses references from various sources from debates of pre-independence assemblies. Commonwealth parliaments and previous Lok Sabha and Rajya Sabha.
- In 2009 Lok Sabha secretariat bought a book called unparliamentary expressions.
- Though MPs are not liable to any proceedings in any court in respect of anything said or any vote given by him in Parliament (Article 105) Nevertheless they are bound by the discipline of the Rules of Parliament.

### Procedure of preparation of list

- Whenever a MP uses an indecent word which might be considered unparliamentary, Reporting section sends it to presiding officer with a recommendation to expunge them citing rules.
- Then a compiled list of such words are sent to presiding officer office and Sansad TV and the editorial service for information.
- From the editorial service a list prepared of all these expressions made in Parliament, to be released as the new addition to the existing list.

# Governance

## Uniform Civil Code

**Context**

Government of Uttarakhand will go ahead with the implementation of Uniform Civil Code (UCC) and had urged other states to follow the same path.

**About UCC**

- The Uniform Civil Code (UCC) calls for the **formulation of one law for India**, which would be applicable to all religious communities in matters such as marriage, divorce, inheritance, adoption.

**Provisions for UCC**

- **"Article 44" of the Indian Constitution** states that "the State shall endeavour to secure for the citizens a uniform civil code (UCC) throughout the territory of India."
- The desirability of a uniform civil code is consistent with **human rights** and the principles of **equality, fairness and justice**.
- UCC comes under **non justiciable** part of constitution and also **Personal laws** come under **Concurrent List.**

**Current Trend**

- Different religious communities in India are currently governed by a **system of personal laws,** which have been **codified over the years** through **various pieces of legislation.**



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- For example**, Hindu personal law** is codified in four bills:
  - The Hindu Marriage Act,
  - Hindu Succession Act,
  - Hindu Minority and Guardianship Act, and
  - Hindu Adoptions and Maintenance Act.
- The term '**Hindu'** also includes **Sikhs, Jains and Buddhists** for the purpose of these laws.
- **Muslim personal law** is not codified based on their religious texts, though certain aspects of these are expressly recognized in India in acts such as **the Shariat Application Act** and **Dissolution of Muslim Marriages Act.**
- Christian marriages and divorces are governed by the Indian Christian Marriages Act and the Indian Divorce Act, while Zoroastrians are subject to the Parsi Marriage and Divorce Act.
- **Goa** is, at present, the **only state** in India with a uniform civil code.
- **The Portuguese Civil Code of 1867**, which continues to be implemented after India integrated the territory in 1961, applies to all Goans, irrespective of their religious or ethnic community. There are more '**secular' laws**, which disregard religion altogether, such as
  - The Special Marriage Act, under which Inter-religion marriages take place, and
  - The Guardians and Wards Act, which establishes the rights and duties of guardians.

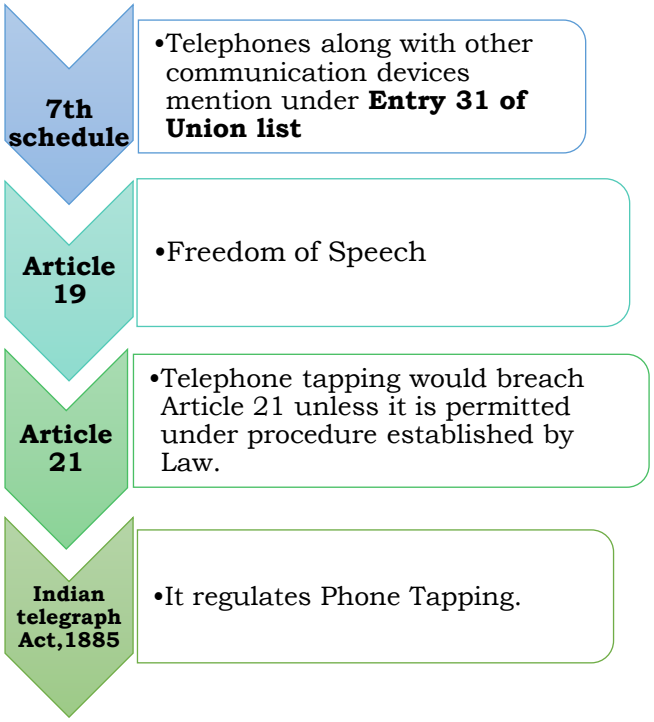
## Phone Tapping in India

**Context**

The Mumbai Police investigating the alleged phone tapping case against a senior Indian Police Service (IPS) officer submitted a charge sheet before the magistrate at Esplanade court.

**About Phone tapping**

- Definition: Telephone tapping is the monitoring of telephone and Internet-based conversations by a third party, often by covert or illegal means.
- Legal wiretapping by a government agency is called lawful interception.
- Word '**phone tapping'** also means **wiretapping** or **line bugging** or interception of the phone.
- It was first initiated in **USA** in **1890's.**
- Both, **Central and State Governments** have a right to tap phones.
- In the states, **police** have the powers to tap phones.



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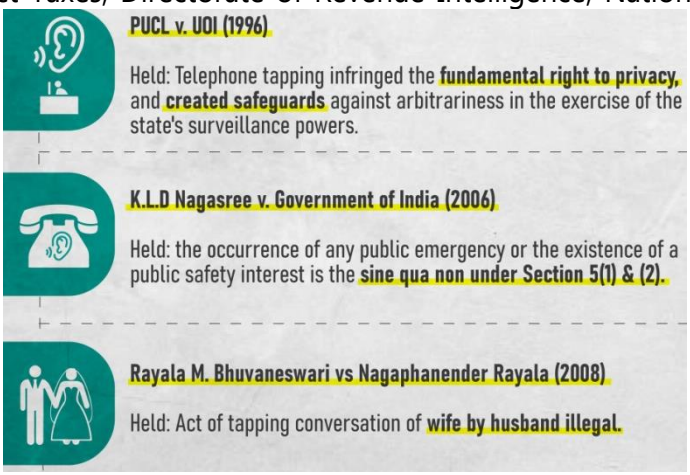
- At the Centre, 10 agencies are authorized to do so: Intelligence Bureau, CBI, Enforcement Directorate, Narcotics Control Bureau, Central Board of Direct Taxes, Directorate of Revenue Intelligence, National Investigation Agency, R&AW, Directorate of Signal Intelligence, and the Delhi Police Commissioner.
- Tapping by any other agency would be considered illegal.
- As per Rule 419A of the Indian, Telegraph (Amendment) Rules, 2007, Orders could be issued by the Secretary in the Ministry of Home Affairs in both centre and state.
- The order has to convey to the service provider in **writing**, only then can the tapping begin.
- However, in **exceptional cases** the order may be issued by **lower authorities also**.




- Such order has to be communicated to competent authority **within a specified time period**.

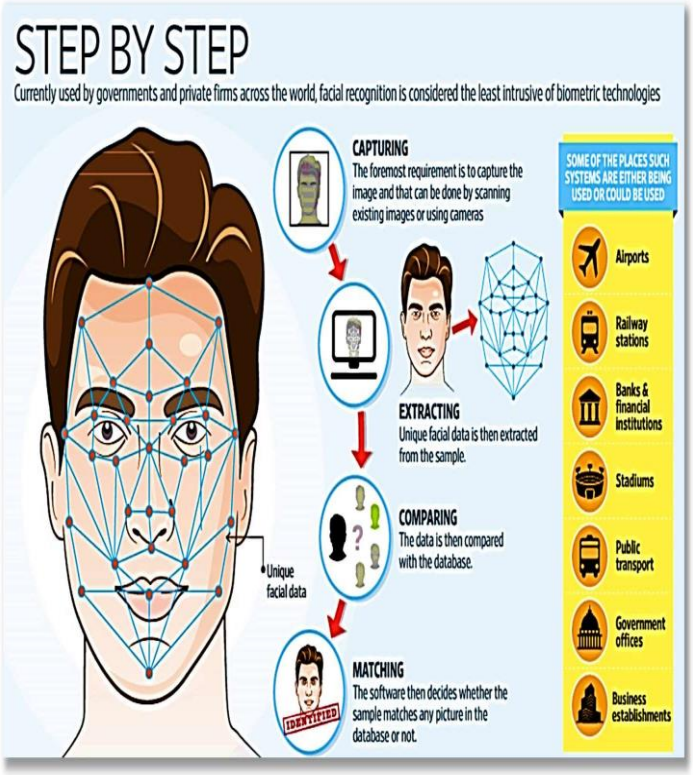
## Facial Recognition Technology and Right Issues

### Context

Internet Freedom foundation in an RTI response from Delhi Police has found out that the positive result for Delhi Police in establishment of a criminal identity is minimum 80% match. This raised serious concerns as Facial Recognition Technology is relatively a nascent technology in criminal identification in India.

### About Facial Recognition Technology (FRT)

- FRT used distinctive facial features to create a **biometric identity** of an individual. Using algorithms, FRT creates a **digital map of the face**.
- It is an ever-evolving technology with recent developments including **3D contours** of a face to recognize skin patterns.
- FRT database contains features of a face which then can be integrated with any software based on the application such as **banking service, security service** etc.
- Whenever a face is captured in any CCTV network the software compares it with the existing database and use **Artificial Intelligence technology**, for pattern-finding and matching.
- It is using **Section 3 and 4 of the Identification of Prisoners Act, 1920**, (replaced by the Criminal Procedure (Identification) Act, 2022) for matching the photographs/videos against photographs collected.



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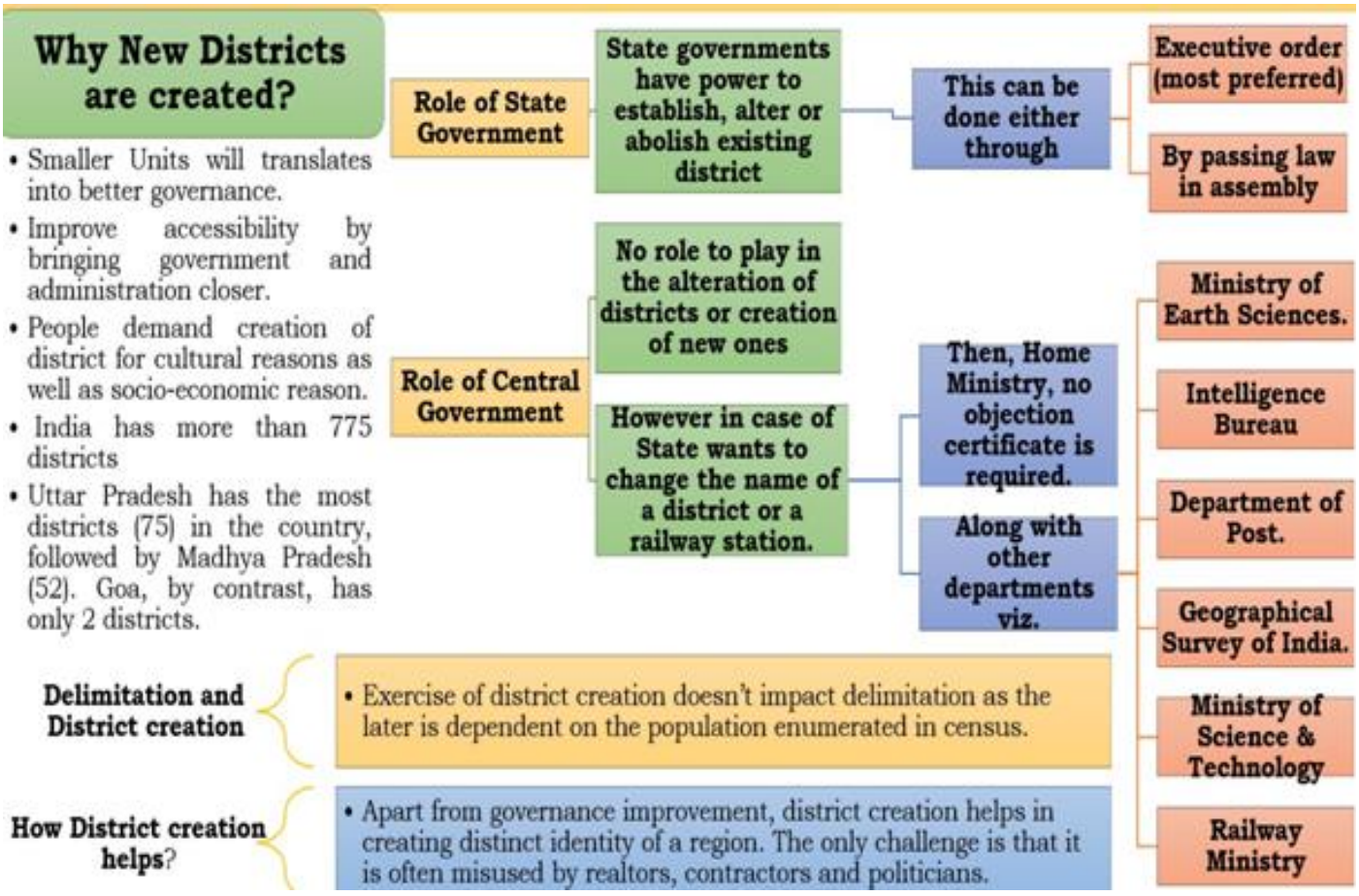
**National Automated Fingerprint Identification System (NAFIS)**

- It's a **central government scheme** under which work stations were set up in every state for identification through fingerprint and palm print database and matching system.
- It aims to establish a robust online searchable **national database of Finger prints** from all states and UTs.
- NAFIS solution is implemented and managed by the **Central Fingerprint Bureau** (CFPB) of **National Crime Records Bureau**.
- It assigns a **unique 10-digit National Fingerprint Number** for each criminal, based on biometrics. This identity remains linked to criminal and used in all the FIRs registered against him.
- The **first two digits of the ID** will be the **state code** of the state where the criminal registered, followed by a sequence number.

## Creating a New District in India




# Miscellaneous

## Kuki-Chin Refugees

**Context**

Recently, fearing security threats from Bangladesh security forces many Kuki-Chin refugees entered the state of Mizoram. The state is providing all the support and relief as per its capacity

**India's Refugee Policy**

- There is **no specific legislation** in India that deals with the problem of refugees. India is also **not a party to the 1951 Refugee Convention** and its **1967 Protocol.**



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- Despite this, India follows the **principle of Vasudev Kutumbkam** and has a stellar record on the issue of refugee protection.

**About Kuki-Chin**

- They belong to **Chittagong Hill Tract (CHT)** Area in Bangladesh. The area sprawls over more than 13,000 sq km of the **Khagrachari, Rangamati**, and **Bandarban** districts of southeastern Bangladesh.
- It borders **Mizoram to the east, Tripura to the north**, and **Myanmar to the south** and **southeast.** A significant population of CHT is tribal, and culturally and ethnically different from the majority Muslim Bangladeshis.
- They have ethnic links with tribal populations in the adjacent areas of India, mainly in Mizoram.

**Refugees in India**

- Partition refugees from Pakistan in 1947.
- Tibetan refugees that arrived in 1959.
- Chakma and Hajong from present day Bangladesh in early 1960s.
- Other Bangladeshi refugees in 1965 and 1971.
- Sri Lankan Tamil refugees from the 1980s.
- Rohingya refugees from Myanmar, 2022

**Refugee's vs. Migrant's**

- **Refugees** are people who face serious threat to their life, physical integrity or freedom in their country of origin. This might be because they face persecution, armed conflict, violence or serious public disorder. There are specific grounds which makes a person a refugee.
- **Migrants** are people who leave their country for better work opportunities or to study or join their family settled in abroad. There is no internationally accepted legal definition of a migrant.

## Criminality under NDPS Act

**Context**

Karnataka High Court in its judgment placed Bhang outside the purview of the Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985.

**About Cannabis**

- They are produced from a flowering plant that is used to make hashish (from resin), ganja (leaves) and bhang (leaves and seeds).Cannabis has two components:-
- **HC (Tetra Hydro cannabinoid):** It produces the psychoactive effects such as euphoria, relaxation and heightened sensory experiences.
- **CBD (Cannabinoid):** It has a few psychoactive effects and has anti-inflammatory and Neuro Protective effects.
- Taxation on cannabis was started by British parliament in 1798 to reduce their consumptions. **Indian Hemp Drugs Commission (IHDC**) of 1894 advised against the criminalization of cannabis.
- Post- Independence India enacted **Narcotic Drugs and Psychotropic Substances** (NDPS) Act, 1985, in line with the United Nations Single Convention on Narcotic Drugs, 1961.
- Cultivation of Cannabis is only permitted in **Uttarakhand and Jammu & Kashmir** through a state license. Further **poppy cultivation** in India is regulated by the **Central Board of Narcotics (CBN)** and permitted only in parts of **MP, UP & Rajasthan**.

**NDPS Act 1985**

- **Section 8** of the NDPS Act prohibits the cultivation of any cannabis plant for reasons other than medical and scientific purposes.
- **Section 20 (b**) of the NDPS Act prescribes the punishment for use of cannabis. It is based on the quantity of the cannabis seized. Minimum quantity for any punishment under the section is 100gm.
- **Section 64** provides immunity from prosecution to addicts volunteering for treatment.

**Initiatives to Control Drug Addiction in India**

- **NCORD: Narco-Coordination Centre** (2016) was established to provide financial assistance to states for controlling **Narco-menace.**
- An online database of offenders was created known as Seizure Information Management System.



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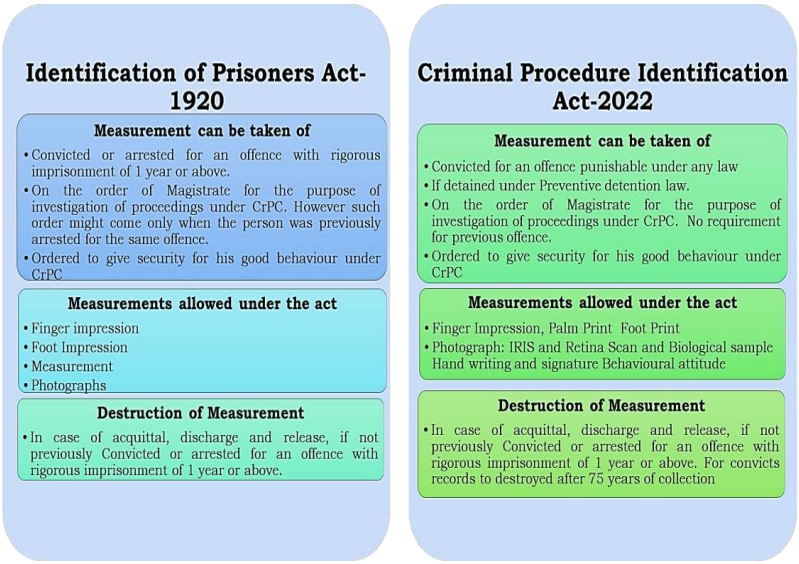
- **Ministry of Health and Family** welfare started **Project Sunrise** in 2016 to tackle growing HIV cases in north-east due to drug abuse.
- Ministry of Social Justice and Empowerment had started:
- **National Drug Abuse Survey** which measures trends of drug abuse in India. In this it is supported by AIIMS.
- Nasha Mukta Bharat Abhiyan

## Criminal Procedure (Identification) Act, 2022

### Context

Criminal Procedure (Identification) Act, 2022 has come into force and will replace the Identification of Prisoners Act, 1920. It authorizes police officers to take measurements of people convicted, arrested or facing trial in criminal cases.




### About CrPC

- **Code of Criminal Procedure (CrPC),** 1973 is the primary legislation regarding the procedural aspects of criminal law.
- **Section 53 or 53A** of the CrPC allows police to collect data.
- In State of UP vs. Ram Babu Misra case SC called for amendment for the CrPC and expands the scope of measurement.
- **Law commission** also called for several amendments in the CrPC act and asserted that there is a need to recognize more kinds of "measurements" that can be used by law enforcement agencies for investigation.
- **Criminal Procedure (Identification) Act, 2022** will now act as a **Legal sanction** to the police to take **physical and biological** samples of convicts as well as those accused of crimes.

## Protection Of Monuments In India

### Context

The Ministry of Culture recently submitted its report titled 'Issues relating to Untraceable Monuments and Protection of Monuments in India' to the Parliamentary Standing Committee on Transport, Tourism and Culture in which it told Parliament that 50 of India's 3,693 centrally protected monuments have gone missing.

### About Monuments in India

- India ranks **sixth** in the world with **40 UNESCO World Heritage Sites** of which **32 are cultural sites**. These sites are a reminder of the past, acting as the guardian of Indian culture.
- They present a combination of different styles and influences of various dynasties, religions, traditions and customs and vary from rock cut architecture, temple architecture, tombs, forts, palaces, minars, stupas to the monument complexes at **Hampi, Mahabulipuram and Khajuraho** representing a very wide range and diversity.
- They directly contribute to the economy by attracting tourists. The iconic **Taj Mahal, Ajanta and Ellora caves, Konark Sun Temple**, etc. are on all tourists bucket list.
- There are countless masterpieces which are not well known with even locals being unaware of their importance.



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- It is very important to ensure the protection of historical monuments across the country and the sameis also reflected in **Article 49** of the Constitution of India which states the following:
- **Protection of monuments and places and objects of national importance**: It shall be the obligation of the State to protect every monument or place or object of artistic or historic interest, [declared by or under law made by Parliament] to be of national importance, from spoliation, disfigurement, destruction, removal, disposal or export.

**AMASR Act**

- **The Ancient Monuments and Archaeological Sites and Remains (AMASR)** Act regulates the preservation of monuments and archaeological sites of national importance.
- The Act protects monuments and sites of historical significance that are more than 100 years old monument includes temples, cemeteries, inscriptions, tombs, forts, palaces, step-wells, rock-cut caves, and even objects like cannons.
- The Archaeological Survey of India (ASI) which works under the Ministry of Culture, functions under this Act.
- According to the provisions of AMASR Act, ASI officials are supposed to regularly inspect the monuments to assess their condition.
- Apart from various conservation and preservation operations, ASI officials can also file police complaints, issue show cause notices for the removal of encroachments, and communicate to the local administration the need for demolition of encroachments.



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# ART & CULTURE

## Art and Architecture

### Monuments of National Importance: Sannati

**News Excerpt**

The Archaeological Survey of India has taken up conservation work at this important Buddhist site near Kalaburagi.

- This ancient Buddhist site is located on the bank of Bhima river near Kanaganahalli (forming part of Sannati site) in Kalaburagi district.
- Sannati and Kanaganahalli were small and ordinary villages on the bank of Bhima till 1986 when the Kali temple at the Chandralamba temple complex in Sannati collapsed.
- In the process of clearing the debris, they discovered an Ashokan edict that put the villages on the world map and opened new avenues of historical research on Mauryan Emperor Ashoka and Buddhism in its early years.

**Excavation Finds**

- The Kanaganahalli excavation opened up many marvels. For example, an 'abandoned well' in the eyes of local villagers turned out to be the magnificent Maha Stupa, which was referred to as Adholoka Maha Chaitya (the Great Stupa of the netherworlds) in the inscriptions and, more significantly, the stone-portrait of Emperor Ashoka, surrounded by his queens and female attendants.
- While the Stupa is believed to be one of the largest of its time, the stone-portrait is considered to be the only surviving image of the Mauryan Emperor which had the inscription 'Raya Asoko' in Brahmi on it.
- The Maha Stupa is believed to have been developed in three constructional phases – Maurya, Early Satvahanas and Later Satvahanas periods stretching from 3rd Century B.C. to 3rd Century A.D.
- The ASI site in Sannati is worth being a UNESCO World Heritage Site. There is a preparation a detailed report on the historical importance of the site to submit to UNESCO.

### Monument of National Importance- Mangarh hillock

**News Excerpt**

A team from National Monuments Authority submits report to declare **Mangarh hillock in Rajasthan** as a monument of National Importance as tribute to 1500 Bhil tribal freedom fighters.

- Mangarh, the hillock in Banswara District situated at the Gujarat-Rajasthan border, is a site of a tribal uprising where a massacre of over 1500 Bhil tribal freedom fighters took place in 1913.
- The place is also known as the **Adivasi Jallianwala**, and there has been a demand to build a memorial.
- On November 17, 1913, British forces opened fire on tribals gathered at the site who were holding a meeting in protest, led by a leader from the community Govind Guru, killing over 1,500.

**Who are the Bhils?**

- Bhil, an ethnic group of some 12.6 million people in western India.
- Historically, many Bhil communities have been known for rugged independence, and some have been associated with banditry.
- The Bhil are distributed widely in upland areas of several states, **from Ajmer in central Rajasthan on the north, to Thane in western Maharashtra on the south**, to Indore in western Madhya Pradesh on the east, and to Surat in south-eastern Gujarat on the west.
- Nearly all of the Bhil engage in agriculture, some using the **slash-and-burn (jhum) method but** most employing the plough.

### Buddhist cave in bandhavgarh forest area.

In a major exploration, the Archaeological Survey of India has unraveled remarkable archaeological remains of temples, caves, monasteries, stupas, sculptures, Brahmi inscriptions, and scattered remains in Madhya Pradesh's **Bandhavgarh Forest Reserve**.



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**About The Exploration**

- The Archaeological Survey of India has explored 26 ancient temples/relics of the Kalachuri period, 26 caves which are mostly Buddhist, 2 monasteries, 2 stupas, 24 Brahmi inscriptions, 46 sculptures, 20 scattered remains, and 19 water structures recorded.
- Among the 46 sculptures, also is a Varah sculpture which is one of the largest. The Varaha sculpture is among the many monolithic sculptures of the 10 incarnations of Lord Vishnu that were discovered by an ASI at the national park earlier. The exploration took place 84 years after the last such effort in 1938.
- The ASI team discovered 26 mostly Buddhist caves dating back to the 2nd and 5th centuries. The caves and some of their remains had 'Chaitya' (rounded) doors and stone beds typical of Mahayana Buddhism sites.
- The ASI team found 24 inscriptions in Brahmi text, all dating back to the 2nd to 5th centuries. The inscriptions mention sites such as Mathura and Kaushambi, Pavata, Vejabharada, and Sapatanaairikaa. The period of the findings covered the reigns of the kings Shri Bhimsena, Maharaja Pothasiri, and Maharaja Bhattadeva.
- The remains of 26 temples which dates back to the **Kalachuri period between the 9th-11th** centuries were also found.
- Two Saiva mutts have also been documented. The Kalachuri dynasty, which spread over parts of Gujarat, Maharashtra, and Madhya Pradesh, is also associated with the earliest Ellora and Elephanta cave monuments.
- Some remains of the Gupta period, such as door jambs and carvings in caves, have also been found.

**Kalachuri Temple Architecture**

Kalachuri Temple Architecture were mainly based on Nagara Style of Temple Architecture. Such temples have some common features such as:

- Temple is constructed on a high platform which is accessible through stairs.
- They don't have elaborate boundary wall or gateways
- Garibhagrah is always lies below the tallest tower.
- Amalaka or Kalash installed on Shikhara
- Shape of Shikhara decides the subdivision under Nagara Style of Temple Architecture.
- There are three schools of Nagara Style which are Odisha, Chandel and Solanki.

**Some unique features of Kalachuri Temple Architecture are:**

- Vrittasamsthanaka (Circular Sanctum Sanctorum) and Sunken Sanctum Sanctorum
- They are crowned with pancharathshikhara and had pyramidal mandap

**Buddhist Caves Architecture-Key Features**

- It included sectionalizing areas for specific purposes like the viharas and chaityas and embellishing the areas with fine carvings, reliefs, and paintings. Some caves also included elaborate facades, arches, and pillars.
- The Buddhist chaityas and viharas stand as examples of early cave structures. While the viharas were residential areas of the monks, the congregational worship was conducted in the cave shrines known as chaityas.
- A pillared circular chamber in the garbhagriha hewn out of rock enabled one to circumambulate around the stupa.
- Buddhist architecture saw a second phase that started in the 5th century AD. The most prominent aspect of architectural design that emerged during this period was the introduction of the image of Lord Buddha.
- Huge statues of Lord Buddha in various postures as also Jataka stories and deities associated with Buddhism in the form of paintings and carvings found a place on the stupas. Sculptures associated with Buddhism were also introduced in the viharas.

## Coins with Religious Symbols

**News Excerpt**

Recent political discourse in the country pointed towards the printing of God and Goddess on the Indian rupee. The practice of using images of God and goddesses is age-old in India. The Kushans, who hailed from the Central Asian region and ruled till the 3rd century AD, were the first to use the image of Goddess Lakshmi on their coins, along with Ardochsho, the Iranic Goddess of wealth.

**Coins with a religious depiction in India**



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| Dynasty | Religious symbol |
|---|---|
| **Gupta Dynasty** | Images of Garuda, Lord Vishnu's bird mount, or his consort Goddess Lakshmi. |
| **Pallavas** | A humped bull represents Nandi, the mount of Lord Shiva and on its reverse is the wheel, which symbolized the chakravartin or universal monarch. But it is also a symbol of Lord Vishnu. |
| **Kushans** | Oesho (Shiva), moon deity Miro and Buddha in their coinage. |
| **French and Dutch** | Vishnu and Kali. |
| **Britishers** | The Three Swamy Pagoda, which depicts Lord Balaji flanked by Sridevi and Bhudevi on either side Venkatesa (Star/Single Swami Pagoda), Hanuman, Goddess Chamundi and the stylized Lion-Boar motifs of the Viraraya Panam. |
| **Mohammed bin Sam and Hyder Ali** | Shiva and Goddess Lakshmi; Siva-Parvathi motif of the Ikkeri Nayakas. |
| **Gurhara Pratihara** | Varaha Avatara |
| **Greek Governor and Sakas** | Shiva and Vishnu |
| **Panchalas** | Agni, Naga, Indra, and Shiva |
| **Kalachuri** | Seated Goddess Laxmi |
| **The Chandellas of Jejakabhukti** | Hanuman and Laxmi |
| **Yadavas** | Hanuman and Laxmi, Hanuman and Garuda, and the attributes conch and disc of Vishnu and boar motif symbolizing Vishnu's incarnation. |
| **Gahadavalas** | Laxmi |
| **Chalukya** | Shiva Linga, Hanuman, and Garuda and the attributes conch and disc of Vishnu and boar motif symbolizing Vishnu's incarnation. |
| **Kadambas** | Chakra which is associated with Vishnu. |
| ***Kakatiyas*** | Hanuman and Garuda and the attributes conch and disc of Vishnu and boar motif symbolizing Vishnu's incarnation. |
| **Vijaynagar Empire** | Siva-Parvathi, Lakshmi-Narasimha, Lakshmi- Narayana, Balakrishna, Venkatesha, Rama-Sita-Lakshmana, Hanuman, Garuda, and their attributes such as conch, wheel, gandab heru nda, and Vis hnu- n ama. |
| **Harsha of Kashmir** | The Standing king and the Seated goddess. |
| **Chola** | The Standing king and the Seated goddess. |
| **Nawabs of Arcot** | Vishnu and his two consorts (Three Swami Pagoda), |
| **Mysore Wodeyars** | Vishnu and his two consorts (Three Swami Pagoda), |
| **Madurai Nayakas and the Siva- Gangas** | Ganesha and Shiva linga |
| **The Travancore Rajas** | Conch |
| **Hoyasalas** | Goddess Durga |



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## Ratnagiri Rock Art

- These sites in the Konkan region are among three Indian attractions that may soon become World Heritage Sites. The other two **include Jingkieng Jri, the living root bridge in Meghalaya, and Sri Veerabhadra Temple in Andhra Pradesh's Lepakshi.**
- The list mentions seven sites with petroglyphs in Ratnagiri district — Ukshi, Jambharun, Kasheli, Rundhe Tali, Devihsol, Barsu and Devache Gothane, one in Sindhudurg district –Kudopi village, and nine sites at Phansamal in Goa.
- Such pieces of art are called **"Katal shilpa"**.
- While the UNESCO dates these sites to be over 12,000 years old, some experts have claimed that these sites might go as far back as 20,000 years.
- Ratnagiri's rock art is evidence of the continued existence of human settlements from the Mesolithic (middle stone age) to the early historic era.
- The largest rock engraving or geoglyph in India is at Kasheli in the Ratnagiri district, which has a large figure of an elephant with dimensions of 18X13 metres.

The figures depicted in the geoglyphs include humans and animals such as deer, elephant, tiger, monkey, wild boar, rhinoceros, hippopotamus, cattle, pig, rabbit, and monkey. Moreover, they also include a high number of reptilian and amphibian creatures such as tortoises and alligators, aquatic animals such as sharks and sting rays, and birds like peacocks.

# Festivals and Events

## International Literature Festival-Unmesha

**News Excerpt**

Unmesha- an International Literature Festival which is largest in the country is organised in Shimla.

**Highlights of the event**

**The Ministry of Culture**, Government of India, and Sahitya Akademi organised Unmesha, an International Literature Festival in Shimla as part of Azadi ka Amrit Mahotsav celebrations, with the support of Department of Art and Culture, Government of Himachal Pradesh.

- The festival was organised in the heritage buildings, the Gaiety Heritage Cultural Complex and the Town Hall, on the Ridge, Shimla.
- Literature of any country represents and reflects culture of that country. Literary Festivals bring out these reflections and representations in all their colours.

That is the reason why the Ministry of Culture and Sahitya Akademi organized this Festival. With over 425 writers, poets, translators, critics and distinguished personalities from various walks of life from 15 countries including India, representing over 60 languages and 64 events.

## Kartavya path:

In his address to the nation on August 15, this year, Prime Minister emphasized the need to shed colonial symbols that still latch on to the national capital. Acting on similar lines, Rajpath renamed Kartavya Path (Path of duties) and Installed 28-foot statue of Netaji Subhash Chandra Bose under the Grand Canopy, which once had the statue of George V, are meant to represent that spirit.

**History of Rajpath (King's Way)**

- In 1911, the British Imperial Government changed the capital of the British Indian Empire from Calcutta to Delhi. The Emperor of India George V had visited Delhi during the Durbar of 1911 and formally proclaimed the decision to move the capital.



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- Sir Edwin Lutyens and Herbert Baker, the leading British architects of that time, constructed the new city of Delhi.
- They wanted to construct a modern imperial city centered around a "ceremonial axis" like London. They constructed the boulevard (artificial road) that connects Viceroy's Palace to India Gate and ends at Purana Qila. They have named the road as " Kings Way" to honor George V.
- The Viceroy's house (Rashtrapati Bhavan) was built on Raisina Hill overlooking the Kingsway till Purana Qilla. With a view of Jama Masjid to the left and Safdarjung's Tomb to the right, the view from the house of the Viceroy was to comprise all objects of historical interest in the city.
- After India attained its independence, the road was given its Hindi name, 'Rajpath'. Now it is renamed Kartavya Path (Path of duties).

**The concept of new Kartavya Path (Path of duties)**

- It symbolizes Public Ownership and Empowerment towards Nation.
- It will inspire everyone, who visits or crosses this road to fulfill their duties.
- Netaji's statue at such a prominent place, will surely remind people, sacrifices made by innumerable freedom fighters.

It will inspire people to take the challenges the nation is facing today, so that the tryst with destiny is redeemed.

## Bathukamma

Ministry of Culture organizes the Bathukamma festival- an annual 9 day celebration in Telangana and overlaps with navratra at Kartavya Path. Bathukamma means festival of life and it was celebrated to thank Goddess Parvati for her blessings for the crop harvest.

**About Bathukamma**

- The festival is celebrated with colourful exotic flowers of the region that symbolizes the collective spirit of the people of Telangana. A beautiful flower stack is arranged in a unique style in the shape of a temple, which usually consists of seasonal flowers, having medicinal values.
- Every year this festival is celebrated as per the Shathavahana calendar for nine days starting Bhadrapada Pournami (also known as Mahalaya Amavasya or Pitru Amavasya) till Durgashtami, usually in September–October of the Gregorian calendar.
- Bathukamma is followed by Boddemma, which is a 7-day festival. Boddemma festival marks the ending of Varsha Ruthu whereas the Bathukamma festival indicates the beginning of Sarad or Sharath Ruthu.

**Significance of Bathukamma Festival Celebration at Kartavya Path:**

- It is the festival for feminine felicitation and celebrates the spirit of womanhood.
- Kartavya Path is the symbol of National Unity and therefore celebration of the regional festival will not only showcase India's cultural tradition but also integrates India culturally.
- It also gives a boost to cultural tourism and with schemes like "Dekho Apna Desh" in place, the tourism sector will get a big boost.

## Kashi Tamil Sangamam

**News Excerpt**

Recently, Prime Minister inaugurated a month-long Kashi Tamil Sangamam at the amphitheater ground of the Banaras Hindu University in Varanasi.

**About Kashi Tamil Sangam**

- It is a month-long program to celebrate, reaffirm and rediscover the ancient links between Tamil Nadu and Kashi.
- Both Ancient cities are timeless centers of our culture and civilization. Kashi is the cultural capital of India whereas Tamil Nadu and Tamil culture are the centers of India's antiquity and pride.
- PM also released a book called 'Tirukkural' along with its translation into 13 languages
- More than 2500 delegates from Tamil Nadu will be visiting Kashi.



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- The program is in line with the Ek Bharat Shrestha Bharat program.
- The program aims to provide an opportunity for scholars, students, philosophers, traders, artisans, artists, etc. from the two regions to come together, share their knowledge, culture, and best practices, and learn from each other's experiences.

**How Sangam of Kashi and Tamil Nadu are connected?**

- Both Sanskrit and Tamil are one of the most ancient languages that existed.
- Both are sources of literature and art, are the birthplace and workplace of India's finest acharyas.
- 'Ek Bharat Shreshtha Bharat' is a dream of Mahakavi Bharathiar, a Tamil poet.
- The Kashi Kaam Koteshwar Panchayatan Mandir which is a Tamilian temple located on the ba nks of Harishchandra Ghat, and the two-hundred-year-old Kumaraswamy Matt and Markande Ashram on Kedar Ghat
- Swami Kumargurupar came to Kashi and got Kedareshwar Mandir was constructed in Kashi. Later, his disciples got Kashi Vishwanath temple constructed in Thanjavur on the banks of river Kaveri.
- Manonmaniyam Sundaranar wrote a Tamil State song and the connection of his guru with Kashi.

**Sangam Literature**

The Period between 3rd century BC TO 3RD century AD is termed as Sangam Literature termed as Sangam literature. But the well known scholar of Tamil literature and history Kamal Zvelebil suggests that the most acceptable period for creation of Sangam poems is between 100 BCE to 250 CE.

Sangam literature has different phases, third phase being the last. All the Sangam literature available to us now belong to the third Sangam period and Post Sangam period.

Some of the work of Sangam literature are: **Thirumurugatrupadai, Viracoliyam, Iraiyanar Ahapporul, Tolkapiam – Porulatikaram, Kalittohai – the first of the Eight Anthologies (Ettuttohai).**

# Art Forms

## Indian heritage textile.

UNESCO released a list of 50 exclusive and iconic heritage textile crafts of the country.

About UNESCO: UNESCO is a specialized agency of the United Nations aimed at promoting world peace and security through international cooperation in education, arts, sciences, and culture.

**About the List**

- The list was named Handmade for the 21st Century: Safeguarding Traditional Indian Textile.
- The list aims to bridge the gap of lack of proper inventory and documentation and has researched 50 selected textiles.
- UNESCO recommended the protection and revitalization of the textile crafts, which cover a broad spectrum of issues extending from policy to grass-root-based micro-interventions.

| Textile | Place |
|---|---|
| **Sungadi and Toda** | Tamil Nadu |
| **Himroo** | Hyderabad |
| **Bandhia tie and die weaving** | Sambalpur, Odisha |
| **Khes** | Panipat |
| **Chamba rumals** | Himachal Pradesh |
| **Thigma or wool tie and dye** | Ladakh |
| **Awadh Jamdani** | Varanasi |
| **Ilkal and Lambadi or Banjara embroidery** | Karnataka |
| **Sikalnayakanpet and Kalamkari** | Thanjavur |

**Textiles that are included in the list**

No textile practices from India have been included in the list so far and an inscription in the list would be due to recognition of the talent and diversity of the country's extraordinary weaving traditions.

## Dokra craftsmanship

Lal bazar part of city of Kolkata in the state of West Bengal has emerged as a centre for Dokra metalcraft. West Bengal was presented with the Geographical Indication (GI) tag for Dokra Art in 2018.

**Dokra Metalcraft:** *Dokra* art is an ancient tradition (practiced by the Ojha metalsmiths), with a documented history of about 5,000 years, practised in the states of West Bengal, Jharkhand, Odisha, Madhya Pradesh, etc.

- Two places are famous in West Bengal for dokra work — Bikna in Bankura and Dariyapur in Bardhaman.



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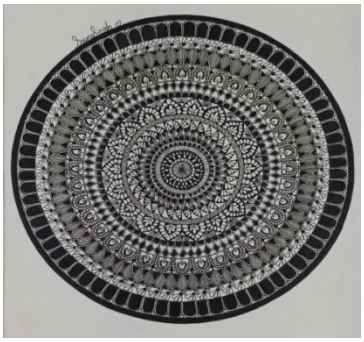
- Dokra is derived from the Dhokra Damar tribes of West Bengal who were traditional metal smiths. Dhokra Damar Tribes are found in the states of Jharkhand, Orissa, Chhattisgarh, Rajasthan and Kerala.
- Dokra is basically a brass-work (metal craft) using the traditional "Lost Wax Technique".
- Making Dokra art is a difficult process with each figurine taking about a month to complete.
- There are many processes involved, for which seven to eight varieties of clay is required, apart from other raw material.

## Mandala art Buddhism



A mandala the size of one and a half football pitches has been created by artist James Brunt at the Halewood Park Triangle in UK. It has used the materials such as leaves and rocks.

**Background**

- Mandala literally means "circle" or "centre" in Sanskrit and it is a symbolic picture of the universe.
- Mandala patterns are centuries old motif that was used to depict the cosmos.
- It has been adapted by artists around the world, each of whom has added their own interpretation and painted it as their own.

**Relevance of Mandala art Buddhism**

- Mandala is defined by a geometric configuration that usually incorporates the circular shape in some form.
- It is believed to be rooted in Buddhism, appearing in the first century BC in India. Over the next couple centuries, Buddhist missionaries travelling along the silk road took it to other regions.
- By the sixth century, mandalas have been recorded in China, Korea, Japan, Indonesia and Tibet. In Hinduism, the mandala imagery first appeared in Rig Veda (1500 – 500 BCE).

**Importance of Mandala art Buddhism**

- It was a belief that by entering the mandala and moving towards its center, one is guided through the cosmic process of transforming the universe from one of suffering to that of joy.
- A Traditional Buddhist mandala, a circular painting drawn with coloured sand, aided in meditation, with the main objective of aiding its creator to discover their true self.
- There are various elements incorporated within the mandala, each of which has its own meaning.
- The eight spokes of the wheel (the dharmachakra) represent the eightfold path of Buddhism (practices that lead to liberation from rebirth), the lotus flower depicts balance, and the sun represents the universe.
- Facing up, triangles represent action and energy, and facing down, they represent creativity and knowledge.

## Assam Charaideo:

Centre has decided to nominate **Assam's Charaideo Moidamssite** for the prestigious **United Nations Educational, Scientific and Cultural Organization's (UNESCO) World Heritage Sites list.** If selected, Assam will have three world heritage sites, the other two being Kaziranga National Park and Manas National Park.

**Charaideo Moidams**

- **Charaideo Moidams**, **home to over 90 royal burial mounds, is also referred to as the Pyramids of Assam.**
- Located approximately 30 km from Sibsagar town in Assam is **Charaideo, the first capital of the Ahomestablished by the firstAhom king Chao Lung Siukapha in 1253.**
- Charaideo symbolizes the Ahom power, the place of origin of the royal Ahoms. The mausoleum or the burial mounds of the Ahom royals are called Charaideo Moidams.
- Surrounded by hills and forests, water bodies, and tufted wild grass, the Moidams in Charaideo are considered sacred. For the local people, it's a place where holy spirits reside under the endless sky.
- It was in 1951 that the ASI declared four large Moidams in Charaideo as protected sites for their historical significance.



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## Ahom Kingdom

- The Ahoms were one of India's longest-reigning ruling dynasties. At their peak, their kingdom stretched from modern-day Bangladesh to deep inside Burma. Known to be able administrators and valiant warriors, the Ahom dynasty has enduring cultural appeal in Assam.
- Last year, Ahom general and folk hero **Lachit Borphukan's400th birth anniversary** was celebrated in New Delhi. This Lachit Diwas is special because it marks the 400th birth anniversary of the great Lachit Borphukan. He epitomized unparalleled courage. He placed the well-being of people above everything else and was a just as well as visionary leader.

**Moidams**

- **A moidam is a mound of earth raised over a grave of Ahom royalty and aristocracy.** While Charaideo exclusively contains moidams of Ahom royals, other moidams of aristocrats and chiefs can be found scattered across Eastern Assam, in the region between the towns of Jorhat and Dibrugarh.
- A typical moidam at Charaideo contains one or more chambers in a vault. On top of these is a hemispherical earthen mound, rising high above the ground, covered in grass. On top of this mound, there is a pavilion, known as the chow chali. A low octagonal wall surrounds the mound with one entrance.
- Ahom kings and queens were buried inside these moidams. Unlike Hindus who cremate their dead, the predominant funerary method of the Ahoms, originating from the Tai people, was the burial.
- The height of a moidam is typically indicative of the power and stature of the person buried inside.

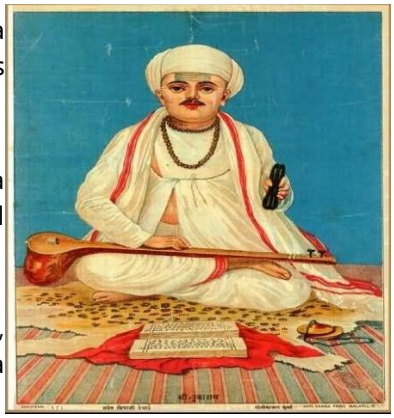
## Significance of CharaideoMoidams

- The word Charaideo has been derived from three Tai Ahom words, **Che-Rai-Doi. "Che" means city or town, "Rai" means "to shine" and "Doi" means hill.** In short, Charaideo means, "a shining town situated on a hilltop."
- While the Ahoms shifted capitals multiple times over their 600-year history, Charaideo is considered to be their first capital city established in 1253 AD by king Sukaphaa.
- Throughout the Ahom rule, it remained a symbolic and ritual center of power, due to its salience in the dynasty's founding. After Sukaphaa was laid to rest in Charaideo in 1856, subsequent royals also chose it as their resting place.
- Today, these moidams are major tourist attractions. While there are over 150 moidams in the region, only 30 are protected by the Archaeological Survey of India with many in a state of disrepair.
- According to the dossier on the CharaideoMoidams, such burial sites have been seen across East and Southeast Asia but the "cluster of moidams in Charaideo distinguishes itself in scale, concentration and being located in the most sacred land of the Tai-Ahoms".

# Personality and Awards

## Sant tukaram:

Prime Minister inaugurated a shila (rock) temple at the Sant Tukaram Maharaj Mandir.



- Sant Tukaram was a Warkari saint and poet, famously known for Abhanga **devotional poetry and community-oriented worship** through spiritual songs known as Kirtans.
- He lived in Dehu.
- A Shila Mandir was built after his demise, but it was not formally structured as a Temple. It has been rebuilt in stone masonry with 36 peaks, and also carries an idol of Sant Tukaram.

## Sant Tukaram- Background

- Sant Tukaram Maharaj, also known as Tuka, Tukobaraya, and Tukoba in Maharashtra, was a 17th-century Marathi poet and Hindu sant. In Maharashtra, India, he was a Sant of the Varkari sampradaya.
- He was a follower of the Varkari devotionalism tradition, which was egalitarian and personalised.
- He devoted the most of his final years in spiritual worship, community kirtans (singing group prayers), and Abhanga



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poetry composition.

- Tukaram's kiratans and Abhangs exposed the evils of the time's society, social system, and Maharajs. As a result of this, he encountered some resistance from society and some individuals.
- Tukarama mentions four more people in his Abhangas work who had a major influence on his spiritual development: the previous Bhakti Sants Namdev, Dnyaneshwar, Kabir, and Eknath.

## Gandhi –mandela award

Recently, the 14th Dalai Lama was conferred the Gandhi Mandela Award 2022. Himachal governor calling him "universal ambassador of peace". The Tibetan spiritual leader is the recipient of the 1989 Nobel Peace Prize.

**About Gandhi Mandela Award**

- The award was instituted by the Gandhi Mandela Foundation on the 150th birth anniversary of the Father of the Nation, MK Gandhi.
- It is a highly prestigious International award, for promoting Gandhian and Nelson Mandela's values, community service, and social development (in Asia & African countries)
- The award is given annually, and the nominations are invited from the Head of the States that includes President, Vice president, and Prime Minister of Asian & African Countries

The award is given to personalities who have carried forward the legacies of Gandhi and Mandela by making significant contributions in the fields of Peace, Social Welfare, Culture, Environment, Education, Healthcare, Sports, and Innovation.

# Miscellaneous

## Indian council for cultural relations

**News-Excerpt**

Indian Council for Cultural Relations (ICCR) to honor Sheikh Mujibur Rahman to commemorate the 50th anniversary of the country's Liberation War as well as India's ties with Dhaka.

**About ICCR**

The Indian Council for Cultural Relations (ICCR), is an **autonomous organization** of the Government of India, involved in India's global cultural relations, through cultural exchange with other countries and their people.

- It was founded on 9 April 1950 by Maulana Abul Kalam Azad, the first Education Minister of independent India.
- The ICCR Headquarters is situated in New Delhi
- Registered as a Society under the Societies Act, ICCR operates as an independent body under the administrative control of the Ministry of External Affairs.

**Role of ICCR**

- The Council addresses its mandate of cultural diplomacy through a broad range of activities
- In addition to organizing cultural festivals in India and overseas, the ICCR financially supports several cultural institutions across India and sponsors individual performers in dance, music, photography, theatre, and the visual arts
- It also administers the Jawaharlal Nehru Award for International Understanding, established by the Government of India in 1965.

**Significance**

ICCR has instituted several awards, which are conferred upon foreign nationals for their contributions in different fields, under its mandate of promoting India's cultural relations. Such awards include–

- World Sanskrit Award
- Distinguish Indologist Award
- Gisela Bonn Award



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## Person in news

### Annie Besant

- Born in 1847 in United Kingdom Annie Besant came to India in 1893 as a part of **Theosophical society.**
- In 1914, She established **Young Men's Indian Association** to prepare youth for Public Service
- In 1916, She started **All India Home Rule League** with Bal Gangadhar Tilak to advocate for self-rule in India.
- In 1917, She became the **first women President** of the Indian National Congress.
- She established **Central Hindu College and Girl's College** in Benares, **Madanapalle College and Adyar Arts League**
- She was associated with **New India and Commonweal newspapers.**

### Mokshagundam Visvesvaraya

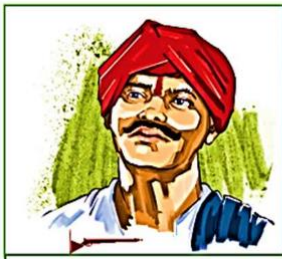
- Born on 15th September 1861, his birth anniversary is celebrated as **Engineers Day.**
- He was awarded with **BAHART RATNA in 1955** for being India's greatest civil engineer.
- He is known for designing one of **India's first flood protection system in Hyderabad.**
- He is known for various significant contribution in building water reservoir, for town planning and for industry and commerce development.
- He was behind the design of the block system of irrigation and introduction of automatic sluice gate on dam
- He played a major role in setting up **Hindustan Aeronautics Limited**

### Dr Sarvepalli Radhakrishnan

- He was philosopher, teacher, writer and politician who served as **First Vice President of India and later as Second President of India from 1962 to 1967.**
- His birth anniversary is celebrated as Teachers Day every year in India.
- He was considered as **bridge builder between India and West.**
- He was awarded **BHARAT RATAN in 1954** was the first individual to be awarded the Sahitya Akademi fellowship.
- He headed University Education Commission 1940-49 and defined objectives of education.
- As a respect towards Dr Radhakrishnan Oxford University started two scholarship programmes– **Radhakrishnan Chevening Scholarships and the Radhakrishnan Memorial Award.**

### Netaji Subhash Chandra Bose

- Born on 23rd January 1897, Netaji birth anniversary is celebrates as **Parakram Diwas**
- While **Swami Vivekananda** was his spiritual Guru, his political mentor was **Chittaranjan Das.**
- In 1919, he cleared prestigious Indian Civil Service (ICS) exam but left the job due to its discriminatory nature.
- He participated in the **Civil Disobedience Movement in 1930. He was editor of newspaper Forward and his own publication was Swaraj**
- He won both 1938 and 1939 presidential election of congress, however due to ideological differences left congress and founded **Forward Bloc.**
- In 1943, He formed **Azad Hind Government with its own Indian National Army** in Singapore and gave the clarion call of "Delhi Chalo"
- INA inspired the famous **Royal Navy Mutiny** which served as the last nail in the coffin of British Rule in India.

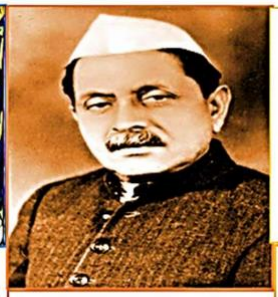


### RAMJI GOND

- As part of Azadi Ka Amrit Mahotsav, the Centre is commemorating 'Hyderabad Liberation Day' on September 17 with year-long celebrations.
- Ramji Gond was a Gond chief ruled the tribal areas in present-day Adilabad district of Telangana.
- Ramji and his men fought against the British and Nizams to preserve his Gond kingdom in the 18th century.
- Ramji Gond and 1,000 of his followers who were hanged en masse from a banyan tree, popular known as **'Veyyivurula Marri', by Nizams.**
- Ramji Gond in part inspired the later actions of **Kumram Bheema.**

### Turrebaz Khan

- Also known as Turrum Khan was born in Begum Bazar, Hyderabad State
- He was highly inspired by the famous Sepoy Mutiny in 1857 and he led **uprising of 1857 in Hyderabad** along with **Maulvi Allauddin.**
- He mobilised 6,000-odd people to attack the British Residency.
- He was caught and shot dead on January 24 in the forests of Toopran.
- Turrebaz Khan's legacy lies in a memorial, which was constructed near Koti Women's college in 1959.



### Beohar Rajendra Sinha

- He was among the stalwarts who rallied for the inclusion of Hindi as an official language of India.
- On his birth anniversary, Hindi was adopted as an official language by the Constituent Assembly. The Day also marked celebration of **Hindi Diwas.**
- He wrote more than 100 books on Buddhism which were added to many universities syllabus.
- Some his famous works includes गोस्वामी तुलसीदास की समन्वय साधना (1928), महात्मा जी का महाव्रत (1935), त्रिपुरी का इतिहास (1939), हिंदी गीता (1942)

### PANDURANG KHANKHOJE

- Born in 1883 at Wardha (Maharashtra) he was an Indian revolutionary, scholar, agricultural scientist, one of the founding members of **Ghadar party.**
- He was also associated with **Berlin Committee (India Independence Committee)** and was also associated with **Communist Party of India.**
- Post-independence he researched on corn, wheat, pulses and rubber, developing frost and drought-resistant varieties and was parts of efforts to bring in **Green Revolution in India.**
- He was also revered as an Agricultural Scientist in Mexico

### VO Chidambaram Pillai

- He was born on 5th September 1872 and was known as **Kappalottiya Tamilan** (The Tamil Helmsman)
- He was a freedom fighter who funded the **Swadeshi Steam Navigation company.** In many ways a true visionary of Atamanirbhar Bharat.
- Launched first Indigenous Indian shipping service between Tuticorin (India) and Colombo Sri Lanka
- His published works includes : **Thirukkural and Tolkappiym**



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**India's World Heritage Sites**

**Cultural Sites-32**

- Agra Fort (1983)
- Ajanta Caves (1983)
- Archaeological Site of Nalanda Mahavihara at Nalanda, Bihar (2016)
- Buddhist Monuments at Sanchi (1989)
- Champaner-Pavagadh Archaeological Park (2004), Gujarat
- Chhatrapati Shivaji Terminus (formerly Victoria Terminus) (2004)
- Churches and Convents of Goa (1986)
- Dholavira: a Harappan City (2021)
- Elephanta Caves (1987)
- Ellora Caves (1983)
- Fatehpur Sikri (1986)
- Great Living Chola Temples (1987, 2004)
- Group of Monuments at Hampi (1986)
- Group of Monuments at Mahabalipuram (1984)
- Group of Monuments at Pattadakal (1987)
- Hill Forts of Rajasthan (2013)
- Historic City of Ahmadabad (2017)
- Humayun's Tomb, Delhi (1993)
- Jaipur City, Rajasthan (2019)
- Kakatiya Rudreshwara (Ramappa) Temple, Telangana (2021)
- Khajuraho Group of Monuments (1986)
- Mahabodhi Temple Complex at Bodh Gaya (2002)
- Mountain Railways of India (1999, 2005, 2008)
- QutbMinar and its Monuments, Delhi (1993)
- Rani-ki-Vav (the Queen's Stepwell) at Patan, Gujarat (2014)
- Red Fort Complex (2007)
- Rock Shelters of Bhimbetka (2003)
- Sun Temple, Konârak (1984)
- Taj Mahal (1983)
- The Architectural Work of Le Corbusier, an Outstanding Contribution to the Modern Movement (2016)
- The Jantar Mantar, Jaipur (2010)
- Victorian Gothic and Art Deco Ensembles of Mumbai (2018)



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# INTERNATIONAL RELATIONS

## India and its neighbourhood countries

### India Bangladesh Relation

Passenger train services between India and Bangladesh resumed after an over two-year gap owing to the pandemic with the flagging off of Bandhan Express from Kolkata station to Khulna.

**Trains between India and Bangladesh**

- Bandhan Express - from Kolkata station to Khulna
- Maitree Express - between Kolkata and Dhaka
- Mitali Express - between New Jalpaiguri and Dhaka

**India Bangladesh Relation**

- India-Bangladesh relations today are deeper than any other strategic partnership. It is a role model for relations between two neighbouring countries. The spirit of friendship, understanding and mutual respect engendered during the liberation of Bangladesh continues to permeate different aspects of this relationship.
- India was the first country to recognize Bangladesh as a separate and independent state and established diplomatic relations with the country immediately after its independence in December 1971.
- Defence ties: India and Bangladesh share 4096.7 km. of border, which is the longest land boundary that India shares with any of its neighbours. Defence cooperation between India and Bangladesh has seen significant progress in the last few years. This push is illustrated in the exchange of visits between leaders of the two nations, as well as the conduct of training programmes, joint exercises, and humanitarian assistance and disaster relief (HADR).

Eg- Exercise MILAN (Navy) and Exercise Sampriti (Army).

- **Economic Ties**: Bangladesh is India's biggest trade partner in South Asia and India is the second biggest trade partner of Bangladesh. Bilateral trade between India and Bangladesh has grown steadily over the last decade and the exports of Bangladesh have tripled over the last decade to cross $1 bn in 2018-19. In the FY 2019-20, India's exports to Bangladesh were $8.2 bn and imports were $1.26 bn.
  - In order to promote cooperation on bilateral trade, an **India-Bangladesh CEO's Forum was launched in December 2020** to provide policy level inputs in various areas of trade and investment and also to facilitate exchanges among the business communities of both the countries. The first meeting of the **India-Bangladesh Textile Industry Forum** was held in February 2020 to enhance linkages and collaboration in the textile sector.
- **Cooperation in the power sector** has become one of the hallmarks of India- Bangladesh relations. Bangladesh is currently importing 1160 MW of power from India. The Joint Working Group (JWG)/Joint Steering Committee (JSC) on power provides an institutional framework to promote bilateral cooperation in cross border trade of electricity.
- **Cultural Cooperation**: The year 2021 was historic in India-Bangladesh relations as both countries commemorated the fiftieth anniversary of the Liberation War and the establishment of diplomatic relations between India and Bangladesh. The Indira Gandhi Cultural Centre (IGCC) in Dhaka plays an important role in celebration of common cultural links between the two countries.

**Natural Sites- 7**

- Great Himalayan National Park Conservation Area (2014)
- Kaziranga National Park (1985)
- Keoladeo National Park (1985)
- Manas Wildlife Sanctuary (1985)
- Nanda Devi and Valley of Flowers National Parks (1988, 2005)
- Sundarbans National Park (1987)
- Western Ghats (2012)

**Mixed Sites- 1**

- Khangchendzonga National Park (2016)



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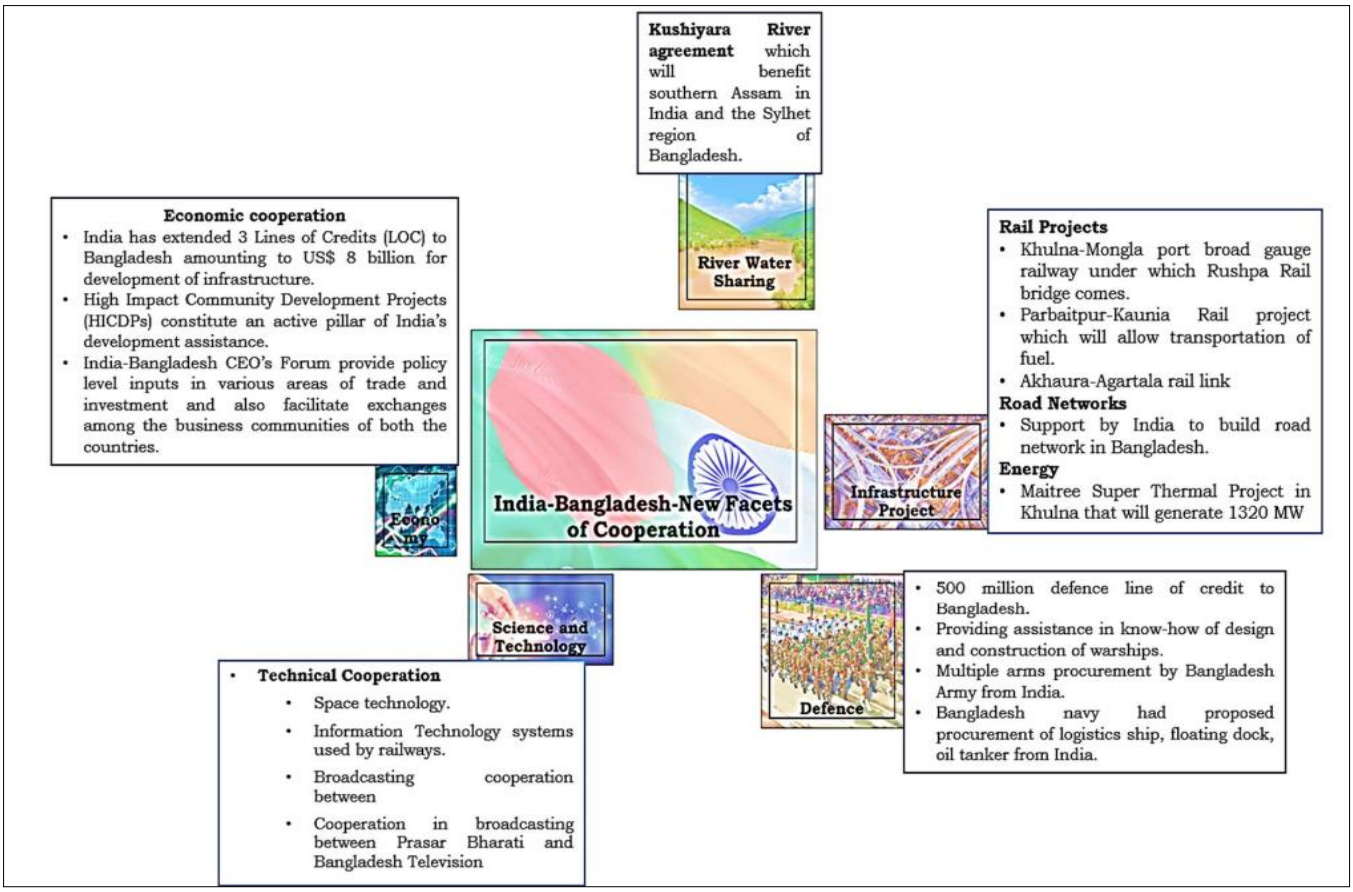


**Kushiyara River Agreement : Kushiyara River** It is a distributary (a river branch flowing away from the mainstream) of the Barak River (which flows through the Manipur,

Nagaland, Mizoram and Assam states) which flows from India to Bangladesh.

- It forms the India-Bangladesh border as Barak separates into Kushiyara and Surma.
- It re-joins Surma at Bhairab Bazar in Bangladesh and is known as Kalni.
- Kalni along with Dhanu (a branch of Surma) forms Meghna .

## India-Nepal

The Government of Nepal has decided to hand over the contract of the 750- megawatt West Seti Hydropower Project and 308-megawatt SR6 Storage Hydroelectric Project to National Hydro Power Company Limited, India.

**Recent Developments**

**Infrastructure**

- Government of India is building Integrated Check Posts (ICPs) on either side of the Indo-Nepal border. ICP will systematize the movement of cross-border cargo trucks between two countries and will bring customs and immigration facilities under one roof.
- India having operationalized a 35 Km cross-border rail link between Jayanagar (Bihar) to Kurtha (Nepal) will be further extending it to Bijalpura and Bardibas.

**Energy**

- Several hydroelectric projects in Nepal are build with India helps these includes:
  - Arun-3 hydro project on Arun River in Eastern Nepal
  - Arun-4 Hydro power project to be developed jointly by Satluj Jal Vidyut Nigam (SJVN) and Nepal Electric Authority (NEA)
  - Pancheswar Multipurpose project came after Mahakali Treaty
  - West Seti Hydropower Project.
  - West seti dam is a proposed 750-megawatt Hydropower Project, which is to be built on the Seti river



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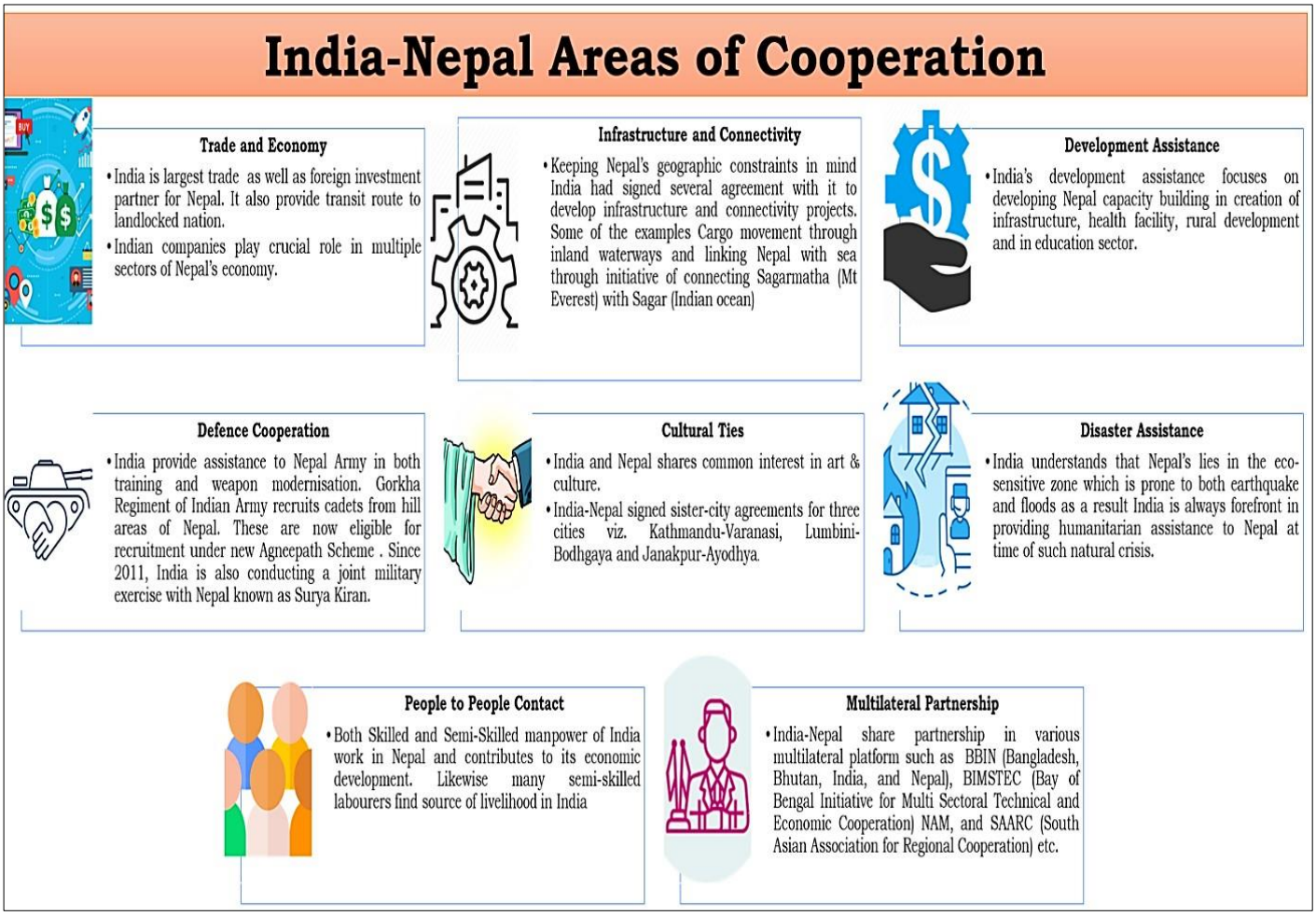
in far-western Nepal, which has remained on the drawing board for the last six decades.

- A double circuit transmission line between connecting Tila (Solukhumbu) to Mirchaiya (Siraha).
- Motihari-Amlekhgunj oil pipeline project it will transport fuel from the Barauni refinery in Bihar to Amlekhgunj in south-east Nepal and is the first cross-border petroleum products pipeline in South Asia.
- Close cooperation between Indian Oil Corporation and Nepal Oil Corporation on ensures regular supplies of petroleum products in Nepal.
- India had also inducted Nepal in International Solar Alliance.

**Cultural and Human resource development**

India will be developing an India International Centre in Lumbini, Nepal for Buddhist Culture and Heritage in the Lumbini Monastic Zone. The center will allow people to enjoy the essence of spiritual aspects of Buddhism. It will also cater to scholars.

India will be establishing a satellite campus of IIT in Rupandehi, Nepal.




**Boundary Issue**

- Nepal released new maps claiming Indian territory during the Kalapani controversy. It claimed three areas viz. Kalapani, Limpiyadhura and Lipulekh of Uttarakhand and the area of Susta of Bihar.
- By publishing maps Nepal made the bilateral issue into an international one and as a result negotiation on the issue will now be a diplomatic quagmire.



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## China India ocean forum

China has launched a new initiative known as CIOF concerning the Indian Ocean region, however, ironically enough it didn't invite India to participate in this initiative.

**About the Indian Ocean**

The Indian Ocean is the centrepiece of the wider Indian Ocean Region and the third largest water body in the world with major sea communication lanes which connect east to west. The Indian Ocean has a high global value such as:

**Geo-Political importance:**

- Religious extremism, terrorism, the collapse of state structures, the transnational power of non-state actors, the proliferation of weapons of mass destruction, and a host of non-traditional security threats express themselves most virulently in the Indian Ocean Region.
- The relations between nations both intra and extra-regional and changes in political thought shape the overall architecture and security scenario of the region.
- Any expansion of naval military forces especially the U.S., China, and India, growing of extra-regional powers, and nuclear-capable nations can influence the whole Indian Ocean Region's political scenario.

**Geo-Strategic importance:**

- Strategically the Indian ocean with some 2.7 billion people is a vast theatre, stretching from the Strait of Malacca and the western coast of Australia in the East to the Mozambique Channel in the West.
- Its regional forum, the Indian Ocean Rim Association, includes countries as politically and socially different as Australia, Indonesia, Iran, and South Africa, leading to striking new power dynamics.
- Resource-rich Africa and energy-dense Middle East to South Asia's labour markets and manufacturing industries make it strategically and economically important.

**China's Ambition in the Indian Ocean**

China aims to challenge major power including India, ensure its energy security, and reflect its status as a significant power by establishing institutions with Indian Ocean Region countries. There are two major strategies associated with China's approach:

**'String of Pearls Strategy':**

- ➢ It refers to a geopolitical theory that the network of Chinese intentions in the India Ocean Region (IOR) is inexorably linked to its West Pacific military control strategy.
- ➢ India has been encircled by Chinese military and commercial facilities and now China is aiming to capture Pakistan's side which is a matter of concern for India.
- ➢ The Str ait of Malacca, Myanmar, Bangladesh, Sri Lanka, and Pakistan are important strategic centers for China which are already in control.
- ➢ Along with these China has already made a significant presence of China in the Greater Indian Ocean Region.

**Responding to String of Pearls**

- ❖ India is using a multi-pronged strategy to counter the Chinese String of Pearls Strategy. **"Necklace of Diamonds"** strategy, a phrase first used by India's former foreign secretary Lalit Mansingh.
- ❖ The strategy involves building ports, extensive Coastal Surveillance Radar (CSR) systems to track Chinese Warships and Submarines, importing state of the art surveillance planes which can track down Chinese submarines, operating Airport in the neighbouring country to keep a check on the Port built by China, deepening defence ties, expanding bilateral relations with South Asian countries, Island nations in Indian Ocean region, Southeast Asian Nations and carrying out regular military exercises with navies of USA, Japan, Australia.
- ❖ India's Act East Policy intents to integrate India's economy with South-East Asian nations. It has been used to make important military and strategic agreements with Vietnam, Japan, the Philippines, South Korea, Indonesia, Singapore, and Thailand helping India to counter China.
- ❖ Several Ports in key areas such as Chahabhar (Iran), Sabang (Indonesia), Sittwe (Myanmar), Mongla and Chittagong (Bangladesh), Oman, Changi (Singapore).
- ❖ Developing Indian Navy as blue water force capable of maintaining open sea lanes, upholding freedom of navigation and the United Nations Convention on the Law of the Sea (UNCLOS).
- ❖ Signing of Military logistics agreement with like minded powers.
- ❖ Putting strategically located in Andaman & Nicobar Islands to optimum use. The tri-services command there has the mandate to protect the strategic interests of India and its allies and friendly nations in the Strait of Malacca.



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**China's Two-Ocean Theory:**

- ✓ The theory of "two oceans" is associated with the Pacific Ocean and the Indian Ocean.
- ✓ The Pacific Ocean the regions which are close to China carry many concerns for the country's political and military elite. For example, Taiwan has still considered a "rogue" state; American presence in South Korea and Japan, etc.
- ✓ The Indian Ocean is suitable for naval training and economic and trading interests in the regions bordering the Indian Ocean. For example, the ports of Pakistan and Sri Lanka.

**1.3.1 Taiwan conflict**:

**China-Taiwan Conflict**

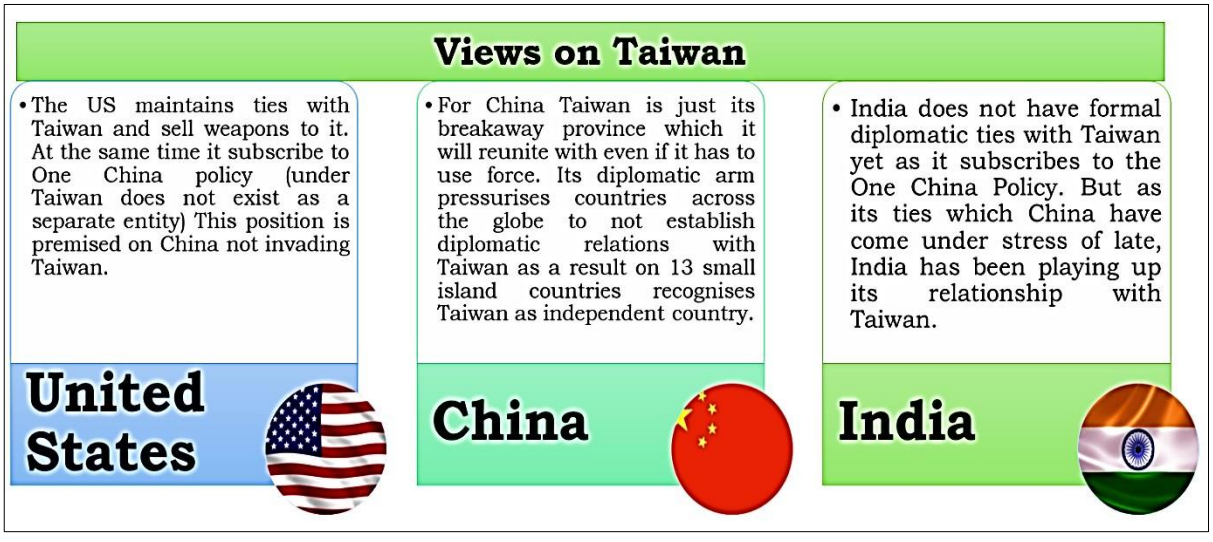
- Foundation of China-Taiwan conflict lies in the Chinese Civil War of 1945-1949, wherein Communist forces of China defeated Kuomintang government and forced them to flee towards Taiwan an island located off the coast of China across the Taiwan Strait.
- Ever since the formation of People Republic of China (PRC) by communist party it considers Republic of China (ROC) government of Taiwan as its province that awaits reintegration. This territorial want of China lead to Taiwan Strait Crisis in 1950s.
- In 1970s a rapprochement between US and China led to dramatic turn of events wherein ROC was stripped off of its permanent seat in UNSC and was given to PRC. This event also gave birth to One China Policy.

**Understanding US-China Rivalry**

- ❖ The post-2008 Global Financial Crisis saw a rise of a proactive China and slew of polices followed from 'March West' policy to Belt and Road Initiative. The counter also came from US in form of Rebalance to Asia and Pivot to Asia.
- ❖ China's periphery strategy conceives East Asia, South Asia, Central Asia, or Asia-Pacific as its new frontier forming one organic whole to the Chinese CentralKingdom. This naturally pits against the US idea of frontier underscored in the Indo-Pacific strategy.

**One China Principle and One China Policy**

- ➢ One China Principle makes PRC as a sole legitimate China with Beijing as capital and Taiwan as its province.
- ➢ US on the other hand follows One China Policy- Taiwan is not a separate entity but China doesn't have sovereign rights over Taiwan. In other words, US acknowledges Chinese position but at the same time maintains as strategic ambiguity to maintain the status quo over Taiwan.




**Taiwan and India**

- ➢ India has approached ties with Taiwan cautiously, keeping Chinese red line in mind. The consistent compliant from Taiwan is that India always shies away from political support while happily engaging in other areas.
- ➢ In 2018, Parliamentary committee on external affairs urged the government to reconsider its "deferential foreign policy towards China. It suggested that if China does reconsider its stance on outstanding border issues and sovereignty concerns, India should "contemplate using all options including its relations with Taiwan.



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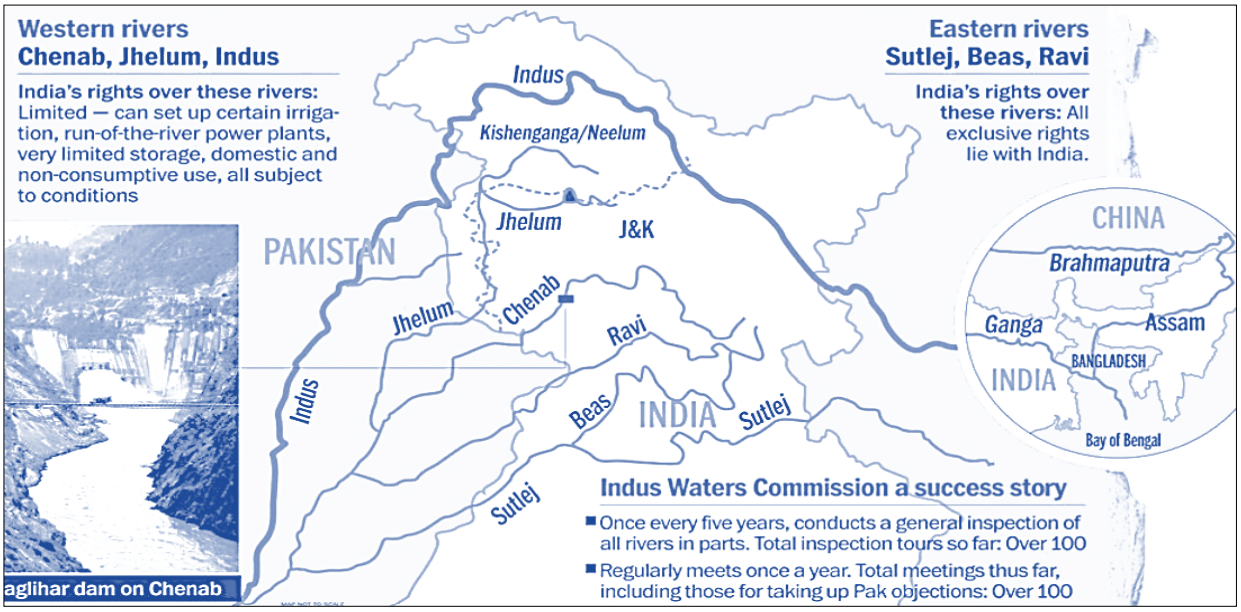
## India-Pakistan: Indus water treaty

The Government of India issued a notice to Pakistan seeking a modification in the Indus Waters Treaty (IWT) of 1960 just two days before the sitting of a court of arbitration set up on the dispute over the Kishenganga and Rattle hydroelectric power projects being constructed by India.

India shares natural water bodies with many neighbouring states. Of them, rivers have remained a constant source of conflict between India and these neighbours. India has riparian disputes with Nepal (over Kosi and Sarada), Bangladesh (over Ganga and Kushiyara, among others), and Pakistan (over Indus and Chenab, among others).

**Understanding Indus Water Treaty**

- The Indus River system consists of five major rivers: Indus, Jhelum, Chenab, Beas, and Sutlej, that start in the Himalayas and travel westwards to flow into the Arabian Sea.
- After the British took control of the area in the 19th century, they expanded the canal system, irrigating new areas and transforming the economic and social makeup of the region.
- The end of British rule in 1947 and the formation of India and Pakistan sowed the seeds of the riparian conflict because of the way the international borders divided the basins and flow of the rivers.
- Both countries first signed the Standstill Agreement of 1947, upon expiration of which India stopped water from flowing into Pakistan. Then they signed the Inter-Dominion Agreement of 1948 by which India asked for annual revenues to be paid to it for the water. This accord failed too.
- The Indus Waters Treaty, 1960, is a water-sharing pact between India and Pakistan that covers six rivers beginning in India and flowing into Pakistan. The treaty was signed on September 19, 1960.
- The preamble to the treaty aims at satisfactory utilization of the Indus system of rivers (Ravi, Beas, Sutlej, Indus, Jhelum, and Chenab) based on the goodwill between the two countries. It was essentially a confidence-building measure between the two neighbours.
- The treaty divides the Indus system into two segments: Eastern Rivers-Sutlej, Beas, and Ravi, and Western rivers - Indus, Chenab, and Jhelum. India gets the right of unrestricted use over the Eastern rivers. Pakistan is entitled to "unrestricted" use of Western rivers. India is under obligation to let flow the western rivers unrestricted.




- Under the treaty, India got roughly 20 percent of the river system water while Pakistan got 80 percent. However, India also got the right to use the water of this 80 percent share for agricultural, domestic, non-consumptive, and hydroelectric power purposes.
- Both India and Pakistan have the right to non-consumptive use. However, both sides have the rights of drainage issues and river conservation aspects. Both sides are mandated to prevent the pollution of the rivers. As responsible partners, both sides are expected to create permanent Indus Commissions with Commissioners in charge.



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- Any dispute will have to be examined by the Commissioners. Under ***Article 8*** of the treaty, both sides are expected to meet at least once a year to discuss bilateral problems. However, after the Uri attack, India decided to suspend talks between the Commissioners and stopped short of reviewing the treaty.
- The water of the Indus system flowing into Pakistan helps irrigate about 110.000 square kilometers and supports its agriculture belt In Punjab and Sindh

**Genesis of the Present Conflict**

➢ Pakistan raised issues on the Kishenganga project and the Rattle project at the Permanent Indus Commission. Then, in 2015, Pakistan asked for the appointment 'neutral expert' for the examination of its objections.

## India and Mauritius CECPA

The Cabinet has approved signing of the Comprehensive Economic Cooperation and Partnership Agreement (CECPA) between India and Mauritius. The High-Powered Joint Trade Committee had been constituted as per the mandate of the India-Mauritius Comprehensive Economic Cooperation and Partnership agreement (CECPA), to review the general functioning and implementation of the India-Mauritius CECPA which entered into force on 1st April, 2021.

**About CECPA:**

- CECPA is the **first trade Agreement** signed by India with a country in Africa.
- The Agreement is a limited agreement, which will cover Trade in Goods, Rules of Origin, Trade in Services, Technical Barriers to Trade (TBT), Sanitary and Phytosanitary (SPS) measures, Dispute Settlement, Movement of Natural Persons, Telecom, Financial services, Customs Procedures and Cooperation in other Areas.
- CECPA provides for an institutional mechanism to encourage and improve trade between the two countries
- Indian exporters have to obtain a Certificate of Origin (CoO) from the authorised Indian agencies to avail the preferential benefits under the CECPA.
- The CECPA between India and Mauritius covers 310 export items for India, including food stuff and beverages, agricultural products, textile and textile articles, base metals and articles thereof, electricals and electronic item, plastics and chemicals, wood and articles thereof, and others.
- **Mauritius will benefit** from preferential market access into India for its 615 products, including frozen fish, speciality sugar, biscuits, fresh fruits, juices, mineral water, beer, alcoholic drinks, soaps, bags, medical and surgical equipment, and apparel.
- **As regards trade in services**, Indian service providers will have access to around 115 sub-sectors from the 11 broad service sectors, such as professional services, computer related services, research & development etc.
- India has offered around 95 sub-sectors from the 11 broad services sectors, including professional services, R&D, other business services, telecommunication, financial, distribution etc.
- Both sides have also agreed to negotiate an Automatic Trigger Safeguard Mechanism (ATSM) for a limited number of highly sensitive products within two years of the Signing of the Agreement.
- **The bilateral merchandise trade** between India and Mauritius, which rose to USD 786.72 million in 2021-22 from USD 690.02 million in 2019-20, both sides agreed to enhance bilateral collaboration to further increase bilateral trade and realise the true potential of the bilateral relationship especially under the CECPA
- Both sides agreed to the **inclusion of the General Economic** Cooperation **(GEC)** Chapter and Automatic Trigger Safeguard Mechanism (ATSM) in CECPA.
- **ATSM**: It protects the country from sudden increase in imports. Under it, if the imports of a product are rising dramatically, then after reaching a certain threshold, both can impose safeguard duties on imports.
- **GEC**: The GEC will enable enhancement of export competitiveness and enlarging the existing scope for collaboration, inter-alia, in the fields of Investments, Financial Services, Textile, Small and Medium Enterprises etc.
- **In Services sector** with regard to establishing equivalence in certification, skills and licensing requirements of various professional bodies and exploring collaboration/ cooperation arrangement between Ministry of Skill Development & Entrepreneurship and its counterpart in Mauritius on developing skill-sets. Mauritian side, while conveying the shortage of professionals in Mauritius in various sectors such as ICT, Financial Services, Film production, Engineering, Health, Tourism/Hospitality and Ocean Economy etc., welcomed movement of high skilled professionals from India to Mauritius.
- Both the sides expressed willingness to enter into a **Customs Mutual Administrative Assistance Agreement (CMMA)** and agreed to initiate discussions on the Agreement soon.



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# India and rest of the world

## India-Usa ties and initiative on critical and emerging technologies (iCET)

Recently, India-US ties saw an elevation with the launch of the U.S.-India initiative on Critical and Emerging Technology (iCET) announced in May 2022 during the Quad summit. It is a step towards adapting to new strategic realities in the Indo-Pacific region.

- Launched in May 2022, the initiative aims to position the two countries as trusted technology partners. It will facilitate building of technology value chains and supports co-development and co-production of items.
- It will address bottlenecks like regulatory restrictions, export controls and mobility barriers through a standing mechanism.

**iCET and Indo-Pacific**

- Critical and Emerging Technologies (CET) could become central to maintaining a sustained relationship between partners in the Indo-Pacific, resilient supply chains as well as in ensuring a favourable balance of power in the region by thwarting adversarial steps of hostile actors. With China working hard to reduce India's influence in the Indian ocean region,
- Primary concern for India is to remain ahead in a turbulent environment by ensuring some early gains through sustained and adaptive technological cooperation as well as tech-driven initiatives.
- With iCET as a roadmap, India and the US are rapidly adapting to the changing realities of the global order. The two most important ways in which this shift is taking place are recalibrations in regional roles and expectations in the Indo-Pacific region and preparing the bilateral relationship for the challenges of a new technology order which is likely to shape the geopolitics and more so the geostrategy of the stakeholders in the region.

- India has committed
- It will run under the National Security Councils of both countries. But, at the institutional level, it will be led by the U.S. National Science Foundation and Department of Science and Technology of India.
- Areas of cooperation under the initiative are:
  - Scientific research and development
  - Quantum and Artificial Intelligence
  - Defence Innovation
  - Space
  - Advanced Telecom- 5G and 6G wireless infrastructure
  - Semiconductors
- The model of iCET would gradually be expanded to QUAD, then to NATO, followed by Europe and the rest of the world.

**Need for iCET**

- ✓ It will allow both countries to build an open, accessible, and secure technology ecosystem, based on mutual trust and confidence that will reinforce democratic values and democratic institutions.
- ✓ It will help weed out business and talent mobility issues by strengthening the innovation ecosystems in both India and the United States.
- ✓ It could become a "game changer" in catalysing Indo-US technology cooperation by persuading the US to lift existing export control restrictions, and encouraging the private sector of both countries to cooperate in sensitive sectors.
- ✓ It would help in dispel the cloud of mistrust that has hung over India-USA relationship and to demonstrate a mutual commitment to investing in advanced technologies.

## EU'S NEW LAWS TO REGULATE CONTENT ONLINE

The ***European Union (EU)*** has given final approval to ***online safety-focused legislation***, which is an overhaul of the ***region's social media*** and ***e-commerce rules***. Called the ***Digital Services Act (DSA)***, the law tightly regulates the way intermediaries, especially large platforms such as ***Google***, ***Meta***, ***Twitter***, and ***YouTube***, function in terms of moderating user content.

**What are the key features of the Digital Services Act?**

1. **Faster removals and provisions to challenge:** As part of the overhaul, **social media companies** will have to add "***new procedures for faster removal***" of content deemed illegal or harmful.



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2. **Bigger platforms have greater responsibility:** One of the most ***crucial features*** of the legislation is that it ***avoids a one-size fits all approach and*** places increased accountability on the Big Tech companies. Under the DSA, '***Very Large Online Platforms' (VLOPs)*** and '***Very Large Online Search Engines' (VLOSEs)***, that is platforms, having more than 45 million users in the EU, will have more stringent requirements.
3. **Direct supervision by European Commission:** More importantly, these requirements and ***their enforcement*** will be centrally supervised by the ***European Commission itself*** — a key way to ensure that companies do not sidestep the legislation at the member-state level.
4. ***Clearer identifiers for ads and who's paying for them:*** Online platforms must ensure that ***users can easily identify advertisements*** and understand who presents or pays for the advertisement. They must not ***display personalised advertising*** directed towards minors or based on sensitive personal data, according to the DSA.

## India-Canada relationship.

Recently Canada released an Indo-Pacific strategy that termed India as a "crucial partner". Under the policy, Canada will seek new opportunities to partner and engage in dialogue with India in areas of common interest and values, including security, and the promotion of democracy, pluralism, and human rights.

**India -Canada in Indo Pacific**

- India can be a crucial partner of Canada both economically and demographically.
- India chairing G 20 Summit makes it more relevant and important.
- Both India and Canada concerns over China's growing assertive behavior.
- Both are seeking to expand market access by concluding an Early Progress Trade Agreement as a step toward a Comprehensive Economic Partnership Agreement.
- The partnership will also lead to bolstering Canada's visa-processing capacity, fighting climate change, deploying green technologies, enhancing use of renewable energy and clean technology and also security issues.
- Canada will launch a new multi-department initiative to help develop cyber security capacity with selected regional partners.
- There will be more investment in Indo-Pacific naval presence and increasing military's participation in regional military exercises.
- There will more investment in marine environment and infrastructure.

**Historical Background**

- The diplomatic relations between India and Canada were established in 1947.
  - ✓ The bilateral relationship is based on shared democratic values and the multicultural, multi-ethnic, and multi religious nature of the two societies.
  - ✓ Indian origin community is the largest in Canada and about 4 % of Canadians comprised Indian Diaspora.
  - ✓ Immigration, Refugees and Citizenship Canada (IRCC) has a significant presence in India. Both are working on a Comprehensive Economic Partnership Agreement and a Foreign Investment Promotion and Protection Agreement (FIPA) to strengthen Indo-Pacific.
  - ✓ Since 2018, India has been the largest source country for international students in Canada.

**Synergies Between India and Canada**

- **Trade Relationships:** In 2021, India was the 14th largest export market to Canada and the 13th largest trading partner overall.
- Canada-India Comprehensive Economic Partnership Agreement Negotiations, Canada-India Foreign Investment Promotion, and Protection Agreement, and World Trade Organization Agreement on Trade Facilitation (TFA) are some of the trade agreements.



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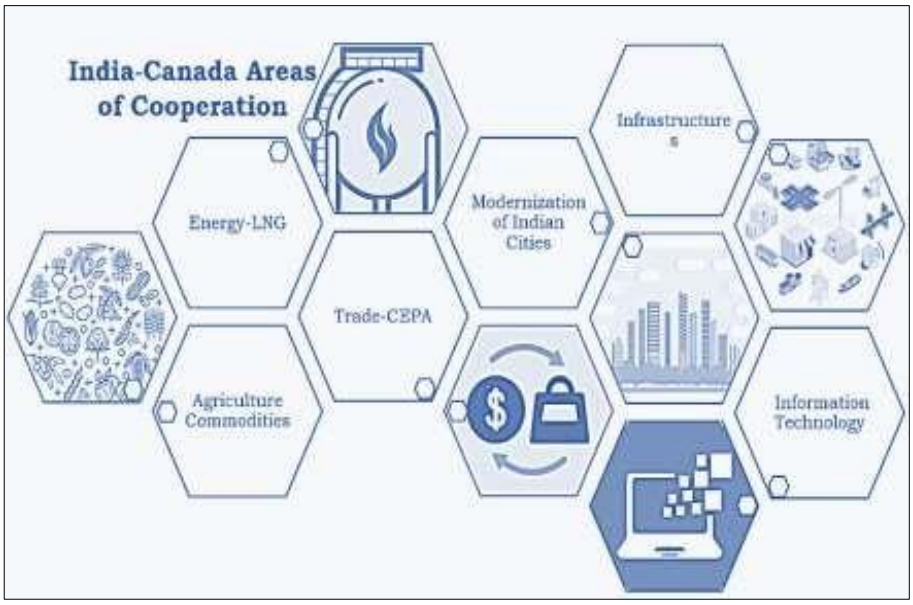
**Security and Defence:**




- **India and Canada collaborate closely in international fora, particularly through the UN, Commonwealth, and G-20.**
- Canada continues to provide development assistance to India through Indian and Canadian Non-Governmental Organizations and multilateral mechanisms such as the World Bank and the Asian Development Bank.
- **India-Canada Track 1.5 Dialogue** is organized to explore the possibility of future cooperation.
- During COVID times Special charter flights were operated to evacuate stranded Canadian nationals from India and medicines were supplied to Canada.

## India Australia critical mineral collaboration

- India and Australia have recently decided to strengthen their partnership in the field of projects and supply chains for **critical minerals.**
- Australia has confirmed that it would commit **A$5.8 million** to the three-year India-Australia **"Critical Minerals Investment Partnership".**

**Critical minerals:**

- Critical minerals are elements that are the **building blocks of essential modern-day technologies**, and are at risk of supply chain disruptions. These minerals are now used everywhere from making mobile phones, computers to batteries, electric vehicles and green technologies like solar panels and wind turbines.
- Based on their individual needs and strategic considerations, **different countries create their own lists.** However, such lists mostly include **graphite, lithium and cobalt**, which are used for making EV batteries; rare earths that are used for making magnets and silicon which is a key mineral for making computer chips and solar panels.
- Aerospace, communications and defence industries also rely on several such minerals as they are used in manufacturing fighter jets, drones, radio sets and other critical equipment.

**What makes these resources critical?**

✓ As countries around the world scale up their transition towards clean energy and digital economy, these critical resources are key to the ecosystem that fuels this change. Any supply shock can severely imperil the economy and strategic autonomy of a country over-dependent on others to procure critical minerals. For minerals such as lithium and graphite used in electric vehicle (EV) batteries, demand will increase by even more — as much as 4,000 per cent."

**China's threat in this sector:**

- According to the 2019 USGS Mineral Commodity Summaries report, China is the world's largest producer of 16 critical minerals.
- China, according to International Energy Agency (IEA), is "responsible for some 70% and 60% of global production of cobalt and rare earth elements, respectively, in 2019.

China's share of refining is around 35% for nickel, 50-70% for lithium and cobalt, and nearly 90% for rare earth elements." It also controls cobalt mines in the Democratic Republic of Congo, from where 70% of this mineral is sourced.



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- India has set up **KABIL or the Khanij Bidesh India Limited**, a joint venture of three public sector companies, to "ensure a consistent supply of critical and strategic minerals to the Indian domestic market".
- Australia's Critical Minerals Facilitation Office (CMFO) and KABIL had recently signed an MoU aimed at ensuring reliable supply of critical minerals to India.
- There is a need to **study an interactive map of critical mineral deposits** with an aim to help governments to identify options to diversify their critical minerals sources.

## India france relation:

In the 36th India-France strategic dialogue, the first major diplomatic visit of the year, both nations shared views on security and defense cooperation. The two sides also held deliberations on wide-ranging bilateral and global issues.

**Pre Connect**

**India-France Relations**

- India and France have traditionally close and friendly relations.
- In 1998, the two countries entered into Strategic Partnership which is a symbol of their convergence of views on a range of international issues apart from a close and growing bilateral relationship.
- The 3 pillars of the India-France Strategic Partnership lie in the areas of defense, space, and civil nuclear cooperation. The defense exercises between the two include the Shakti exercise (Army), Varuna exercise (Navy), and Garuda exercise (Air Force).
- Apart from these, India and France are increasingly engaged in new areas of cooperation like climate change, sustainable growth, and development, the International Solar Alliance, etc.
- Both countries support a multi-polar world order.
- France also support India's claim for permanent membership of the Security Council and the reforms of the United Nations.
- France has provided consistent support to India's candidature for membership in all four Multilateral Export Control regimes, viz. Nuclear Suppliers Group (NSG), the Missile Technology Control Regime (MTCR), the Wassenaar Arrangement (WA), and the Australia Group (AG).

**France-All Weather Friend**

France had emerged as "all-weather"friend of India not only in Europe but onthe larger international scenario. There are two reasons for the same- Firstly, the ability of France to maintain strategic autonomy in its foreign policy which resonates with India. Secondly, France follows the policy of singularities despite being part of the Western alliance. India and France have a common identical position on issues that range from stability in Afghanistan, Iranian Nuclear Deal and Freedom of navigation in the Indo-Pacific. India and France can construct a new coalition that can provide some strategicstability in the unstable world.

**India-France Strategic Dialogue**

The two sides discussed a variety of issues in the backdrop of a new security alliance by Australia, the UK, and the USA (AUKUS)-

- Ukraine Conflict- Both countries have called for an immediate cessation of hostilities and to bring parties together to promote dialogue and diplomacy for finding an immediate end to the suffering of the people.
- Regional Security- Both emphasize 'zero tolerance against the use of Afghan territory for spreading terrorism across the world.

**India and France in Indo-Pacific**

For both India and France, Indo-Pacific is a three- fold reality:

- Geographical Reality- Civilisational and Commercial ties have linked Africa and Asia through the Indian Ocean for centuries. The whole region is united by "culture of shorelines".
- National Reality- Both countries are Indo- Pacific Rim nations and are key actors in the region.
- Strategic Reality- Both countries are aware of the threats the region faces such as threats of piracy and illegal maritime trafficking, terrorism and security consequences of climate change.

**Further French Indo-Pacific policy is based on three pillars:**

- Security
- Environment and Blue Economy
- Connectivity

The Indo-French strategic vision on Indo-Pacific was adopted in 2018. It focuses on information exchange with French Participation in IFC-IOR, Joint military exercises and capacity building.



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- Counter Terrorism- Emphasised the need for collective efforts in countering the menace of terrorism and transnational crimes through enhanced cooperation in the fields of capacity building, information exchange, extradition, and legal assistance.
- Cyber Security- Reaffirmed their commitment to open, reliable, secure, stable and peaceful cyberspace and recalled in particular the applicability in cyberspace of existing principles of international law, including the United Nations Charter in its entirety.
- Defense Cooperation in Indo-Pacific- Ensure peace, stability, and security in the Indo-Pacific based on common beliefs in the rules-based international order and strategic autonomy.

**Significance of India-France Relations**

- ✓ **Political**
  - ☐ The creation of the Strategic Partnership in 1998 demonstrates the ties of friendship and trust between the two countries.
  - This partnership focuses on several areas of cooperation like civil nuclear energy, defense, counter- terrorism, space cooperation, cyber security and digital technologies.
  - The signing of an agreement for the supply of 36 Rafale aircraft and an industrial agreement to build six European pressurized water reactors (EPR) on the Jaitapur site is directly linked to this partnership.
- ✓ **Economic**
  - Franco-Indian trade had been growing steadily which was slowed considerably in 2020 in the context of the COVID-19 crisis to €9 billion.
  - France ranks 24th among countries supplying India and is its 17th-largest customer.
  - France is among India's leading foreign investors, with foreign direct investment stock of €9.8 billion at the end of 2020.
- ✓ **Military**
  - Indo-Pacific Oceans Initiative (IPOI)- France endorsed its launch while offering to take the role of the lead partner of the Marine Resources pillar.
  - Defense purchases- India is close to deciding on a fighter jet to fly off the Navy's aircraft carriers for which Dassault Aviation's Rafael-M has an edge..
- ✓ **Clean Energy**
  - International Solar Alliance- It was launched by India and co-founded by France. It is aimed at promoting solar energy and mobilizing over a trillion dollars of investment for the same.
  - A 100 MW solar power park is built by the French firm Engie in Mirzapur.
- ✓ **Climate Change**
  - The Paris Climate Accord- India declared its commitment to the accord and the effort to save the environment which is engrained in its heritage and ancient philosophical thought
  - India-France Roadmap on the Blue Economy and Ocean Governance intended to make the blue economy a driver of progress.
  - a call in favor of an Indo-Pacific partnership on natural parks.
  - Brest Commitments for the Oceans- To protect biodiversity and ocean resources to which India is a signatory.

## India-Armenia:

- Recently Armenia and a leading private Indian defense equipment manufacturer signed a deal for the supply of 155 mm artillery systems worth more than $150 million over the next three years. This marks a continuation of India's stated policy of deepening defense cooperation with Armenia.
- India and Armenia celebrated 30 years of bilateral diplomatic relations in the year 2022.
- Both countries are ancient civilizations that have known each other closely for over thousand of years. Thus the familiarity and depth of mutual affection between the two nations are significant given the vast geography that separates them.
- India has a very high-level of position in Armenia. It is the land where generations of Armenian diaspora communities have thrived. The dream of reviving the Armenian state has its roots in India.
- The Armenian republic was reborn in 1991 and it was recognized by India a day after the demise of the Soviet



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Union.

- Former President of Armenia Armen Sarkissian sees Mahatma Gandhi as a role model who set the highest standard for personal conduct in politics.

**Significance**

- The order closely follows a government-to-government deal with Armenia to supply $ 250 million worth of defense equipment which includes PINAKA multi-barrel rocket launchers, anti-tank munitions, etc. It also made Armenia India's first international customer of the indigenously developed PINAKA system.
- It can benefit India's contest over global supply chains since Armenia provides a potential outpost for India in the Eurasian corridor.
- Armenia can also prove a worthy developmental partner to India in domains such as agriculture, pharmaceuticals, manufacturing, and technology.
- The collaboration can provide an outstanding substitute for the debt-ridden Chinese Belt and Road Initiative (BRI) model.
- Armenia's growing purchases of Indian defense hardware would provide an impetus to both public and private sector defence manufacturing in India.
- Defense supply can help Armenia to counter the "three brothers" involving Pakistan, Turkey, and Azerbaijan by leveraging its military capabilities.

**Implications on Turkey**

- In 2020, it was in Turkey's direction that Azerbaijan attacked Armenia to connect Turkey with Azerbaijan through Armenia's Zangezur region. Turkey has also denounced the abrogation of Article 370 in Jammu and Kashmir and backed Pakistan at different open platforms and United Nations on various occasions.
- Armenia's stance on Kashmir favors India viewing the complete territory as an inseparable part of India

## India –Egypt

- The President of Egypt was invited as the **chief guest for the 74th Republic Day parade.** His visit was marked by a new vigour in the relationship between the two countries as both sides agreed to elevate the India-Egypt bilateral relationship to a "strategic partnership".
- India and Egypt are two of the World's oldest civilizations and were in trade relations since ancient times. There are Ashoka's edicts that refer to his relations with Egypt under Ptolemy II.
- Post Liberalization, India's accelerated economic growth became dependent on the Gulf for energy, labour export, and remittances. Therefore, India changed its strategy toward the gulf.
- In 2016, both countries identified political-security cooperation, economic engagement and scientific collaboration, and cultural and people-people ties as the basis of a new partnership for a new era.

**Different Facets of India- Egypt Relations**

| Economic | Defence and Security | Diplomatic | Others |
|---|---|---|---|
| • India's trade with Egypt has grown from $4.5 billion in 2018-19 to $7.26 billion in 2021-22. It is expected to grow to $12 billion dollar in the next 5 years.<br>• Top three Indian exports are- petroleum products, meat and cotton Unclassified yarn while the top three Indian imports are- crude petroleum, petroleum products and fertilizers. | • Training exchange program between the Air forces of two countries started in 1960s and lasted the mid-1980s.<br>• India wants to supply domestically produced defence equipment such as the LCA Tejas, missiles like Akash, DRDO's Smart Anti-Airfield Weapon, and radars to Egypt. For this India is also exploring avenues for co-manufacturing. | • India and Egypt are together as a member and dialogue partner respectively of the Indian Ocean Rim Association (IORA).<br>• They are both dialogue partners of the Shanghai Cooperation Organisation (SCO). | • The COVID-19 pandemic acted as a catalyst to bring many bilateral relationships between the two countries out of deep freeze. While Egypt helped India during the worst Delta Wave, India's vaccine diplomacy helped Egypt vaccinate its people. |



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**Key Takeaways of the Visit**

✓ Both countries decided to elevate the relationship to a '**strategic partnership'** which will include
- Political, Defence, and Security Engagement
- Economic Engagement
- Scientific and Academic Collaboration
- Cultural and People-to-People contacts.

✓ Both leaders called for zero tolerance for terrorism and to strengthen cybersecurity.

Exchange of five MOUs in the crucial areas of cybersecurity, information technology, culture, youth matters, and broadcasting.

**2.8 India-Africa Defence Dialogue**

The **India-Africa Defence Dialogue (IADD)** was held on the sidelines of **DefExpo 2022** in Gandhinagar, Gujarat on 18 October 2022. The **Gandhinagar Declaration**, adopted as the outcome document of the **second edition of the IADD**, charted out new areas for enhancing the **India-Africa defence and security partnership**. **Theme** of this dialogue is '**India-Africa: Adopting Strategy for Synergising and Strengthening Defence and Security Cooperation**'

**More about the news:**

- **During the IADD**, Defence Minister launched the **'India-Africa Security Fellowship** Programme'.
- **MP-IDSA** (ManoharParrikar Institute for Defence Studies and Analysis), the **knowledge partner for the IADD**, will host the **Fellowship Programme**. The fellowship will give an opportunity to African scholars to pursue research on defence and security issues in India.
- It proposes to **enhance cooperation in the field** of training in all areas of mutual interest by increasing training slots and deputation of training teams, empowerment and capability building of the defence forces of Africa, participation in exercises and humanitarian assistance during natural disasters.
- **India does not believe in making or becoming a client or satellite state**, it partners any nation on the basis of sovereign equality, mutual respect and we work towards mutual economic development.
- **Africa, South East Asia** and **Middle East** have **emerged as major focus areas as India looks** to emerge as a major global arms exporter. Peace, security and development are inter- related and security is essential for enabling development in the region.
- India has been the **first responder in providing** Humanitarian Assistance and Disaster Relief **(HADR)** to several African countries during COVID-19.

**Flashback**

1. **The first India-Africa Defence Ministers Conclave** was held in Lucknow, UP during Def Expo on February 06, 2020.
2. **India's-Africa relations** is guided by the **Kampala Principle, affirmed** by Prime Minister Shri Narendra Modi in 2018.
3. **It promotes ownership** of private sector engagement (PSE) through development co-operation with partner countries and ensure PSE projects and programmes alignment with national sustainable development priorities.

# Bilateral and Multilateral initiatives

## Partnership in blue pacific initiative:

- Amid China's aggressive push to increase its Pacific sphere of influence, the US and its allies have launched a new initiative called 'Partners in the Blue Pacific'.
  - In its 2019 strategy report, the US Department of Defence called the Indo-Pacific the ***"single most consequential region for America's future"***. Spanning a vast stretch of the globe from the west coast of the United States to the western shores of India, the region is home to the world's most populous state (China), most populous democracy (India), and largest Muslim-majority state (Indonesia), and includes over half of the earth's population.
  - Among the 10 largest standing armies in the world, 7 reside in the Indo-Pacific, and 6 countries in the region possess nuclear weapons. Nine of the world's 10 busiest seaports are in the region, and 60



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percent of global maritime trade transits through Asia, with roughly one-third of global shipping passing through the South China Sea alone.

**Partners in the Blue Pacific (PBP) initiative**

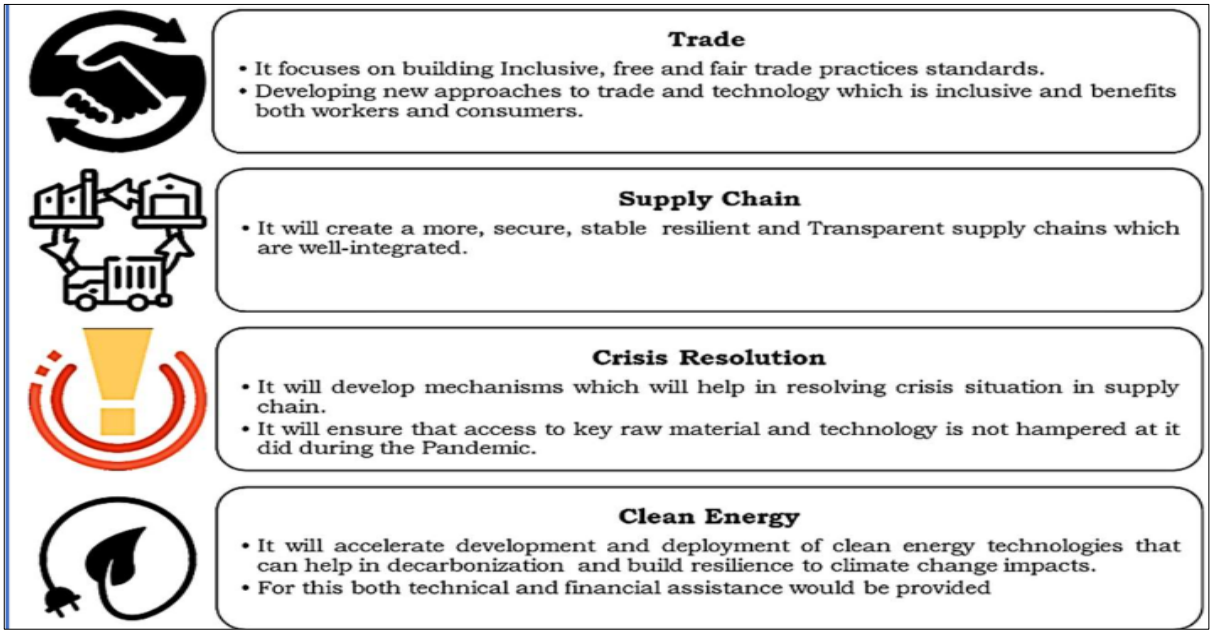
- The PBP is a five-nation "informal mechanism" to support Pacific islands and to boost diplomatic, economic ties in the region. Announced on June 24, it speaks of enhancing "prosperity, resilience, and security" in the Pacific through closer cooperation. It simply means that through the PBP, these counties, together and individually, will direct more resources here to counter China's aggressive outreach.
- The initiative members have also declared that they will "elevate Pacific regionalism", and forge stronger ties with the Pacific Islands Forum.
- The forum remains open to cooperating with additional partners, at every stage, PBP will be led and guided by the Pacific Islands. The forum will seek Pacific guidance on the PBP's selection of its lines of effort and its flagship projects.

The areas where PBP aims to enhance cooperation include "climate crisis, connectivity and transportation, maritime security and protection, health, prosperity, and education".

## Indo-pacific Economic Framework (IPEF)

IPEF is a US-led initiative involving other partner countries of the Indo-Pacific region. It seeks to strengthen economic engagement among partner countries with the goal of advancing growth, peace and prosperity in the region. It wishes to make Indo-Pacific an engine for global growth. IPEF partner countries together represent about 40% of the world GDP.

- Ministry of Commerce and Industry in the ministerial meeting of IPEF decided to maintain its distance from one out of the four pillars of the framework. While India agreed to sign an agreement on three pillars (Supply Chain, Tax and Anti-Corruption, and clean energy), it **decided not to sign** an agreement on Fair and resilient trade.




## Eastern Economic forum

Prime Minister of India addressed the 7th edition of the Eastern Economic Forum (EEF), organised by Russia in Vladivostok. The forum calls for the development of Russia's Far East (RFE).

- RFE region is extended between Lake Baikal (world's largest freshwater lake and deepest lake) and the Pacific Ocean.
- The EEF was set up in 2015 with the mandate of economic development of Russia's Far East and to expand Russia's international cooperation in the Asia-Pacific region. Since then, it has focused on attracting investment from **China, Japan, South Korea, ASEAN and India** for the RFE.



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## Delhi Declaration Adopted

The **UN counter-terrorism council**, during a meeting held in the national capital on 29 October 2022, adopted the **Delhi Declaration** and called on **all 15 member states** to **ensure zero tolerance towards terrorism**. The council also reaffirmed that terrorism, in all forms, constitutes one of **most serious threats to international peace and security**. It further vowed to deal with the scourge more vigorously.

**What the declaration said**

- The **main focus** of the meeting was to **address misuse or abuse of new and emerging technologies by terrorists**, with a focus on information and communication technologies, **financing of terror**, and **unmanned aerial systems** including **drones**.
- **Ruchira Kamboj**, permanent representative of **India** to the UN and Counter-Terrorism committee chair, said the **Delhi declaration will encourage member states** to work collaboratively and collectively to counter the menace of terrorism.
- It will adopt **non-binding guiding principles** that will encourage member states to counter the menace of terrorism.
- **In the declaration**, the global body expressed concerns over the **increasing use of Internet** and **other information and communications technologies**, including social media platforms, for terrorist purposes.
- It said **innovations in financial technologies** such as **crowd funding platforms** present a risk of being misused for **terrorist-financing** and noted with concern the increasing global misuse of unmanned aerial systems by terrorists to conduct attacks against on critical infrastructure.
- The **Counter-Terrorism Committee** urged all member-states to ensure "**zero tolerance**" towards terrorism, consistent with their obligations under international laws, including **human rights law**.
- The meeting underlined the need for taking "**urgent action**" to **counter terrorism** in all its forms and manifestations through the full and effective implementation of various UN resolutions.
- It also noted the importance of continuing discussions on the **misuse of emerging technologies for terrorist purposes** in other relevant international forums, including **the G20.**
- The committee emphasised the need for member-states and **CTED (Counter-Terrorism Committee Executive Directorate)** to continue cooperation with the private sector and civil society for more effective means to counter the use of **new and emerging technologies** for terrorist purposes.

# Meetings and Summits

## Brics 14th summit held at Beijing (china):

BRICS countries, consisting of China, Russia, India, Brazil and South Africa, expressed their concern over the humanitarian situation in and around Ukraine.

- Prime Minister of India participated in the 14th BRICS Summit, convened under the Chairmanship of President Xi Jinping of China, in a virtual format. The theme of the 14th BRICS Summit: **Foster High-quality BRICS Partnership, Usher in a New Era for Global Development.**
- The leaders held discussions including in **fields of Counter-Terrorism, Trade, Health, Traditional Medicine, Environment, Science, Technology & Innovation, Agriculture, Technical and Vocational Education & Training,** and also key issues in the global context, including the reform of the multilateral system, COVID-19 pandemic, global economic recovery, amongst others.
- India called for strengthening of the BRICS Identity and proposed establishment of Online Database for BRICS documents, BRICS Railways Research Network, and strengthening cooperation between MSMEs. India will be organizing **BRICS Startup event this year to strengthen connection between Startups in BRICS countries.**
- India also noted that as BRICS members we should understand security concerns of each other and provide mutual support in designation of terrorists and this sensitive issue should not be politicized. At the conclusion of the Summit, BRICS Leaders adopted the '**Beijing Declaration**'.

**On Ukraine Crisis**

- BRICS members — Brazil, Russia, India, China and South Africa — endorsed talks between Moscow and Kyiv amid



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the ongoing war, while voicing concerns about the worsening humanitarian situation in Ukraine.

- The statement was part of the formal declaration — 'Beijing Declaration' — released after the 14th BRICS Summit, held virtually.
- Russian President Vladimir Putin — attending his first forum with the heads of major economies since launching the Ukraine invasion — said settling conflicts, among other issues, can only be done through joint efforts.

**Xi pushes for security alliance within BRICS**

- Noting that today's world is marked by the "dark clouds of Cold War mentality", Chinese President Xi Jinping said some countries have tried to expand military alliances and create blocs in certain regions by forcing other countries into "picking sides".
- The Chinese president called for a larger security alliance within BRICS, underlining that Beijing would like to work with the grouping to operationalise the Global Security Initiative (GSI).
- Proposed by China in May this year, the GSI aims to be an Asian security framework that replaces "confrontation, alliance and a zero-sum approach with dialogue, partnership and win-win results".

***BRICS***

- The leaders of BRIC (Brazil, Russia, India, and China) countries met for the first time in St. Petersburg, Russia, on the margins of G8 Outreach Summit in July 2006.
- Shortly afterwards, in September 2006, the group was formalised as BRIC during the 1st BRIC Foreign Ministers' Meeting, which met on the sidelines of the General Debate of the UN Assembly in New York City.
- After a series of high level meetings, the 1st BRIC summit was held in Yekaterinburg, Russia on 16 June 2009.
- BRICS is an important grouping bringing together the major emerging economies from the world, **comprising 41% of the world population, having 24% of the world GDP and over 16% share in the world trade.**

BRICS countries have been the main engines of global economic growth over the years. Over a period of time, BRICS countries have come together to deliberate on important issues under the three pillars of **political and security, economic and financial and cultural and people to people exchanges.**

## I2U2 summit:

The new I2U2 grouping of **India, Israel, the UAE and the US** will hold its first virtual summit next month as part of the US administration's efforts to re-energise and revitalise American alliances across the world.

- I2U2 is an entirely new grouping of partners that includes the United States, Israel, India, and the UAE. In the grouping's name, 'I2' stands for India and Israel, whereas 'U2' stands for USA and the UAE.
- The aim is to harness unique American capabilities to enable partners to work more closely together, which is essential to a more secure, prosperous and stable Middle East region over the long term. The summit will discuss food security, biotechnology, and several other issues.

**Abraham Accord**

- On September 15, 2020, former U.S. President Donald Trump hosted Israeli Prime Minister Benjamin Netanyahu and foreign ministers of the United Arab Emirates and Bahrain for the signing of the historic Abraham Accords. According to the deal, the United Arab Emirates formally recognized the state of Israel, while the latter halted its plans to annex parts of the occupied West Bank of Palestine.
- The Abraham Accords is the first Arab-Israeli peace deal in 26 years. Israel inaugurated its first diplomatic mission in Abu Dhabi and direct flights, business and tourism picked up between the two countries in 2021. However, not all Arab States have been on board with the geopolitical shifts the Accords have pushed through. Despite a lot of effort from Israel, under Benjamin Netanyahu, Saudi Arabia has maintained a distance from this arrangement.

## SCO Summit:

The Annual Summit of the Shanghai Cooperation Organisation was recently held in Samarkand, Uzbekistan. The summit ended up in Samarkand Declaration and India taking over the presidency of SCO for 2023.

**Key Highlights of the Summit**

- Samarkand Declaration was focused on the peaceful settlement of differences and disputes between countries using dialogue and diplomacy.



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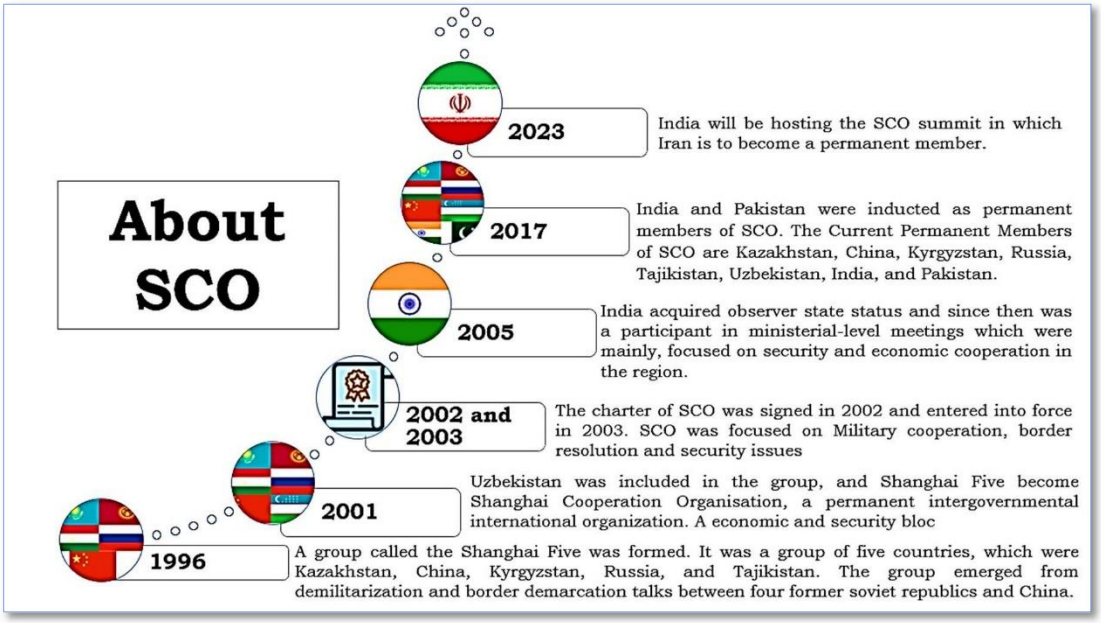
- India called upon all states to provide each other with full rights to transit as connectivity can change the future of the region.
- India also stressed the issue of the global food crisis and therefore promoted millet cultivation among member states. It was in line with 2023 being an International Millet Year.
- Varanasi was declared as SCO Tourism and Cultural Capital for 2022-2023. A move to boost the tourism potential of SCO states.

Bahrain, Maldives, Kuwait, UAE, and Myanmar are the new dialogue partners of the SCO while the process has started for the granting of this status to Egypt, Saudi Arabia, and Qatar.




## G-20 Summit

The 17th annual summit of G-20 was recently held in Bali, Indonesia. India will now assume the G20 presidency and the 18th summit will be held in India in 2023.

- G-20 was formed in 1999 in the backdrop of the financial crisis that hit East Asia and Southeast Asia (Asian Tiger Economy) in particular. It was formed to promote international financial stability.
- It was formed as a group of 20 emerging market economies and developed countries to promote dialogue related to global economic governance.
- G-20 has been seen as a more representative and egalitarian grouping of global leadership and was particularly useful in steering the global economy after the global financing crisis and banking collapse of 2008.
- Since 2008 G20 summit has become an annual event. The chairmanship of G-20 is rotational, with one nation annually getting the Chair. The G-20 has no formal voting criteria.
- Together, the G20 countries include 60% of the world's population, 80% of the global GDP, and 75% of global trade

**India and G20**

- At G-20, India focuses on
  - Early conclusion of the UN Convention on International Terrorism.
  - Free movement of labor and capital amongst the states to bolster the global economy.



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- Calls for stronger action against black money.
- Calls for the right to resort to capital control measures if capital flows become volatile
- Concerns about having the US dollar as a reserve global currency and exploring widening of the SDR basket and adding more currencies to reduce vulnerabilities
- Poverty eradication and Inclusive development.

**Outcomes of the Summit**

- Countries condemned Russia's action in Ukraine and demanded its unconditional withdrawal.
- Agreed to pace interest rate rise carefully to avoid spill overs of the volatility to the currency values.
- Decided to coordinate action to address food security challenges and applauded the **Black Sea grains initiative**.
- Decided to continue the efforts to achieve the temperature goal from the 2015 Paris Agreement on climate change.
- Decided to strengthen collaboration to develop digital skills and digital literacy to harness the positive impacts of digital transformation, especially for women, girls, and people in vulnerable situations.
- Reaffirmed their commitment to strengthen global health governance, with the leading and coordination role of WHO and other international organizations. They welcomed the establishment of the Pandemic Fund hosted by the World bank.

**India and G-20 Presidency**

- India will be hosting the next G-20 summit as it gets the Presidency of G-20. For the next summit, the theme would be Vasudhaiva Kutumbakam or one earth, one family, one future.
- The G20 presidency could provide an opportunity for India to assume the mantle of a peace-maker on behalf of the Global South. Especially, in the current global scenario in which only India has a consistent and objective view of the developments while maintaining good relations with the belligerents and their supporters.
- India's G20 presidency is an unprecedented opportunity to shape the global narrative in favor of reducing the carbon footprint and encouraging green energy and digitalization as significant components of transformational changes.
- India's G20 presidency should be used to pursue its thought leadership role and the broader goal of reducing polarization, inclusively channelize resources, and firming up optics in favor of developmental priorities.

**Infrastructure (DPI)**

DPI are foundational digital systems, can increase resilience and have indeed often been catalysed at a time of crisis. Representing nearly 60 percent of the world's population, the G20 can be a strong advocate for DPI as necessary for strengthening country, regional, and global resilience in an age of recurrent crises. To achieve good DPI G20 member can:

- Committing to open data access
- Encourage inclusive private and public collaboration
- Increase public sector support and funding for joint DPI
- Set the global norms and standards to protect people

The G20 can play a pivotal role in stewarding inclusive approaches to digital transformation, directing international development cooperation, and strengthening multilateralism. DPI can champion standards and protocols for free, inclusive, innovative, and open DPI to transform the lives of the people and for the larger global good.

**India's G20 Presidency**

- India will hold the Presidency of the G20 from December 1, 2022, to November 30, 2023.
- The 43 Heads of Delegations- the largest ever in G20-will be participating in the final New Delhi Summit in 2023.
- Drawing inspiration from its G20 Presidency theme of "Vasudhaiva Kutumbakam-"One Earth One Family One Future India will host over 200 meetings in over 50 cities across 32 different work streams.
- A disaster Risk Reduction working group will be established to undertake multi-disciplinary research and exchange best practices on disaster risk reduction.
- Bangladesh, Egypt, Mauritius, Netherlands, Nigeria, Oman, Singapore, Spain, and UAE are special guests.
- UN, IMF, World Bank, WHO, WTO, ILO, FSB, OECD, AU Chair, NEPAD Chair, ASEAN Chair,
- ADB, ISA, and CDRI are G20'S invitees.

**Troika**

At the G20, the member holding the rotatory presidency every year, works together with its predecessor and successor, together known as Troika, to ensure continuity of the agenda. Currently Italy, Indonesia, and India are the Troika countries. When India assumes the presidency on December 1, it will be part of the Troika with its predecessor Indonesia and successor Brazil.



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## Partnership for Global Infrastructure and Investment (PGII)

- **United States and other G7** leaders have unveiled ambitious plans to mobilise $600 billion in funding by 2027 to deliver transparent and game-changing infrastructure projects in developing countries like India, in a move seen as a counter to China's Belt and Road Initiative.
  - The Partnership for Global Infrastructure and Investment (PGII) unveiled in Elmau during the G7 Summit relaunches a scheme unveiled at last year's G7 talks in England.
  - The infrastructure plan was first announced in June 2021 during last year's G7 Summit in the UK. Back then, US President Joe Biden had called it the **Build Back Better World (B3W) framework**. However, it did not register much progress and details regarding the plan's time period or funding source were unclear.
  - The initiative will be geared towards tackling climate change, improving global health, achieving gender equity and building digital infrastructure.

**Partners hip for Global Infrastructure and Investment**

- Essentially, G7 countries, the US, Canada, Italy, the UK, France, Germany, and Japan, and the EU have noted the infrastructure projects being undertaken and funded by China at a global level and decided to present their alternative mechanism for it.
- The stated purpose of both the PGII and the BRI is to help secure funding for countries to build critical infrastructure such as roads, ports, bridges, communication setups, etc. to enhance global trade and cooperation.
- The G7 say their initiative is meant to be transparent, focused on building climate change- resilient infrastructure, and help in achieving objectives of gender equality and health infrastructure development. Around a dozen projects are already underway, with financing from both government and the private sector.
- The US president mentioned that the fund does not mean "charity or aid", but loans, and will be beneficial for both the countries lending and receiving them.

**G20 Logo**

Logo is inspired from the vibrant colours of India's national flag – saffron, white and green, and blue. It juxtaposes planet Earth with the lotus, India's national flower that reflects growth amid challenges. The Earth reflects India's pro- planet approach to life, one in perfect harmony with nature. Below the G20 logo is "Bharat", written in the Devanagari script.

**The theme "Vasudhaiva Kutumbakam" or "One Earth One Family One Future"**

The theme name is drawn from the ancientSanskrit text of the Maha Upanishad. It affirmsthe value of all life – human, animal, plant, and microorganisms – and their interconnectednesson the planet Earth and in the wider universe. It also spotlights LiFE (Lifestyle for Environment).

**Where are funds being directed under the plan?**

- In India, the US International Development Finance Corporation, the development bank of the country, will invest up to $30 million in the Omnivore Agritech and Climate Sustainability Fund 3, described as an impact venture capital fund that invests in entrepreneurs building the future of agriculture, food systems, climate, and the rural economy.

The fund will invest in companies that "increase food security and promote both climate resilience and climate adaptation in India, as well as improve the profitability and agricultural productivity of smallholder farms." Apart from India, projects have been announced in countries across West Africa, Southeast Asia, and South America.

# Miscellaneous

## Black sea grain initiative:

Recently, Russia has decided to re-join the Black Sea Grain deal.

- Ukraine is among the largest exporters of wheat, maize, rapeseed, sunflower seeds, and sunflower oil, globally and directly approaches Russia and Europe along with grain importers from the Middle East and North Africa through Black Sea Ports.
- Russia's action in Ukraine has led to huge grain wasted and ships unable to secure safe passage to and from Ukrainian ports, and land routes unable to compensate leading to the situation of food inflation, not in just Russia or Ukraine but food price rise around the world.
- Combined with increases in the cost of energy, developing countries facing the brink of debt default and famine.

**About Black Sea Grain Initiative** An agreement between the UN, the Russian Federation, Turkey and Ukraine the Black Sea Grain Initiative allows exports from Ukraine of grain, other foodstuffs, and fertilizer, including ammonia, to resume



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through a safe maritime humanitarian corridor from three key Ukrainian ports: Chornomorsk, Odesa, and Yuzhny/Pivdennyi, to the rest of the world. The central idea was to calm markets by ensuring an adequate supply of grains, thereby limiting food price inflation.

**Joint Coordination Centre (JCC)**

A Joint Coordination Centre (JCC) was established in Istanbul to implement the Black Sea Grain Initiative, comprising senior representatives from the Russian Federation, Türkiye, Ukraine, and the United Nations.

- All commercial ships are required to register directly with the JCC to ensure appropriate monitoring, inspection and safe passage.
- Post -inspection accorded by the JCC post-inspection inbound and outbound ships (to the designated corridor) transit as per a schedule.
- A total de-mining along the Ukrainiancoastline was rejected as it could lead to vulnerability to Russian attacks.
- Military ships require consultation with the parties and authorisation of the JCC otherwise no military ships or unmanned aerial vehicles can approach the corridor closer than a pre- decided distance agreed upon by the JCC.
- In suspicious cases, the JCC would provide assistance to the crew or conduct an inspection against security guarantees.



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# SOCIAL ISSUES

## Growth and Development

### Natural Resource Accounting (NRA)

**News Excerpt**

Recently, the **Comptroller and Auditor General of India** has stated to release a **report** on Natural Resource Accounting (NRA).

**Key Facts**

- Conventional accounting captures data only of the measurable economic activity and doesn't weigh environmental inputs. NRA intends to interplay between the natural environment and the economy.
- NRA refers to the method of calculating the monetary value of natural assets whose environmental degradation and depletion are triggered by economic activities (Environmental Opportunity Cost).
- The need for NRA was first identified at the 1970 **Stockholm Conference** of the United Nations (UN) when the relationship between economic development and environmental degradation was addressed for the first time.
- The Brundtland Commission articulated the idea of a close relationship between the environment and economic activities in 1987, which was followed by environmental accounting and the Rio de Janeiro Earth Summit in 1992.
- The UN has adopted (2012) the System of Economic and Environmental Accounting (SEEA) - Central Framework which is the latest internationally accepted framework, for NRA. NRA has deep inter-linkages with the **SDGs as 4 out of the 17** goals directly relate to management of natural resources and their accounting.
- Government Accounting Standards Advisory Board (GASAB) was constituted by the CAG of India in 2002 with representation from all accounting services in GoI, regulatory authorities like RBI, ICAI and State Governments on rotation for improving standards of Governmental accounting and financial reporting.
- CAG of India is a member of an international body of Supreme Audit Institutions, called WGEA (Working Group on Environmental Auditing), which suggested (2010) that the audit institutions should aid their countries to adopt Natural Resources Accounts.
- GASAB prepared a Concept Paper on NRA in July 2020, inter-alia, envisaging short, medium and long term goals starting from 2020:
- Besides preparing the paper, GASAB and CAG decided to continue its engagement to assist the State Governments in the preparation of Asset Accounts which is the first of the four stages in the preparation of Natural Resource Accounts.
- NRA Cells in States were also constituted in all 28 States and 2 UTs (Delhi and JK) with unique collaboration of Accountants General (Audit, A&E) and the State Government Departments to steer the project.
- As on date, all 28 States and 1 UT (J&K) have prepared the Asset Accounts for 2020-21. They are being verified and validated by various stakeholders including the State Governments and our field Offices.
- To ensure automated collection and compilation of data from 2022-23, GASAB has developed SOPs for guiding the States. Besides the dataflow, the Guidelines and SOPs also suggest recommendations for end-to-end mapping of supply and use of resources which would help the States in mopping up due revenues due from these resources and also plug the leakage and wastage.

### Multi-State Cooperatives

**News-Excerpt**

The Union Cabinet approved the Multi-State Cooperative Societies (Amendment) Bill, 2022, which seeks to enhance transparency and accountability, as well as improve ease of doing business, among others.

**About Multi State Cooperative Societies ACT, 2002:**

- It is an Act to consolidate and amend the law relating to co-operative societies, with **objects not confined to one State and serving the interests of members in more than one State**.
- It aims to facilitate the voluntary formation and democratic functioning of co-operatives.

**Cooperative societies in India:**



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- Cooperatives are organisations formed at the grassroots level by people to harness the power of collective bargaining towards a common goal.
- As per government data, there are around 8,55,000 cooperatives in India. Of this, 1,77,000 are credit societies, 700,000 are cooperative societies, 17 national-level cooperative unions, and 33 state cooperative banks.
- There are more than 63,000 active Primary Agricultural Credit Society (PACS) with more than 12 crore members. Around 91 per cent of the villages have cooperatives.

**Constitutional provisions related to Cooperatives:**

- **Article 19(1)(c)** guarantees freedom to form association or union or cooperatives subject to certain restrictions.
- **Article 43B under Directive Principles of State Policy (DPSP)** of the constitution says that state shall endeavour to promote voluntary formations, autonomus functioning, democratic control and professional management of cooperative societies.
- **Part IX-B of the constitution inserted by 97th Constitutional Amendment** deals with incorporation, terms of members of board and effective managements of cooperative societies.

**How cooperatives are governed?**

- ✓ Agriculture and cooperation are in the **state list,** A majority of the cooperative societies are governed by laws in their respective states, with a Cooperation Commissioner and the Registrar of Societies as their governing office.
- ✓ In 2002, the Centre passed a Multi State Cooperative Societies Act that allowed for registration of societies with operations in more than one state.
- ✓ The Central Registrar of Societies is their controlling authority, but on the ground the State Registrar takes actions on his behalf.

**Analysis**

The government formed **Ministry of Cooperation** in 2021 to provide a separate administrative legal and policy framework for strengthening the cooperative movement in the country.

## National Intellectual Property Awareness Mission (NIPAM)

**News Excerpt**

National Intellectual Property Awareness Mission (NIPAM) has achieved target of imparting Intellectual Property (IP) awareness and basic training to 1 million students on 31st July 2022, ahead of the deadline which was 15 August 2022.

**Key Facts**

- NIPAM, a flagship program to impart IP awareness and basic training, was launched on 8 Dec 2021 as a part of *Azadi Ka Amrit Mahotsav''* celebrations.
- The program is being implemented by Intellectual Property Office, the Office of Controller General of Patents, Designs and Trade Marks (CGPDTM), **DPIIT** (Department for Promotion of Industry and Internal Trade) **Ministry of Commerce and Industry**.
- IP rights are outlined in Article 27 of the Universal Declaration of Human Rights, which provides for the right to benefit from the protection of moral and material interests resulting from authorship of scientific, literary or artistic productions.
- India is also a member of World Intellectual Property Organization (WIPO), a body responsible for the promotion of the protection of intellectual property rights throughout the world.
- The importance of intellectual property was first recognized in the Paris Convention for the Protection of Industrial Property (1883) and the Berne Convention for the Protection of Literary and Artistic Works (1886). Both treaties are administered by the World Intellectual Property Organization (WIPO).

**Issues associated with IPR:**

- **The Product Patent Process:** The patent is given for the process via which one makes the product rather than the product which reduces monopoly in the market. India is a part of Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement, this agreement needs that all members should change their patent regime from giving patent to process to giving patent to the product.
- India continues to remain on the **United States Trade Representative's (USTRs) Priority Watch List** for alleged violations of intellectual property rights (IPR).



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- In its latest **Special 301**report released by the United States Trade Representative (USTR), the US termed India as one of the worlds most challenging major economies" with respect to protection and enforcement of IP.
- **Protecting Traditional Knowledge:** The Indian government has to protect the traditional knowledge by not allowing MNCs to take over the patents, to increase make in India and to not lose the employment of Indians. The government has specially made a Traditional Knowledge Digital Library (TKDL) to prevent patenting on traditional knowledge.

**National Organ and Tissue Transplant Organisation (NOTTO)**

It is a national-level organization set up under the Ministry of Health and Family Welfare and functions as an apex center for coordinating all activities and networking for the procurement and distribution of organs and tissues and maintaining of registry of organs and tissue donations and transplantation. At the state level and regional level it is State Organ and Tissue Transplant Organization (SOTTO) and Regional Organ and Tissue Transplant Organization (ROTTO).

## Organ Donation in India

### News Excerpt

Recently, as per data submitted in the Parliament, the number of Organ Donations was highest in 2021 but deceased donations are still uncommon in India. As per data from Organ India (NGO), In 2019, India had a Deceased Organ Donation rate of 0.52 donors per million population, far below the global average of 7.91 donors per million population.

**Brain Stem Death**

It is a condition of absent brain stem reflexes but the presence of few cortical as well as hypothalamic integrity such as osmoregulation where a person permanently loses the potential for consciousness and the capacity to breathe. A person's organs with brain stem death can survive for 2-3 days if kept on a ventilator as the heart continue to beat. Thus, organs can be surgically removed with the family's consent.

### Key Facts

Data suggest that only 0.01% of Indians have given consent to donate their organs after their death.

According to the Global Observatory on Donation and Transplantation, India performed the third-highest number of transplants in the world in 2019. At the same time, India reported a dismal organ donation rate of 0.65 per million population.

There is also a geographical skew in deceased donations. This could be because most organ transplant and harvesting centers are concentrated in a few states.

**Process of becoming an organ donor**

- Taking pledge on the NOTTO website.
- Mailing a filled-in Form 7 of the Transplantation of Human Organs Act.
- Consent of family is required after the death of the individual so it is important for donors to explain their beliefs to the members of their family.
- The organs cannot be harvested if the family refuses.

It is estimated that 1.5-2 lakh persons need kidney transplants every year and only around 8,000 get one. Same is the case for liver transplants and heart transplants.

The Government is implementing **National Organ Transplant Programme (NOTP)** to promote organ donation and transplantation across all States and UTs.

Organ donation in India is regulated under the Transplantation **of Human Organs Act (THOA), 1994, and Transplantation of Human Organs and Tissues Rules, 2014.** Under the act, Brain death is identified as a form of death.

## Urban Planning: Pariman Portal

### News Excerpt

Recently, PARIMAN portal was made open to the public of NCR which is developed National Informatics Centre (NIC).

### Key Facts

- Geo-Portal for NCR known as PARIMANwas launched in 2021 by **NCRPB and Union Minister for Housing &Urban Affairs.**
- The National Capital Region Planning Board (**NCRPB**), constituted in 1985 under the provisions of NCRPB Act, 1985, is a **statutory body** functioning under the **Ministry of Urban Development, Government of India**. NCRPB has a mandate to systematically develop the National Capital Region (NCR) of India.



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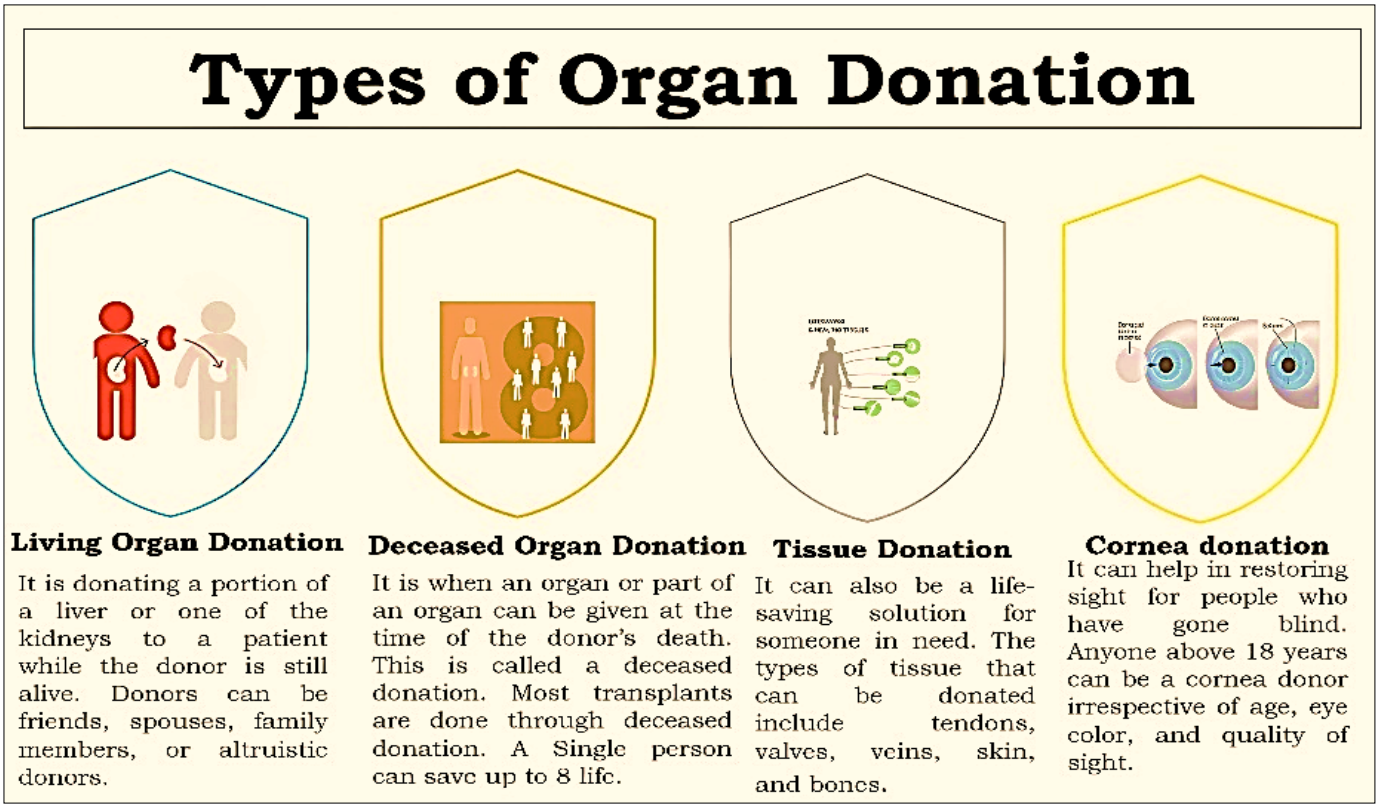
- The NCR spreads over an area of 33,578 sq. km. The constituent areas of the National Capital Region are:
- Haryana Sub-region – Faridabad, Gurgaon, Rohtak, Sonepat, Rewari, Jhajjar, Mewat and Panipat districts of Haryana (40.0 percent of NCR area);




- Rajasthan Sub-region – Alwar district of Rajasthan (23.3 percent of NCR area);
- Uttar Pradesh Sub-region – Meerut, Ghaziabad, Gautam Buddha Nagar, Bulandshahr and Baghpat districts of UP (32.3 percent of NCR area)

**About the PARIMAN portal**

- NCR Geo-portal (PARIMAN) is a robust system to facilitate better sub-regional and local planning. This contains various layers collected from authentic sources.
- The portal has many Base Maps, Satellite Image services and Night Light Data of different time spans. Terrain map provides the Elevation Profile of a route.
- Administrative units like State Boundaries to Village Boundaries, various Headquarters to Habitations, Parliamentary and Assembly Constituency Boundaries are integrated in this portal.
- Other layers include Road, Rail and Metro Networks, Points of Interest like Education, Health, Banking, Post Office, Power and Telecom, Industries, Tourism, River and Canal Networks and many more. Area of Interest function facilitates a comprehensive view for any information of a particular State or District or Tehsil.

## Gig Workforce in India: NITI Aayog

**News Excerpt**

**Key Facts**

- In a gig economy, temporary, flexible jobs are commonplace and companies tend to hire independent contractors and freelancers instead of full-time employees. A gig economy undermines the traditional economy of full-time workers who often focus on their career development.
- Gig workers – those engaged in livelihoods outside the traditional employer-employee arrangement – can be broadly classified into platform and non-platform-based workers.
- Platform workers are those whose work is based on online software apps or digital platforms.



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- Non-platform gig workers are generally casual wage workers and own account workers in the conventional sectors, working part-time or full time.
- The study estimates that in 2020- 21, 77 lakh (7.7 million) workers were engaged in the gig economy.
- The gig workforce is expected to expand to 2.35 crore (23.5 million) workers by 2029-30.
- At present about 47% of the gig work is in medium skilled jobs, about 22% in high skilled, and about 31% in low skilled jobs.
- Trend shows the concentration of workers in medium skills is gradually declining and thatof the low skilled and high skilled is increasing. It may be expected that while the domination of medium skills would continue till 2030, gig work with other skills will emerge.
- The report points out that the **employment elasticity to GDP growth for gig workers was above one throughout the period 2011-12 to 2019-20,** and was always above the overall employment elasticity.

# Vulnerable section of society

## SMILE-75 Initiative

**News Excerpt**

Ministry of **Social Justice &Empowerment** has identified 75 Municipal Corporations under the SMILE**(Support for Marginalized Individuals for Livelihood and Enterprise)**-75 initiative, in collaboration with **NGOs and other stakeholders,** that will cover several comprehensive welfare measures for persons who are engaged in the act of **begging**.

**Kye Facts**

- According to census 2011, over 4.2 lakh beggars are in India, **West Bengal** followed by Uttar pradesh and Bihar has most number of beggars. Among UTs **Delhi** has the largest number of beggars, and in North Eastern states **Assam** has the most number of Beggars.
- SMILE, includes **two sub-schemes – Central Sector Scheme for Comprehensive Rehabilitation for Welfare of Transgender Persons and Central Sector Scheme for Comprehensive Rehabilitation of persons engaged in the act of Begging.**
- A total budget of Rs.100 crore is allocated by the Ministry of Social Justice &Empowerment for the SMILE project (2025-26),
- The sub-scheme, Central Sector Scheme for Comprehensive Rehabilitation for Welfare of Transgender Persons includes providing scholarships for transgender students studying in IX and till post-graduation to support them in completing their education.
- It further includes the Housing facility in the form of Garima Greh ensures food, clothing, skill development opportunities, medical support etc. to both the marginalised community.
- The National Portal &Helpline will ensure important information and solutions to them.
- Begging is in State list, and there is no central law to govern Begging.
- Many states and Union Territories used the **Bombay Prevention of Begging Act, 1959** as the basis for their own laws.
- The Act **defines a beggar** as anyone having no visible means of subsistence, and wandering about or remaining in any public place in such condition or manner, as makes it likely that the person doing so exists by soliciting or receiving alms
- The Bombay Act enables police to arrest individuals without a warrant and also empowers magistrates to detain them (including family) in a detention centre for up to 3 years on the commission of the first offence, and up to 10 years upon the second offence. Any individual not abiding by the rules is liable for punishment including imprisonment.
- **The Supreme Court** refused to ban the act of begging and stated that it is a socio-economic problem, and people are forced to beg to eke out their livelihood due to the absence of education and employment.
- **The Delhi High Court** has decriminalised beggary by striking down Delhi Prevention of Begging Rules, 1960, formulated under the Bombay Prevention of Begging Act, 1959 as unconstitutional.



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## PM-DevINE

**News Excerpt**

The Union Cabinet has approved the **Prime Minister's Development Initiative for North East Region (PM-DevINE)**, The scheme will be operational for the remaining four years of the 15th Finance Commission, from **2022-23 to 2025-26,** and will have an outlay of Rs **6,600 crore.**

**Key Facts**

- PM-DevINE is a **Central Sector Scheme** with 100% Central funding implemented by **Ministry of Development of North Eastern Region (DoNER)** through North Eastern Council or Central Ministries/ agencies.
- It aims to create infrastructure, support industries, social development projects and create livelihood activities for youth and women, thus leading to employment generation.
- Measures would be taken to ensure adequate operation and **maintenance** of the projects sanctioned under PM-DevINE making them sustainable.
- To limit construction risks of time and cost overrun, falling on the Government projects would be implemented on **Engineering-procurement-Construction (EPC) basis**, to the extent possible.
- Efforts will be made to complete the PM-DevINE **projects by 2025-26** so that there are no committed liabilities beyond this year.
- It will be ensured that there is **no duplication of project** support under PM-DevINE with any of the other schemes of MDoNER or those with any other Ministry/Department.
- PM-DevINE is an additionality to the quantum of resources available for the development of the NER. **It will not be a substitute for existing Central and State Schemes**.

**Objectives of PM-DevINE**

- Fund infrastructure convergently, in the spirit of PM Gati Shakti.
- Support social development projects based on felt needs of the NER.
- Enable livelihood activities for youth and women;
- Fill the development gaps in various sectors.

## Performance Grading Index for Districts for school system

**News Excerpt**

The **Union Ministry of Education** had recently released the Performance Grading Index for Districts (PGI-D) in the country for the sessions 2018-19 and 2019-20.

**Key Facts**

- **The Performance Grading Index (PGI)** is a tool to provide insights on the **status of school education in States and UTs** including key levers that drive their performance and critical areas for improvement. **Department of School Education and Literacy (DoSEL)** has designed the PGI to catalyse transformational change in the field of school education.

**How is PGI worked out?**

An 83-indicator-based PGI for District (PGI-D) was designed to grade the performance of all the districts in school education.

The data is filled by the districts through the online portal. The PGI-D is expected to help the state education departments to identify gaps at the district level and improve their performance in a decentralized manner.

The indicator-wise PGI score shows the areas where a district needs to improve. The PGI-D will reflect the relative performance of all the districts in a uniform scale which encourages them to perform better.

It further stated that the PGI-D structure comprised a total weightage of 600 points across 83 indicators, which were grouped under six categories– Outcomes, Effective Classroom Transaction, Infrastructure Facilities and Students Entitlements, School Safety and Child Protection, Digital Learning, and Governance Process.

**Key finding of the index**

- The PGI-D report graded 725 districts in 2018-19 edition and 733 districts in 2-19-20. The report showed that 33 States and UTs have improved their PGI score in 2019-20 compared to the previous year with Andaman and Nicobar Islands, Punjab and Arunachal Pradesh have improved their score by more than 20%.



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- Rajasthan leads the way in performance in school education. Three districts namely Sikar, Jhunjhunu and Jaipur from Rajasthan achieved the second grade, while the number of districts in the third Uttam grade rose from 49 to 86 during 2018-29 and 2019-20.

## Displacement of Tribes

**News Excerpt**

The cost of development in India often includes tribes displacement. One such issue emerged in Telangana where displacement of the Gutti Koya tribes has become a cause of concern.

**Key Facts**

As per the Expert Group on Prevention of Alienation of Tribal Land and its Restoration setup by the Government of India about 60 million displaced people from independence to 2000, out of which 47 percent is tribal population.

**About Gutti Koya**

- The majority of them are found in the forests of **Bhadradri Kothagudem, Mulugu, Jayashankar Bhupalpally, and Khammam districts** in Telangana and few have settled in Andhra Pradesh in the forests of East and West Godavari districts.
- Presently they are classified as **Other Category** and **not as tribals in Telangana.**
- They have not seen much development, have no electricity, no proper roads, and medical facility is limited to
- Auxiliary Nurse Midwives (ANMs) and Accredited Social Health Activists (ASHA) who visit them.
- Most of the families donot have ration cards or NREGA job cards.

**Fifth Schedule(Article 244(1))**

- It has provisions relating to the administration of Scheduled Areas other than in Northeast India.
- Areas can be designated as well as can be ceased as Scheduled Areas on the order of the President.
- The Governor of such state should submit a report to the President regarding the administration of Scheduled Areas.
- It provides for the creation of a Tribes Advisory Council (TAC) in such states to advise on matters pertaining to the "welfare and advancement" of the Scheduled Tribes "as may be referred to them by the Governor".
- It grants extensive powers to the Governor who can direct that a law enacted by the Parliament or the State Legislative Assembly shall not apply to a Scheduled Area, or may apply subject to certain amendments or restrictions as he/she specifies after advice from TAC and President's final assent.

## Old and New Pension Schemes

**News Excerpt**

In recent times, the revival of the Old Pension Scheme (OPS) has become a center stage of Indian politics, especially after the state of Rajasthan and Chhattisgarh already reverted to the Old Pension Scheme.

**Key Facts**

**Understanding OPS and NPS**

OPS or PAYG (Pay as you Go) scheme is an **unfunded pension scheme**(employee do not have to contribute) where current revenues fund pension benefits.

PAYG involved a direct transfer of resources **from the current generation of taxpayers to fund the present pensioners.**

**Causes behind discontinuance of PAGY scheme:**

- Unviable pension debt cost for the governments (because of Increasing life expectancy)
- It gave incentive for early retirement, depriving government of the service of employees.
- Pension sector reforms in India started with the OASIS report in 1999 as part of the financial sector reforms. The basic aim of these reforms was to transform the financial markets on free market principles.
- In 2003, the Government of India decided to introduce New Pension Scheme (NPS) (based on Project OASIS report) for all those who joined government services after January 1, 2004. For states, **it was made voluntary**but within 2 years 27 states joined the scheme.
- Contribution in NPS trust of employee: Employees (10% of Basic Pay)Government (14% of Basic Pay)



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- The NPS Trust is regulated by **Pension Fund Development Regulatory Authority (PFRDA**) through the PFRDA (NPS Trust) regulations, 2015. PFRDA appoints the Chairman, Trustees and the CEO of the NPS Trust.
- Contribution to NPS trust **is invested in G-Sec, Corporate bonds, shares depending on employee preferences via fund managers (like LIC Pension fund, Kotak Mahindra Pension Fund).**

**Viability of OPS**

There are several reasons which point toward the fact that OPS is not a viable option for India these include:

- **Overstretched State Government Finances:** High contribution to pension from state government's revenue means that they have little fund left to invest in development projects like building roads and schools.
- Almost 56% of the expenditure of the states that is committed (interest payments, salary, and pension payments) is met out of state revenue receipts. In some states like Punjab, Kerala, West Bengal, and Andhra Pradesh it is even higher than 70% of the state's revenue receipts. This means there is very less funding available for development, for example, the Government of Rajasthan's decision to revert to OPS would mean that 6% of families in Rajasthan will control 56% of state revenue while the remaining 94% have to survive on the reaming 44%.
- **Unsustainable debt burden:** According to an estimate If all Indian states migrate to OPS then liabilities will be around 13% of India's GDP.
- **Demographic Factor:** India's demographic profile is currently undergoing a structural change with declining fertility, increasing longevity, and ageing Southern States coupled with young Northern States. An increase in the old-age dependency ratio imposes significant demands on the working-age population to maintain the intergenerational flow of benefits to the pensioners.

**Problems associated with NPS**

- The uncertainty associated with the pension amount on retirement.
- Impact of market fluctuations on the pension vis-à-vis stable returns to the inflation-linked pension of the OPS.
- Employee and Government contributions (either or both) are not being transferred for investment in time.
- A part of maturity amount is taxable which makes it unpopular.
- NPS is complex with multiple options which makes it difficult for many employees to understand it.
- Lack of any guaranteed pay out feature deters risk averse sections.

**Government Initiatives to make NPS more attractive**

- The Government now makes a 14% matching contribution against the 10% monthly contribution of employees.
- A subscriber would be adequately compensated for any non-deposit or delayed deposit of contributions during 2004-12.
- The employee has now the exclusive right to choose the fund manager and his investment pie.
- 60% of the corpus is tax-free and the entry age has now been raised to 70 years

# Women and Child

## India in Global Gender Gap Index 2022

**News Excerpt**

The Global Gender Gap Index for 2022 was released by the World Economic Forum (WEF) ranked India at 135 out of 146 countries. In 2021, India was ranked 140 out of 156 countries. Iceland retained its place as the world's most gender-equal country, followed by Finland, Norway, New Zealand and Sweden.

**Key Facts**

- **Political Empowerment** - This includes metrics such as the percentage of women in Parliament, the percentage of women in ministerial positions etc. Of all the sub-indices, this is where India

**What is the Global Gender Gap Index?**

1. The Global Gender Gap index "benchmarks the current state and evolution of gender parity across four key dimensions (Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment)".
2. It is the longest-standing index, which tracks progress towards closing these gaps over time since its inception in 2006.
3. On each of the four sub-indices as well as on the overall index the GGG index provides scores between 0 and 1, where 1 shows full gender parity and 0 is complete imparity.
4. The cross-country comparisons aim to support the identification of the most effective policies to close gender gaps.



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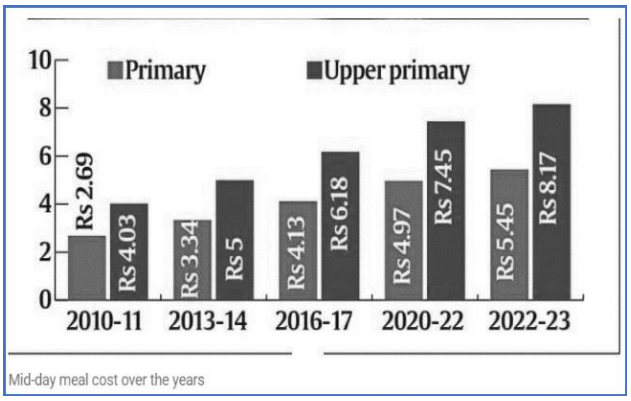
ranks the highest (48th out of 146). India's score is above the global average in this category.

- **Economic Participation and Opportunity** -This includes metrics such as the percentage of women who are part of the labour force, wage equality for similar work, earned income etc. Here, too, India ranks a lowly 143 out of the 146 countries in contention even though its score has improved over 2021 from 0.326 to 0.350.
- **Educational Attainment** -This sub-index includes metrics such as literacy rate and the enrolment rates in primary, secondary and tertiary education. Here India ranks 107th out of 146, and its score has marginally worsened since last year. In 2021, India was ranked 114 out of 156.
- **Health and Survival** - This includes two metrics: the sex ratio at birth (in %) and healthy life expectancy (in years). In this metric, India is ranked the last (146) among all the countries. Its score hasn't changed from 2021 when it was ranked 155th out of 156 countries.

## PM-POSHAN Scheme (Mid-Day Meal Scheme)

**News Excerpt**

After a gap of over two years, the cooking cost per child under the mid-day meal scheme is set to rise by 9.6 per cent, with the **Ministry of Finance approving the hike** proposed by a committee which has recommended inter-ministerial deliberations on linking the number of LPG cylinders per school to enrolment.



Mid-day meal cost over the years

**Key Facts**

- The last hike was seen in early 2020.
- The prices of ingredients such as pulses, salt, vegetables, condiments, and fuel needed to prepare cooked meals are included in cooking cost.

**About Pradhan Mantri Poshan Shakti Nirman (PM POSHAN):**

- Under the scheme, one hot cooked meal is provided in the Government and Government – aided Schools from **2021-22 to 2025-26**.
- The Scheme is being implemented by the **Ministry of Education.**
- Under the Scheme, there is provision of hot cooked meal to children of pre-schools or Bal Vatika (before class I) in primary schools also in addition to the 11.80 crore children of classes I to VIII studying in 11.20 lakh schools.
- The main objectives of the PM POSHAN Scheme (earlier known as Mid-Day Meal Scheme) are two fold viz. eliminating hunger and imparting education by improving the nutritional status of eligible children in Government and Government-aided schools as well as encouraging poor children, belonging to disadvantaged sections, to increase retension and attendence.

**Malnutrition in India: A Snapshot**

- ✓ As per Food and Agricultural Organisation (FAO), the Sub-Saharan countries of Africa have the highest prevalence of hunger but **India has the highest number (one quarter) of undernourished (hungry) people in the world**.
- ✓ According to NFHS-5 (2019-21) report the **percentage of obese** children and adults, **rose** in **India in the last five years**. Moreover, as per the survey, **several of India's nutritional indicators have shown minor improvement,** since NFHS-4 was conducted in 2015-16. The report shows:
  - Nearly three per cent decline in child stunting – from 38.4 (NFHS-4) to 35.5 (NFHS-5).
  - While child wasting has seen a 1.7 per cent decline, the percentage of children under five who are severely wasted has increased by 0.2 per cent.
  - The percentage of underweight children has also reported a 3.7 per cent drop.

**What is mid-day meal scheme?**

- ❖ The mid-day meal scheme was launched by the central government in 1995 to provide free cooked meals to children in primary schools (classes 1-5; age 6–10 years).
- ❖ Initially, states did not participate in the scheme, but between 1999 and 2004, the programme's coverage increased manifold, largely due to an order from the Supreme Court of India directing state governments to provide cooked mid-day meals in primary schools.



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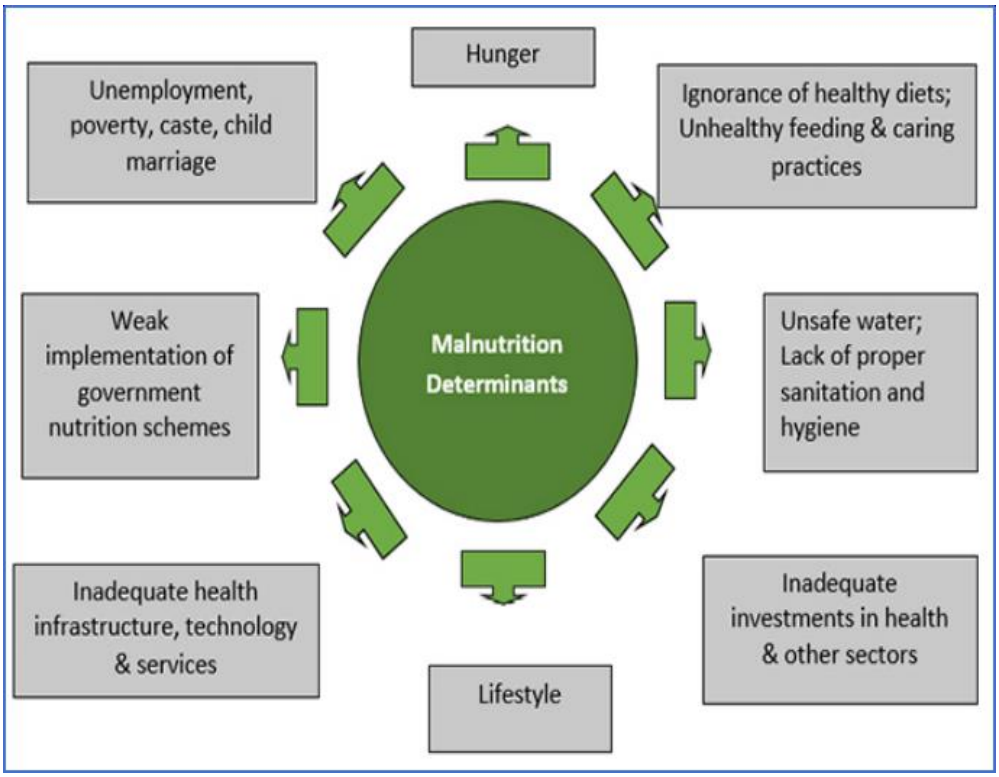
- The percentage of overweight children under the age of 5, have increased from 2.1 per cent (NFHS-4) to 3.4 per cent which is a 1.3 per cent rise.

**Steps taken by Government to address the issue of hunger and malnutrition:**

- **Anganwadi Services, Scheme for Adolescent Girls and Pradhan Mantri Matru Vandana Yojana (PMMVY) under the Umbrella Integrated Child Development Services (ICDS) Scheme**.
- Children with Severe Acute Malnutrition are treated at the Nutrition Rehabilitation Centres established by the Ministry of Health and Family Welfare.
- **POSHAN Abhiyaan** launched on 8th March 2018, aims to reduce malnutrition in the country by adopting a synergised and result oriented approach.
- **Mission Poshan 2.0**is an integrated nutrition support programme which has been announced in budget 2021-2022 for all States/UTs. It seeks to strengthen nutritional content, delivery, outreach and outcomes with focus on developing practices that nurture health, wellness and immunity to disease and malnutrition.




- To improve nutritional content in food products, steps are being taken towards universal **food fortification**. A **proposed policy would provide for adding essential vitamins and minerals (iron, folic acid, vitamin, iodine) to food items (rice, wheat flour, salt, edible oil, milk)** should be sold in markets.
- The Right to Food Campaign (launched in March 2014), which is an informal network of individuals and organisations, is the result of public interest litigation. Under the campaign, organised efforts are made to persuade State governments to attend to the most pressing demands of society, including proper nutrition.

## Smart Phones and Indian Children

**News Excerpt**

Indian children are the youngest to reach mobile maturity, said a McAfee study conducted amongst parents and children across 10 geographies.

**Key Facts**

- Smartphone use in the country among children between the age of 10-14 is 83%, which is 7% higher than the international average of 76%.
- This has resulted in several negative impacts on children such as:
- **Increase in online risk:** It may lead to cyberbullying of kids in India as they have high exposure to online risks. Additionally, some 22% of Indian children experienced cyberbullying at some time which was notably 5% higher than the global average of 17%, found the study. Both children and parents are usually unaware of cyber security rules.
- **Financial Risk:** Chances of Children leaking financial information are very high. They can engage in a private conversation without knowing their real identity.



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- **Phantom Pocket vibration syndrome:** Phantom pocket vibration syndrome is a condition where many children and a few adults have a false feeling that their cell phone is vibrating in their pockets when its not. According to recent research, the brain tissues of children absorb about two times more microwave radiation than that of adults, and other studies have reported that the bone marrow of children absorbs ten times more microwave radiation than that of adults.
- Excessive screen time can be associated with symptoms of stress, anxiety, depression, and addiction.
- Obesity due to sedentary screen time, decrease in focus and attention spans, constant feeling of fatigue, feeling of distance from parents are some other harmful effects of smartphone addiction.

## SARAS Food Festival

**News Excerpt**

SARAS Food festival is under the **Ministry of Rural Development** and is a step towards **Atma nirbhar Bharat**.

**Key Facts**

- SARAS products are prepared by women of self-help groups.
- The aim is to get at least 25% of all sales by women's self-help groups through e-commerce portals annually. The e-commerce portal www.esaras.in for better and more effective marketing of Ethnic and homemade handicrafts, paintings, toys, food, and other items will be the center of attraction.
- Each woman beneficiary must save at least one lakh rupees per annum through the sale of local products.
- The Ministry has already signed agreements with e-commerce giants like Amazon, and Flipkart
- There have been efforts by States/UTs also in getting SHGs products registered on e-commerce platforms. e.g, Flipkart, Amazon and Meesho etc.
- People can enjoy delicious cuisines of 18 States at Saras Food Festival.

## Abortion Laws around the World

**News Excerpt**

With the US Supreme Court overturning the landmark 1973 Roe v Wade decision that established a constitutional right to an abortion, the United States is now among the few dozen countries that have severely restricted access to the procedure. As of now, abortions are illegal or heavily restricted in at least 11 US states.

**Key Facts**

**What is India's abortion policy?**

- India's Medical Termination of Pregnancy Act, 1971 allows abortion until 20 weeks of pregnancy.
- An amendment in 2021 raised the ceiling for abortions to 24 weeks for special categories of pregnant women such as rape or incest survivors that too, with the approval of two registered doctors.
- There is no upper gestation limit for the procedure in cases of foetal disability as long as it is approved by a medical board of specialist doctors set up by the governments of states and union territories.

## Women and STEM

Coinciding with the celebrations of 75 years of Independence, the government has chosen to appoint a woman to the topmost post in the Council of Scientific and Industrial Research (CSIR).

**What is STEM?**

STEM is a common abbreviation for four closely connected areas of study: Science, Technology, Engineering and Mathematics. The fields are often associated due to the similarities they share both in theory and practice Council of Scientific and Industrial Research (CSIR), underlined a significant trend — official data show the participation of women in science research has been generally increasing over the past two decades in the country.

**Status of women participation in STEM in India:**

- More than a quarter — 28% — of participants in R&D projects in 2018-19 were women, up from 13% in 2000-01 due to various initiatives taken by successive governments.



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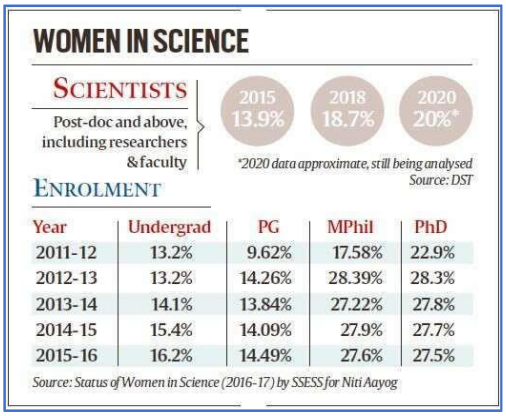
- The number of **women principal investigators** in R&D had risen more than four times from 232 in 2000-01 to 941 in 2016-17.
- The percentage of women among researchers went from 13.9% in 2015 to 18.7% in 2018.
- There were fewer women researchers in engineering and technology (14.5%) compared with the natural sciences and agriculture (22.5% each), and health sciences (24.5%).
- The percentage of women researchers in the social sciences and humanities is, however, much higher at 36.4%.
- Results of the All-India Survey on Higher Education (AISHE) 2019 showed a 53% and 55% participation of women in science education at the Bachelors and Masters levels respectively, numbers that are comparable with many developed countries. But at doctoral level, women graduates (44%) lagged behind men (56%).




**Global status of women and STEM:**

- World Bank data showed that in 107 of 114 economies, there are fewer female than male STEM graduates.
- **Globally, 18% of girls in tertiary education are pursuing STEM studies compared to 35% of boys.**
- Even within the STEM fields, women prefer to study life sciences and are less represented in majors like computer science and mechanical and electrical engineering.
- **Worldwide, only 33% of researchers are women**. Women account for just **22% of professionals working** in artificial intelligence and **28% of engineering graduates.**

## ASER Report 2022

**News Excerpt**

17th report of the ASER i.e., Annual Status of Education Report was released recently.

**Key Facts**

- This is an **annual** survey that aims to provide reliable annual estimates of children's schooling status and basic learning levels for **each state and rural district in India**(**since 2005)**.
- ASER is the **largest citizen-led survey** in India. It is also the only annual source of information on children's learning outcomes available in India today. Unlike most other large-scale learning assessments, ASER is a **household-based rather than school-based** survey.
- This design enables all children to be included – those who have never been to school or have dropped out, as well as those who are in government schools, private schools, religious schools or anywhere else.
- In 2022, the ASER survey covered 7 lakh children in 19,060 villages across 616 districts in the country.

**Highlights of the Report**

- As the pandemic ebbed, school enrolment touched a record high in 2022 — 98.4% children in the 6-14 age group are now in school, up from 97.2% in 2018, when the last full pre-pandemic survey was conducted by Pratham.
- The proportion of **girls not enrolled** in schools has also **reduced** across age groups. For girls aged 11-14, this share dropped from 4.1% in 2018 to 2% in 2022. Back in 2006, the share of out-of-school girls in this age bracket stood at 10.3 per cent.
- However, there is a **drop in learning levels** – foundational skills in reading and arithmetic – that has confirmed the worst fears about the pandemic and its impact on children.
- In 2022, the basic reading ability of children in Class 3 dipped by 6.8 percentage points (from 27.3% in 2018 to 20.5% in 2022), and that of students in Class 5 came down by 7.6 percentage points (from 50.4% in 2018 to 42.8% in 2022).
- There has also been a drop in numeracy levels, though not as steep as for reading skills.
- The proportion of children in Class 3 who could do at least subtraction fell from 28.2% in 2018 to 25.9% in 2022, and that of students in Class 5 fell from 27.9% in 2018 to 25.6% in 2022.



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- In Chhattisgarh, for instance, the proportion of Class 3 children who can read a Class 2 textbook had dropped to an alarming 12.3% in 2021, down from 29.8% in 2018, only to bounce back to 24.2% in 2022. In West Bengal, that number rose from 29.5% in 2021 to 33% in 2022.
- In the case of maths, the share of children in Class 3 in Chhattisgarh with the ability to solve basic problems fell from 19.3% in 2018 to 9% in 2021, only to rise to 19.6% in 2022. In Karnataka, that number rose from 17.3% in 2021 to 22.2% in 2022 and in West Bengal, from 29.4% in 2021 to 34.2% in 2022.
- The ASER report also highlights another trend that was reflected in other reports such as the governments UDISE+ data that came out last year. ASER 2022 states that nationally, the percentage of children aged 11 to 14 who are enrolled in government schools has risen from 65% in 2018 to 71.7% in 2022.

**All India Survey on Higher Education (AISHE)** Report Highlights

According to the (AISHE) released by the Education Ministry; crucial gains are made in closing the gender gap across different undergraduate programmes that suffered a setback in the pandemic year. Data show that the number of women for every 100 men enrolled across different Bachelor's programmes dropped in the academic year 2020-21.

The total student enrolment in higher education went up from 3.85 crore in 2019 to about 4.13 crore in 2020-21, an increase of nearly 29 lakh. Out of the total enrolled, 51.3% or 2.12 crore are male and 48.7% are women.

Overall, the Gross Enrolment Ratio (GER) in higher education for the age group of 18 to 23 years is 27.3% as against 25.6 % in 2019-20.

The GER for women is more than the GER for men – a trend that has been on since 2017-18. Gender Parity Index (GPI), the ratio of female GER to male GER, has increased from 1 in 2017-2018 to 1.05 in 2020-21.

At the postgraduate level, too, the number of women pursuing business administration, science, technology and commerce has gone down in 2020-21 as compared to 2019-2020 due to pandemic.

# Nutrition and Sanitation

## One Health

**News Excerpt**

Four multilateral agencies have launched a global One Health plan to better address threats to all living beings as well as the environment. The Quadripartite—comprising the United Nations (UN) Food and Agriculture Organization (FAO), the UN Environment Programme (UNEP), the World Health Organization (WHO), and the World Organisation for Animal Health — unveiled the five-year One Health Joint Action Plan.

**Key Facts**

**One Health Joint Action Plan**

The One Health Joint Plan of Action (2022-2026) seeks to improve the health of humans, animals, plants, and the environment while contributing to sustainable development. The Joint Plan of Action will create a framework and integrate systems and capacity to collectively better prevent, predict, detect and respond to health threats.

**The five-year plan outlines six action tracks:**

- Enhancing One Health's capacities to strengthen health systems.
- Reducing the risks from emerging and re-emerging zoonotic epidemics and pandemics
- Controlling and eliminating endemic zoonotic
- Controlling neglected tropical, and vector-borne diseases.
- Strengthening the assessment, management, and communication of food safety risks.
- Curbing the silent pandemic of antimicrobial resistance

**Global action plan on antimicrobial resistance**

Antimicrobial resistance threatens the very core of modern medicine and the sustainability of an effective, global public health response to the enduring threat from infectious diseases

In 2015 World Health Assembly adopted a global action plan on antimicrobial resistance, to improve awareness and understanding of antimicrobial resistance through effective communication, education and training.

**One Health Concept**

- One Health is an integrated, unifying approach to balance and optimize the health of people, animals, and the environment. It is particularly important to prevent, predict, detect, and respond to global health threats such as the COVID-19 pandemic.



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- The One Health approach is particularly relevant for food and water safety, nutrition, and the control of zoonosis which are diseases that can spread between animals and humans, such as flu, rabies, and Rift Valley fever.

## Global TB Report

**News Excerpt**

As per The WHO Global Tuberculosis Report 2022, as many as 1.6 million people died from tuberculosis in 2021 during the COVID-19 pandemic. This is the first time in many years that an increase has been reported in the number of people falling ill with TB and drug-resistant TB.

**Key Facts**

- Tuberculosis (TB) is a **communicable** disease that is caused by the bacillus **Mycobacterium tuberculosis,** which is spread when people who are sick with TB expel bacteria into the air.
- The three stages of TB are Primary infection, Latent TB infection, and Active TB disease.
- Isoniazid, Rifampin, Ethambutol, Pyrazinamide, and Rifapentine are some of the common drugs used in the treatment.
- The COVID-19 pandemic continues to have a damaging impact on access to TB diagnosis and treatment and the burden of TB disease increased.
- There is a large global drop in the reported number of people newly diagnosed from TB with 7.1 million in 2019 to 5.8 million in 2020 and a partial recovery, to 6.4 million in 2021.
- The three countries that accounted for most of the reduction in 2020 were India, Indonesia, and the Philippines with 67% of the global total.
- Reductions in the reported cases suggest that the number of people with undiagnosed and untreated TB has grown.
- Globally, the estimated number of deaths from TB increased between 2019 and 2021 with an estimated 1.4 million deaths among HIV-negative and 187 000 among HIV-positive people a combined total of 1.6 million.
- The TB incidence rate rose by 3.6% between 2020 and 2021, reversing declines of about 2% per year for most of the previous 2 decades.
- The number of people provided with treatment for RR-TB and multidrug-resistant TB (MDR-TB) has declined between 2019-2021. Thus indicating a decline in global spending on essential TB services
- India has set a target for the complete elimination of Tuberculosis (TB) by 2025.
- India was one of the three countries that accounted for most of the reduction in tuberculosis in 2020.
- In India, TB is still one of the most commonly prevalent diseases as far as both morbidity and mortality are concerned.

**The BCG (bacille Calmette-Guérin) vaccine**

This Vaccine protects against tuberculosis (TB). The vaccine may be given to persons at high risk of developing TB. It is also used to treat bladder tumors or bladder cancer in early stages. It is one of the most widely used of all currentvaccines, reading >80% of neonates and infants in countries where it is part of the national childhood immunization programme. BCG vaccine has adocumented protective effect against meningitis and disseminated TB in children.

## Malnutrition challenges in India's Northeast

**News Excerpt**

- According to NFHS 5 report, most of the North Eastern States are experiencing an increased burden of malnutrition. In malnutrition, the body becomes deficient in vitamins, minerals, and other nutrients required to maintain healthy tissues and organs.
- It occurs in people who are either undernourished or over nourished.

**Key Facts**

**Status of malnutrition in North East Region**

- Assam has improved in stunting (17% to 21.7%) but there is an increase in underweight (29.8% to 32.8%) and overweight (2.3% to 4.9%) percentages.
- In Meghalaya stunting has increased from 43.8% to 46.8% but wasting and underweight have decreased by more than 2 %.
- Children with stunting, wasting, underweight and overweight have increased in Mizoram, Nagaland, and Tripura



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- Comparatively stunting, wasting and underweight children have decreased in Sikkim and Manipur but Manipur has increased in wasting from 6.8% to 9.9%.
- The overweight population has increased in every North Eastern State.

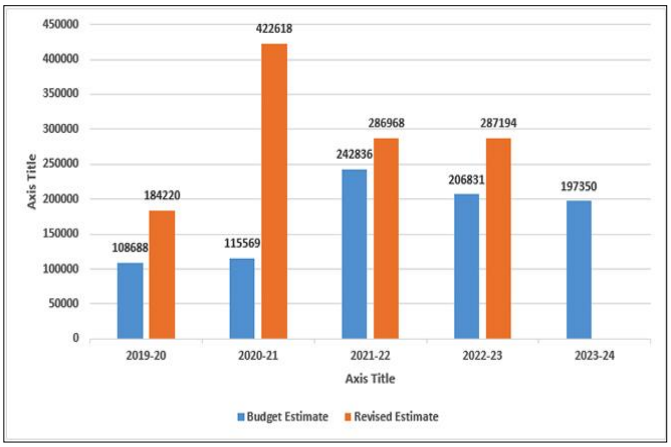
## Food Subsidy

**News Excerpt**

Recently, Government has decided to distribute free food grains for one year from January 2023 under the Public Distribution System (PDS) of National Food Security Act (2013) in a move to shield the poor from the effects of the termination of Pradhan Mantri Garib Kalyan Ann Yojana (PMGKAY).

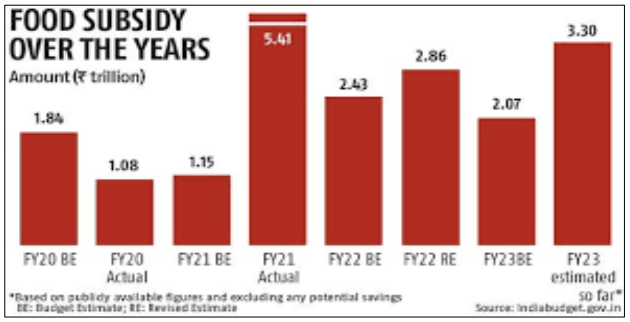
**Key Facts**

- Indian Government is running the largest food security program in the world.
- A statutory body created by the **Food Corporation of India Act of 1964**, the FCI was established for the purchase, storage, movement, transport, distribution and sale of food grains and other foodstuffs".
- For India to achieve the **sustainable development goals (SDGs)** as well as economic and social reforms, it is essential to empower and safeguard the **67.7 percent of women and children in the country** by ensuring their healthy development in a safe and secure environment.
- Of this number, women make up for 48 percent and contribute 18 percent of the country's GDP; thus, much has to be done to solve the difficulties they face.
- The pandemic has further added to the economic and social woes for women with 47 million women and girls having been pushed into extreme hunger.
- India has a social and legal obligation to provide its citizens with a dignified existence by assuring their access to **food and nutritional security** by making a sufficient supply of high-quality food grains available.




**Budget allocations**

- During the Financial Years 2021–22 to 2025–26, the Government of India also approved upgrading 2 lakh Anganwadi Centers (AWCs) to Saksham Anganwadis at a rate of 40,000 each year.
- **Saksham Anganwadi** and **POSHAN 2.0**under the Mission Poshan 2.0, brings together under one umbrella **the ICDS, POSHAN Abhiyaan, Scheme for Adolescent girls, and National Creche Scheme**, and has been allocated INR 20,554.31 crores of the total allocated INR 25,448.75 crores in 2023-24.
- This shows an increase of INR 267 crore from the INR 25,172.28 crore allotted in 2022-23.
- The Union Budget 2023-24 is disheartening with a meagre 1.08 percent increased allocation for crucial social security programs for women and children despite the challenges faced by them
- **PM-Poshan** (renamed mid-day meal scheme) received an outlay of INR 11,600 crore in 2023-24 from INR 10,233 crores in 2022-23; it was increased by 13 percent but it decreased as to the revised estimates.
- The budget for **Mission Shakti**, which houses the **Pradhan Mantri Matru Vandana Yojana, Women Helpline, Beti Bachao Beti Padhao,** and other important programmes for the protection of women, declined by 1.2 percent from INR 3,184.11 in 2022-23 to INR 3143.96 crore in 2023-24.
- The **Pradhan Mantri Matru Vandana Yojana (PMMVY)** has been underfunded since it began in 2017. As against the requirement of INR 14,000 crore as per the National Food Security Act (NFSA) mandate, the allocation/budget estimate for 2023-24 has been a scanty INR 2581.96 crores.



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- The **Food Subsidy program** that ensures distribution of food grains at a subsidized price through the Targeted Public Distribution System (TPDS) has been slashed by 32 percent in the 2023-24 budget to INR 1,97,350 crore from INR 2,06,831 crore allocated.

## WHO report on Health Equity for Disables

**News Excerpt**

World Health Organisation (WHO) has released a report on health equity for persons with disabilities. The UN Convention on the Rights of Persons with Disabilities defines persons with disabilities as those "who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others"

**Key Highlights of the Report**

- There are near about 1.3 billion people worldwide who suffer from major disabilities. These are facing systemic and persistent health inequities and therefore they may die 20 years earlier in comparison with the person without disabilities (PwD).
- Near about 80% of people with disabilities reside in low-and middle-income countries with limited resources and therefore it is difficult to address these inequities.
- PwD is at risk of contracting chronic illnesses like depression, diabetes, stroke, etc. The discrepancies in their health outcomes are more because of unfair and unjust circumstances.

**Key Recommendations**

- Ensure participation of PwD in an effective manner in all facets of society.
- Instill inclusion, accessibility, and non-discrimination in the medical field. The Health system should not add pressure on PwD rather it should alleviate the challenges they face.
- Health equity for Pwd is critical if the world needs to achieve Universal Health Coverage. It is the central component in all efforts to protect everyone in health emergencies.
- Civil society should ensure all health sector actions are inclusive of persons with disabilities so that they can enjoy their right to the highest standard of health.

# Reports and Ranking

## Global Sustainable Development Report 2022

**Monuments**

Recently, Indias rank in the Global Sustainable Development Report (GSDR), 2022 has slipped for the third consecutive year.

**Key Facts**

- The GSDR is a United Nations publication and it is considered as the only comprehensive, global report on sustainable development.
- The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future.
- At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership.

**India's Performance in global Sustainable Development Report, 2022**

- The country continues to face major challenges in achieving 11 of the 17 SDGs, which has pushed down its global ranking on SDG preparedness.
- Ensuring decent work (SDG 8) has become more challenging.
- India is on track to achieving SDG 13 on climate action, the report mentioned. But another report presented a grim picture.
- Indias performance on climate action — (SDG) 13 — has slipped from 2019-2020. In 2020, the countrys overall national score on SDG 13 was 54 (out of 100) — a significant dip from 60 in 2019.



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- This decline in Indias overall performance is primarily due to eight states — Bihar, Telangana, Rajasthan, Uttar Pradesh, Karnataka, Andhra Pradesh, Punjab and Jharkhand — whose scores have dipped under SDG 13 in the two years.

**Performance of the World**

- The 2022 SDG Index ranks Finland, Denmark, and Sweden first, second, and third, and all top ten performers are European countries. None of them, however, are on track to achieve the SDGs by 2030, given major challenges on several Goals.
- The region that made the most progress on the SDGs since their adoption is East and South Asia, with Bangladesh and Cambodia topping the ranks in terms of progress achieved.
- The report also notes that, halfway to 2030, countries vary greatly in terms of SDG integration in budgets, policies, and programmes. Among the Group of 20 (G20), the US, Brazil, and the Russian Federation show the least support for the Goals.
- Nordic countries, on the other hand, as well as Argentina, Germany, Japan, and Mexico exhibit relatively high levels of support for the 2030 Agenda.

## First National Food Security Ranking

**News Excerpt**

Union Food Minister Piyush Goyal released on 5 July 2022 the first State Ranking Index for implementation of the National Food Security Act, 2013.

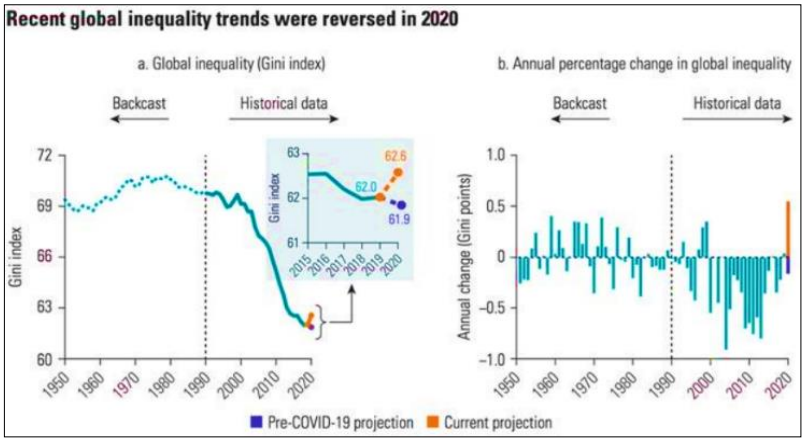
**Key Facts**

- Among the 20 big states and Union Territories (UTs), Odisha, Uttar Pradesh and Andhra Pradesh scored the highest in the list while Goa came last. Tripura, Himachal Pradesh and Sikkim obtained the top positions and Ladakh came last among the 14 smaller states and UTs.
- The states and UTs were ranked based on three parameters for the year 2022.
- The first measures "coverage of NFSA, rightful targeting, and implementation of all provisions under NFSA".
- The second "analyses the delivery platform while considering the allocation of food grains, their movement, and last-mile delivery to Fair Price Shops (FPS)".
- The third "focuses on nutrition initiatives of the department".
- The NFSA provides a legal right to persons belonging to "eligible households" to receive food grains at subsidised price – rice at Rs 3/kg, wheat at Rs 2/kg and coarse grain at Re 1/kg — under the TPDS. These are called central issue prices (CIPs).

## World Bank's Report on Poverty

**News Excerpt**

According to a new World Bank report, titled "**Poverty and Shared Prosperity 2022: Correcting Course**", the Covid pandemic has been the biggest setback to global poverty alleviation in decades.




**Key Facts**

- Nearly 80% of people who slipped into poverty in 2020 due to the COVID-19 pandemic hailed from India (5.6 crore out of 7 crore).
- The report states that global poverty reduction has been slowing down since 2015 but the Covid pandemic and the war in Ukraine have completely reversed the outcomes.



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- Globally, extreme poverty levels went up to 9.3% in 2020 compared to 8.4% in 2019, halting the progress made by poverty alleviation programmes worldwide for the first time in decades.
- About 7 crore people were additionally pushed into extreme poverty by the end of 2020, increasing the global total of poor to over and above 70 crore.

**About income inequalities**

- There is a rise in inequalities as the poorest people bore the steepest costs of the pandemic: income losses averaged 4 per cent for the poorest 40 per cent, double the losses of the wealthiest 20 per cent of the income distribution. As a result, **Global inequality rose for the first time in decades.**

**Analysis**

India contributes significantly to global poverty levels due to the sheer size of its population, the World Bank flagged that the lack of official data on poverty from India had become a hindrance in drawing up global estimates. **Since 2011, the Indian government has stopped publishing data on poverty**.

*Table 1: Unprecedented fall in poverty between 2004 and 2011 has been followed by an equally unprecedented rise between 2012 and 2020*

| Year | Headcount Poverty Ratio (As a % of total population) | Absolute Number of Poor (in millions) |
|---|---|---|
| 1973 | 54.9 | 321.3 |
| 1983 | 44.5 | 322.9 |
| 1993 | 36 | 320.4 |
| 2004 | 27.5 | 301.7 |
| 2004* | 37.2 | 407.2 |
| 2011* | 21.9 | 269.8 |
| 2019# | 20.8 | 346.3 |

## Global Hunger Index 2022

**News Excerpt**

As per **Global Hunger Index (GHI)**, India has slipped six places and ranked 107, out of 121 countries, in 2022.

**Key Facts**

- With a score of 29.1, which falls in the '**serious**' category of hunger, India was ranked behind its neighbours **Nepal (81), Pakistan (99), Sri Lanka (64), and Bangladesh (84).**
- India has recorded decreased GHI scores as in 2000, it recorded an 'alarming' score of 38.8, which reduced to 28.2 by 2014. The country has started recording higher scores since then.
- **Yemen** has ranked in the lowest position at 121, while the top of the list is dominated by European nations including **Croatia, Estonia and Montenegro**.
- Among Asian nations, China and Kuwait have ranked the highest.

**What is Global Hunger Index (GHI)?**

- Global Hunger Index was Jointly published by **Concern Worldwide and Welthungerhilfe,** in year 2000. Since then every year report is released, with this year's report being the 15th one.
- A **low score gets a country a higher ranking and implies a better performance.**
- The reason behind mapping hunger is to ensure that the world **achieves "Zero Hunger by 2030" — one of the Sustainable Development Goals** laid out by the United Nations. It is for this reason that GHI scores are not calculated for certain high-income countries.

**Parameters used by GHI:**

The GHI looks at **four main indicators**:

- **Undernourishment** (which reflects inadequate food availability): calculated by the share of the population that is undernourished (that is, whose caloric intake is insufficient);
- **Child Wasting** (which reflects acute under nutrition): calculated by the share of children under the age of five who are wasted (that is, those who have low weight for their height);
- **Child Stunting** (which reflects chronic under nutrition): calculated by the share of children under the age of five who are stunted (that is, those who have low height for their age);
- **Child Mortality** (which reflects both inadequate nutrition and unhealthy environment): calculated by the mortality rate of children under the age of five (in part, a reflection of the fatal mix of inadequate nutrition.

**India's performance**

- ✓ According to the report, **child wasting** increased from 17.1% in 2000 to 20% in 2007; it dropped to 15.1% in 2014 and then increased to 19.3% in 2022.
- ✓ **Child stunting,** however, has shown a steady decline over the past two decades — from 54.2% in 2000, to 47.8% in 2007, 38.7% in 2014, and 35.5% in 2022, the biggest drop taking place between 2007 and 2014.
- ✓ **Mortality rate for children** under 5 years has also reduced from 9.2% in 2000 to 3.3% in 2022, the report shows.
- ✓ **The proportion of undernourished** in the country has, however, increased since 2014, according to GHI. From 18.4% in 2000 it dropped to 17.5% in 2007 and 14.8% in 2014, to rise to 16.3% in 2022.



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**Analysis**

- India has ranked 107th out of 121 countries in the Global Hunger Index (GHI) 2022, down from the 101st position the previous year.
- Poor nutrition not only adversely impacts health and survival but also leads to diminished learning capacity, and poor school performance. And in adulthood, it means reduced earnings and increased risks of chronic diseases such as diabetes, hypertension, and obesity.

## UN Population Report

**News Excerpt**

According to the 2022 edition of the United Nations' World Population Prospects (WPP), India is projected to surpass China as the world's most populous country in 2023. It also projected the world's population to reach 8 billion on 15 November 2022.

**Key Facts**

- The world's population continues to grow, but the pace of growth is slowing down: The global population is expected to grow to around 8.5 billion in 2030, 9.7 billion in 2050 and 10.4 billion in 2100.
- Rates of population growth vary significantly across countries and regions: More than half of the projected increase in global population up to 2050 will be concentrated in just eight countries: the Democratic Republic of the Congo, Egypt, Ethiopia, India, Nigeria, Pakistan, the Philippines and the United Republic of Tanzania.
- The population of older persons is increasing both in numbers and as a share of the total: The share of the global population aged 65 years or above is projected to rise from 10% in 2022 to 16% in 2050.
- A sustained drop in fertility has led to an increased concentration of the population at working ages (between 25 and 64 years), creating an opportunity for accelerated economic growth per capita: This shift in the age distribution provides a time-bound opportunity for accelerated economic growth known as the "demographic dividend".

**What are the World Population Prospects?**

1. The **Population Division of the UN** has been publishing the WPP in a **biennial cycle since 1951**.
2. Each **revision of the WPP** provides a historical time series of population indicators starting in 1950.
3. It does so by taking into account newly released **national data** to revise estimates of past trends in **fertility**, **mortality** or **international migration**.

International migration is having important impacts on population trends for some countries: For high-income countries between 2000 and 2020, the contribution of international migration to population growth (net inflow of 80.5 million) exceeded the balance of births over deaths (66.2 million). million), Venezuela (Bolivarian Republic of) (-4.8 million) and Myanmar (-1.0 million), insecurity and conflict drove the outflow of migrants over this period.

## India In Multidimensional Poverty Index (Mpi)

**News Excerpt**

The number of people living below the poverty line in India decreased by 415 million between 2005-06 and 2019-21, according to a new Multidimensional Poverty Index (MPI) released jointly by the United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI).

**Key Facts**

- India still has the world's highest number of poor at 228.9 million, followed by Nigeria (96.7 million projected in 2020).
- Across 111 countries, 1.2 billion people (19.1 per cent) live in acute poverty and almost half of these people (593 million) are children under the age of 18 years.
- The developing region with the largest number of poor people is Sub-Saharan Africa (nearly 579 million), followed by South Asia (385 million).
- The MPI highlighted that the Covid-19 pandemic had set the global progress in reducing poverty back by 3–10 years. Despite progress, India's population remains vulnerable to the mounting effects of the Covid-19 pandemic and to rising food and energy prices. Integrated policies tackling the ongoing nutritional and energy crises should be a priority.



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- India had 97 million poor children in 2019-21. This translates into more than one in five children (21.8 per cent)--more than the total number of poor people in any other country covered by MPI.
- India is the only country in South Asia in which poverty is significantly more prevalent among female-headed households than among male-headed households. About 19.7 per cent of people living in female-headed households live in poverty (15.9 per cent in male-headed households).
- Ninety per cent of India's poor people live in rural areas and 10 per cent in urban areas.

# Miscellaneous

## FIRST EVER UN RESOLUTION MENTIONS HINDI

**News Excerpt**

In a resolution on multilingualism adopted in the UN General Assembly on 10 June 2022 mentions the Hindi language for the first time.

**Key Facts**

- The resolution adopted in the 193-member UN General Assembly, presented by Andorra and co-sponsored by over 80 nations including India, underlines the responsibility of the United Nations Secretariat towards "integrating multilingualism into its activities, on an equitable basis
- It recognises the efforts of the United Nations to use non-official languages, in addition to the six official languages- Arabic, Chinese, English, French, Russian and Spanish.
- The resolution also mentions Bangla and Urdu for the first time. India welcome all these additions.
- Last month, India contributed USD 800,000 towards efforts to continue to expand the use of Hindi in the United Nations.

**Flashback**

1. Since 2018, the UN News in Hindi is disseminated through UN's website and social media handles on Twitter, Instagram and Facebook.
2. A UN News-Hindi audio bulletin (UN Radio) is released every week. Its weblink is available on the UN Hindi News website.
3. The resolution also requests the Secretary-General to continue his efforts to ensure that multilingualism, as a core value of the United Nations, is not undermined by the measures taken in response to the liquidity situation and the coronavirus disease.

## Nobel Prize in Literature

**News Excerpt**

The Nobel Prize for Literature 2022 has gone to French author Annie Ernaux, for "the courage and clinical acuity with which she uncovers the roots, estrangements and collective restraints of personal memory".

**Key Facts**

- Ernaux, 82, has seen a sharp increase in popularity in the English-speaking world since 2019, after her seminal work 'The Years', translated by Alison L Strayer, was shortlisted for the Man Book international prize.
- Her book on her illegal abortion in the 1960s, 'Happening' (first published in 2001) has also been in the limelight after abortion rights were curtailed in the US.
- Her 'A Girl's Story' (published in French in 2016), built on her own experiences at a children's camp, deals with the shaming an 18-year-old girl is subjected to for her sexuality.

## Nobel Peace Prize

**News Excerpt**

Memorial, Russia's most prominent and oldest human rights organisation, along with Belarusian human rights advocate Ales Bialiatski and Ukrainian human rights organisation Center for Civil Liberties received the prestigious Nobel Peace Prize 2022.

**Key Facts**

- Memorial International Established in 1987, sought to ensure that the victims of state-led oppression during the rule of the USSR would never be forgotten. It has opposed combat militarism, promoted human rights and played a crucial



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role in collecting information about war crimes committed by Russian forces and their supporters during Chechen Wars from the 1990's to the 2000's.

- Ales Bialiatski was one of the initiators of the democracy movement that emerged in Belarus in the mid-1980s. He has devoted his life to promoting democracy and peaceful development in his home country.
- Center for Civil Liberties was founded in Kyiv in 2007 for the purpose of advancing human rights and democracy in Ukraine. After Russia's invasion of Ukraine in February 2022, Center for Civil Liberties has engaged in efforts to identify and document Russian war crimes against the Ukrainian civilian population.

## GOVERNMENT SCHEMES

### ➢ MINISTRY OF AGRICULTURE AND FARMER WELFARE

#### ✓ Bhartiya Prakritik Krishi Paddhati (BPKP) Scheme

Scheme by ministry of agriculture and farmer welfare

**Aim:** To promote Natural Farming (as the name suggests)

BPKP is promoted under a centrally sponsored scheme- Paramparagat Krishi Vikas Yojana (PKVY).

(BPKP) as a sub scheme of Paramparagat Krishi Vikas Yojana (PKVY) since 2020-21 for the promotion of traditional indigenous practices.

Main emphasis is on negation of all synthetic chemical inputs and promoting on-farm biomass recycling.

**Key practices suggested by the scheme are**

- Biomass mulching
- use of cow dung-urine formulations
- plant-based preparations
- Timely working of soil for aeration

Under BPKP, financial assistance of Rs 12200/ha for 3 years is provided to facilitate capacity building, cluster formation, certification ,residue analysis and continuous guidance by trained personnel

#### ✓ Platform Of Platforms

It is launched by the **Ministry of Agriculture and Farmer Welfare** as a mobile application in 12 languages.

- Platform of Platforms has been launched under e-NAM (Electronic National Agriculture Market).

**Objectives:**

- To promote trade & marketing of agricultural produce wherein farmers will be facilitated to sell the produce outside their state borders.
- To expand farmers' digital access to multiple markets, buyers and service providers and make the business transactions more transparent.

**Other Features:**

e-NAM has integrated the platform of Service Providers as the "Platform of Platforms" which includes

- Composite Service Providers
- Quality Assurance Service Provider
- Cleaning, Grading, Sorting & Packaging Service Provider
- Warehousing Facility Service Provider
- Agricultural Input Service Provider
- Technology Enabled Finance & Insurance Service Provider
- Information Dissemination Portal

### ➢ MINISTRY OF SCIENCE AND TECHNOLOGY

#### ✓ Purple Revolution/Lavender Revolution

It has been launched by Ministry of Science and Technology through the Aroma Mission of CSIR

**About purple revolution:**

- Main objective is to promote the indigenous aromatic crop-based agro-economy by shifting from foreign aromatics to home grown kinds.



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- For the first time, free lavender seedlings are offered to producers as part of the goal and A payment of Rs. 5-6 per plant to those who have previously produced lavender.
- Under the initiative of CSIR led Aroma Indian Institute of Integrative Medicine (IIIM),lavender cultivation has begun in the Ramban district of Jammu and Kashmir.

**Major products under the Mission include**

- Lavender oil which sells for at least Rs. 10,000 per litre
- Lavender water which is used to make incense sticks.
- Hydrosol is formed after distillation from the flowers and is used to make soaps and room fresheners.

Though large scale cultivation of Lavender is practiced in Jammu and Kashmir particularly, efforts are on to encourage it in other states of India including Uttarakhand,Himachal Pradesh and Arunachal Pradesh as well.

## ➢ MINISTRY OF NEW AND RENEWABLE ENERGY

### ✓ National Bio-energy Programme

Notified by the Ministry of New and Renewable Energy in November 2022.

**Duration of the scheme:** FY 2021-22 to 2025-26

**Sub-schemes: The programme comprises of following sub-schemes:**

- Waste to Energy Programme: Under this, CFA (central financial assistance) will be given to companies that take up production of biogas, bio CNG, and electricity from urban, industrial and agricultural waste and residues
- Biomass Programme: Aimed to support the manufacturing of briquettes and pellets, apart from the promotion of biomass (non-bagasse) based cogeneration in industries.
- Biogas Programme to support the setting up of family and medium size Biogas in rural areas.

## ➢ MINISTRY OF CIVIL AVIATION

### ✓ National Air Sports Policy

Launched by: Ministry of Civil Aviation has launched

**Objective:** To lay out the vision of making India as one of the top sports nations by 2030,

- by providing a safe, affordable, accessible, enjoyable and sustainable air sports ecosystem in India
- By enhancing participation and success of Indian sportspersons in global air sports events.
- By promoting design, development and manufacturing of air sports equipment in India in line with the Atmanirbhar Bharat Abhiyan.

**Four Tier Governance Structure:**

- Air Sports Federation of India (ASFI) as the apex governing body.
- National associations for individual air sports or a set of air sports
- Regional (e.g. West/ South/ North East etc.) or State and Union Territory level units of the national air sports associations, as appropriate; and
- District-level air sports associations, as appropriate.

## ➢ MINISTRY OF DEFENCE

### ✓ Agnipath scheme

**About:** It is a short-service manpower model under which around 45,000 to 50,000 soldiers will be recruited annually. Of these, 75% will leave the service in four years. 25% will be allowed to continue for another 15 years under permanent commission

**Key features of the scheme:**

**Eligibility:** Aspirants between the ages of 17.5 years and 21 years will be eligible to apply. The scheme is only applicable to personnel below officer ranks.

**Recruitment**: Twice a year through rallies.

The recruitment will be done on "all India, all class" recruitment to the services (from any caste, region, class or religious background).



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**Training period**: 6 months + deployment for three and a half years.

During this period, they will get a starting salary of INR 30,000, along with additional benefits which will go up to INR 40,000 by the end of the four-year service

**Similar schemes in other countries**:

- Voluntary tour of duty: USA
- Mandatory tour of duty (called conscription): followed in countries of Israel, Norway, North Korea, and Sweden.

✓ **SeHAT Scheme**

It stands for 'Services e-Health Assistance & Tele-consultation

Developed by: Department of Military Affairs (DMA), Armed Forces Medical Services (AFMS), Integrated Defence Staff (IDS) and Centre for Development of Artificial Computing (C-DAC) Mohali

**About:** to provide telemedicine services in Armed Forces, further strengthening the commitment of governments towards e-governance and digital India.

**Key features:**

- SeHATOPD is a patient to doctor system where the patient can remotely consult a doctor via internet services.
- Through this OPD, serving defence personnel from Army, Air force, Navy and ex- service personnel can get tele consultations from specialists' doctors in Armed forces.
- OPD will provide benefits to around four crore people and family members of defence personnel.

➢ **MINISTRY OF CONSUMER AFFAIRS**

✓ **Onorc program**

**Implemented by** – Ministry of Consumer Affairs

**Launched in:** August, 2019 as an inter-state pilot

**About:** One Nation One Ration Card scheme allows migrant workers and their family members to buy subsidised ration From any fair price shop located anywhere in the country under the National Food Security Act, 2013.

**How does the SCHEME work?**

It is based on technology that involves details such as Beneficiaries' ration card, Aadhaar number, and electronic Points of Sale (ePoS).

Through biometric authentication on ePoS devices at fair price shops, the system identifies a beneficiary.

**The system runs on the basis of two portals:**

- Integrated Management of Public Distribution System (IM-PDS) (impds.nic.in)
- Annavitran (annavitran.nic.in), which host all the significant data

**Mera Ration mobile app:** it has been launched by Government to make best use of ONORC and it will provide information to users in real-time in 13 languages

✓ **Hallmark Unique Identification**

**Launched by:** Ministry of Consumer Affairs, Food & Public Distribution.

**About** : At the time of Hallmarking procedure, a HUID- 6 Digit alphanumeric code made up of letters and digits is given.

There are now three symbols which authenticate purity of gold-BIS Mark, mark of weight and HUID.

Consumers can check authenticity by verifying HUID on the BIS App.

It is mandatory from June 2021.

✓ **E-DAKHIL PORTAL**

**About**: An online portal for filing consumer complaints.

**Launched by**: Ministry of Consumer Affairs, Food & Public Distribution



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Common Service Centres (CSC) is integrated with the e-daakhil site in order to make electronic filing easier for rural consumers.

Consumer Protection Act 2019, allows for hearing the complaints through video conferencing in consumer commissions

✓ **Free Foodgrain Scheme**

Launched by: The Union Ministry of Consumer Affairs, Food and Public Distribution through a notification

About:

From January 2023 onwards, all the beneficiaries under the NFSA, 2013 will be provided 5 kg of Free Food grains per month, rather than charging them a subsidized amount of Rs 3 a kg of rice, Rs 2 a kg of wheat and Rs 1 a kg of coarse cereal as is currently done.

Termination of PMGKAY: The union government has also decided to discontinue the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) and it has now been merged with the NFSA

➢ **MINISTRY OF CIVIL AVIATION**

✓ **Digiyatra**

**About:** It is to ensure paperless entry at airports using facial recognition software.

**Key features:**

- To ensure that travellers pass through various checkpoints at the airport through paperless and contactless processing, using facial features to establish their identity, which would be linked to the boarding pass.
- There will be no need for the passengers to carry their ID card and Boarding pass.

**Implemented by:** Digi Yatra Foundation - a joint-venture company whose shareholders are the

- Airports Authority of India (26% stake)
- Bengaluru Airport
- Delhi Airport
- Hyderabad Airport
- Mumbai Airport
- Cochin International Airport.
- (These five shareholders equally hold the remaining 74% of the shares)

➢ **HOME MINISTRY**

✓ **NAFIS**

**Developed by:** The National Crime Records Bureau (NCRB) at the Central Fingerprint Bureau (CFPB) in New Delhi.

**About:** A web-based application which functions as a central information repository by consolidating fingerprint data from all states and Union Territories.

**Key features:**

- It enables law enforcement agencies to upload, trace, and retrieve data from the database in real time on a 24×7 basis.
- It would help in the quick and easy disposal of cases with the help of a centralized fingerprint database.

Madhya Pradesh recently became the first state in the country to identify a deceased person through NAFIS.

**How does it work?**

- NAFIS assigns a unique 10-digit National Fingerprint Number (NFN) to each person arrested for a crime.
- This unique ID will be used for the person's lifetime, and different crimes registered under different FIRs will be linked to the same NFN
- The ID's first two digits will be that of the state code in which the person arrested for a crime is registered, followed by a sequence number.
- It will be included in the CCTNS (Crime and Criminal Tracking Network & Systems) database as both are connected at the backend.



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✓ **PM SHRI SCHEME**

It stands for Pradhan Mantri Schools for Rising India (PM-SHRI)- Upgradation of School Infrastructure.

**Scheme Type:**a Centrally Sponsored Scheme

**About:** Under the scheme, 14500 schools will be upgraded in accordance with New Education Policy (NEP).

**Other Key features**

- All components of the National Education Policy 2020 will be showcased by these schools.
- **Duration Period:** 2022-23 to 2026-27
- **Eligibility:** The Elementary schools & the Secondary/ Sr. Secondary Schools managed by Centre/State/UT Governments / local self-governments having UDISE+ code would be considered for selection under the Scheme.
- Selection of PM SHRI schools will be done through Challenge Mode wherein Schools compete for support to become exemplar schools.
- Schools will be selected only if the State government agrees to implement the NEP in its entirety with the Centre
- Implementation Strategy: Same as the present administrative structure available for SamagraShiksha, KVS & NVS

This Scheme will focus on a discovery oriented, learning centric way of teaching, including modern infra, latest technology, smart classrooms, sports and more.

➢ **HUMAN DEVELOPMENT REPORT**

**Operation Gear Box**

Launched by: **Directorate of Revenue Intelligence (DRI).**

**About:**

- Operation Gear Box is conducted to detect the hidden drugs in the gear boxes.
- The gears from old and used gearboxes were removed after opening them and plastic packets containing the narcotic substance were placed in the created cavity and the gearboxes were refitted to avoid detection.
- The drug syndicate has used this unique modus operandi to conceal heroin.
- These packets were shipped concealing inside this metal scrap with other metal scrap so that it would go unnoticed by the authorities.

➢ **MINISTRY OF HEALTH AND FAMILY WELFARE**

✓ **Swasth Sabal Bharat Sammelan**

**About-** Organ Donation in India

In India, Organ donation is regulated through Transplantation of Human Organs Act (THOA), 1994.

About the Act: It legalised the concept of Brain Death which is the irreversible and permanent cessation of all brain functions. In case of Brain Death, organs can be transplanted to terminally ill people.

**Working mechanism:**

- A panel of 4 doctors has to declare a person brain dead before their organs can be harvested.
- Doctors have to conduct 4 tests which are Cornea reflex test, Ear reflex test, Gag reflex test and Aphena reflex test twice in a time frame of six hours, before declaring a person brain dead.

✓ **Revised Beti Bachao Beti Padhao**

**About:** The new aims in the revised BBBP scheme include:

- Ensuring 1% increment in enrolment at the secondary level particularly in STEM (Science, Technology, Engineering, Mathematics) subjects.
- Skilling of girls and women every year (mainly in non-traditional livelihoods)
- Raising awareness about safe menstrual hygiene



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- Promulgating elimination of child marriages

**About BBBP scheme:**

- The Scheme was launched by Prime Minister on January 22, 2015 to addresses the declining Child Sex Ratio (CSR) and related issues of women's empowerment over a life-cycle continuum.
- It is a Tri-ministerial effort of the **Ministries of Women and Child Development (MW&CD), Ministry of Health & Family Welfare (MH&FW), and Ministry of Education**

## ➢ MINISTRY OF CHEMICALS AND FERTILIZERS

### ✓ Pm Kisan Samrudhi Kendra

**About:** Under this scheme, more than 3.3 lakh retail fertilizer shops in the country will be converted into PMKSK in a phased manner.

**PM SammridhiKendras:**

- These are the sales centres for fertiliser.
- These will be centres where farmers can buy fertilisers and seeds.
- These centres will provide soil testing and avail useful information about farming techniques.
- It will ensure the quality of the fertiliser and its availability, as urea will be available only under the 'Bharat' brand name in the entire country

## ➢ MINISTRY OF WOMEN AND CHILD DEVELOPMENT

### ✓ Shakti Sadan

**About**: Under the newly approved Mission Shakti, Swadhar Greh for women in difficult circumstances and Ujjawala for Prevention of Trafficking have been merged and renamed as Shakti Sadan which is an Integrated Relief and Rehabilitation Home.

**Scheme** Type**:** Centrally sponsored scheme

**Aim:** to create a safe and enabling environment for women in distress situations and difficult circumstances.

The Shakti Sadan have provision for shelter, food, clothing, primary health care among others. Under the Scheme, States/UTs forward proposals on the basis of their local need and requirement and funds are released for approved projects as per Scheme Guidelines.

## ➢ MINISTRY OF AYUSH

### ✓ Smart Program

**Launched by:** The National Commission for Indian System of Medicine (NCISM) and the Central Council for Research in Ayurvedic Sciences (CCRAS), the two prominent institutions under the Ministry of Ayush.

It stands for Scope for Mainstreaming Ayurveda Research in Teaching Professionals

**Objective:**

- To boost scientific research through Ayurveda colleges and hospitals.
- It aims to identify, support and promote innovative research ideas in healthcare research areas including Osteoarthritis, Iron Deficiency Anaemia, Chronic Bronchitis, Dyslipidemia, Rheumatoid Arthritis, Obesity, Diabetes Mellitus, Psoriasis, Generalised Anxiety Disorder, Non-alcoholic fatty liver disease (NAFLD).
- To motivate teachers to take up projects in designated areas of healthcare research and create a large database.

## ➢ MINISTRY OF ENVIRONMENT,FOREST AND CLIMATE CHANGE

### ✓ MISHTI

**It stands for**: 'Mangrove Initiative for Shoreline Habitats & Tangible Incomes',

**Launched in:** Union Budget 2023-24

**About:** To initiate mangrove plantation along the coastline and on salt pan lands across the country.

Mangrove forests are spread across AP, WB, Odisha, Andaman and Nicobar, Goa, Karnataka, Kerala, Maharashtra, and Tamil Nadu.

**Scheme implementation:**

- By convergence of CAMPA Fund, MGNREGS, and other sources.



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- CAMPA means Compensatory Afforestation Fund Management and Planning Authority. The fund was established to increase the activities of afforestation in the country.
- MGNREGS is Mahatma Gandhi National Rural Employment Guarantee Scheme. It has been launched under the MGNREGA Act of 2005.

➢ **MINISTRY OF RURAL DEVELOPMENT**

✓ **MGNREGA**

MGNREGA is one of the largest work guarantee programmes in the world Launched in: 2005
Launched by: Ministry of Rural development.

**About:** The programme provides a legal guarantee for one hundred days of employment in every financial year to adult members of any rural household willing to do public work-related unskilled manual work at the statutory minimum wage.

This act was introduced with an aim of improving the purchasing power of the rural people, primarily semi or un-skilled work to people living below poverty line in rural India.

**Key features:**

- Roughly one-third of the stipulated work force must be women.
- Adult members of rural households submit their name, age and address with a photo to the Gram Panchayat.
- The employment will be provided within a radius of 5 km: if it is above 5 km extra wage will be paid.
- It is the Gram Sabha and the Gram Panchayat which approves the shelf of works under MGNREGA and fix their priority

**Eligibility:**

- Must be Citizen of India to seek MGNREGA benefits.
- Job seeker has completed 18 years of age at the time of application.
- The applicant must be part of a local household (i.e. application must be made with local Gram Panchayat).
- Applicants must volunteer for unskilled labour.

**Funding pattern:-** The scheme is funded by the central government which bears the full cost of unskilled labour and 75% of the cost of material for works undertaken under this law

✓ **National Social Assistance Program**

**Scheme Type:** A Centrally Sponsored Scheme
Ministry of rural development.

It is a social security and welfare programme to provide financial support to aged persons, widows, disabled persons and bereaved families on death of primary bread winner Launched in:15th August 1995.

**Eligibility:** To avail benefits under NSAP the applicant must belong to a Below Poverty Line (BPL) family

**Five sub schemes of NSAP (currently):**

- Indira Gandhi National Old Age Pension Scheme (IGNOAPS)
- Indira Gandhi National Widow Pension Scheme (IGNWPS)
- Indira Gandhi National Disability Pension Scheme (IGNDPS)
- National Family Benefit Scheme NFBS) and
- Annapurna

➢ **MINISTRY OF CHEMICALS AND FERTILIZERS**

✓ **PM PRANAM Scheme**

It stand for PM Promotion of Alternate Nutrients for Agriculture Management (PRANAM) Yojana

**About:** It aims to bring down the subsidy burden on chemical fertilizers.

**Implementation:** An initiation of the Union Ministry of Chemicals and Fertilizers.

**Budget:** There will not be any separate budget for the scheme and it will be financed through the savings of existing fertilizer subsidy under schemes run by the Department of Fertilizers.

**Subsidies under the PRANAM**

- 50% subsidy savings- used as grant to the state that saves the money



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- 70% of the grant to be used for asset creation related to technological adoption of alternate fertilisers and creation of such units at village, block and district levels.
- 30% grant money to be used to incentivise farmers, panchayats, FPOs and SHGs engaged in the reduction of fertiliser use and awareness generation

➢ **MINISTRY OF RURAL DEVELOPMENT**

✓ **Jal Jeevan Mission**

Launched by: Ministry of Jal Shakti in 2019.

**Objective:** The aim is to provide safe and adequate drinking water through individual household tap connections by 2024 to all households in rural India.

- The goal of the mission: To ensure 'Har Ghar Jal'- every house in the village is to be provided with a Functional tap connection
- Recently, the budgetary allocation for Jal Jeevan Mission has been raised by 27% for the financial year 2023-24 (FY24) to ensure that there is no delay in the programme due to a paucity of funds

➢ **MINISTRY OF SKILL DEVELOPMENT AND ENTREPRENEURSHIP**

✓ **Pradhan Mantri Kaushal Vikas Yojana**

- It is the flagship scheme running under Skill India Mission which was launched by GOI in 2015
- So far it has trained over 1.32 crore people in different skills since its inception.
- Key objective is vocational training and certification of Indian youth this ensuring them better livelihood opportunities.
- Individuals with prior experience are also assessed and certified under Recognition of Prior Learning (RPL).
- PMKVY is implemented by the National Skills Development Corporation (NSDC) under the guidance of the **Ministry of Skill Development and Entrepreneurship (MSDE).**
- This scheme has undergone three phases and PMKVY 3.0 is undergoing right now.
- It is a centrally sponsored scheme

✓ **Grameen Udyami Project**

- It is a unique project to multi skill India's youth and impart functional skills to them for enabling livelihoods.
- It is funded by NSDC that aims to train 450 tribal students in Madhya Pradesh and Jharkhand.
- Six states where it is being implemented are Maharashtra, Rajasthan, Chhattisgarh, Madhya Pradesh, Jharkhand, and Gujarat.
- Recently, NSDC in partnership with Seva Bharti and Yuva Vikas Society, launched the second phase of the Grameen Udyami Project.
- NSDC under the aegis of the Ministry of Skill Development and Enterprises (MSDE) has supported setting up of labs and classrooms through Sector Skill Councils (SSCs) in Seva Bharti Kendra Skill Development Center

**About NSDC:**

- It is a non-profit public limited company established in 2008 under the Companies Act,1956.
- The Government of India, through the Ministry of Skill Development and Entrepreneurship (MSDE), owns 49% stake in NSDC, while the remaining 51% is owned by the private sector.



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# ECONOMY

## Money and Banking

### Digital Divide in Financial Inclusion

**News Excerpt**

Recently, the Union Minister of Electronics and IT has asserted that Unified Payments Interface (UPI) platforms are worth 55% of India's gross domestic product (GDP), pointing toward an increase in the use of the digital payment ecosystem in India. Though it was imagined that digital payment will lead to financial inclusion automatically, however an undertone of the digital divide still exists and need to be proactively addressed.

**Key Facts**

**Financial Inclusion**

- Financial inclusion is defined as the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low-income groups at an affordable cost.
- In a diverse country like India, financial inclusion is a critical part of the development process. Since independence, the combined efforts of successive governments, regulatory institutions, and **civil society** have helped in increasing the financial-inclusion net in the country.
- The state of financial inclusion has **improved considerably over time**. However, financial **inclusion hasn't reached the poorest of the poor and there exist many bottlenecks** and challenges which need immediate attention.

**Digital Divide**

- A digital divide is an uneven distribution in the access to, use of, or impact of information and communications technologies between any number of distinct groups, which can be defined based on social, geographical, or geopolitical criteria, or otherwise.
- Bridging the digital divide that prevails is crucial to address the root cause of financial inclusion.

**Challenges in Financial Inclusion**

- Despite all the initiatives, India is still behind in providing universal access to bank accounts to its citizens. According to the Findex 2017 report, about 190 million adults in India do not have a bank account. This makes India the world's second-largest nation in terms of unbanked population after China.
- **The low-income group is still left out because the bank cannot provide a favourable financial product.**
- Indian economy is heavily dominated by cash. The data from RBI reveals that cash circulation has increased in 2018 after demonetization. Also, according to International Labour Organization (ILO), about 81% of the employed persons in India work in the informal sector. This combination of the informal sector and high dependence on cash mode of transaction poses an obstacle to digital financial inclusion.

**Digital Financial Inclusion Initiatives Taken in India**

- **JAM Trinity**: It is the combination of Aadhar and Pradhan Mantri Jan-Dhan Yojana (PMJDY) along with increasing mobile communication coverage. Using this trinity, access to financial services is eased.
- Expansion of the Unified Payment Interface (UPI) by National Payments Corporation of India (NPCI). Similarly, Unstructured Supplementary Service Data (USSD) is used for offline transaction-enabling use mobile banking services without internet, even on a basic mobile handset.
- Multiple instrument for financial Inclusion is launched by RBI and National Bank for Agriculture and Rural Development (NABARD). These includes Kisan Credit Cards, Payment Infrastructure Development Fund (PIDF) scheme, Linkage of self-help groups (SHGs) with banks, Business correspondents, bank branches in remote areas.
- Awareness programmes like **Project Financial Literacy** of RBI and **Pocket Money program** of SEBI.



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## Neobanks

### News Excerpt

Neobanks **bridge the gap** between the **services that traditional banks offer** and the **evolving expectations of customers in the digital age.** They are changing the face of FinTech and could one day eclipse traditional banks.

### Key Facts

- Neobanks are financial institutions that give customers a **cheaper alternative to traditional banks.** You could think of them as **digital banks without any physical branches, offering services that traditional banks don't, and doing so efficiently**. They leverage technology and artificial intelligence to offer personalised services to customers while minimising operating costs.
- In India, these firms **don't have a bank license of their own** but **rely on bank partners** to offer licensed services. That's because the **Reserve Bank of India (RBI) doesn't allow banks to be 100% digital yet.** The RBI remains unwavering in prioritising banks' physical presence, and has spoken about the need for digital banking service providers to have some physical presence as well.
- Neobanks provide products that come **under the regulatory framework** of the three financial regulators — **the Reserve Bank of India, the Securities & Exchange Board of India, and the Insurance and Regulatory Development Authority of India.** While there is no specific restriction on operations of neobanks, they are not directly subjected to compliances under RBI's licensing regime.
- NITI Aayog's 2021 proposal to set up full-stack digital banks lays down the roadmap for a licensing and regulatory mechanism for neobanks, so direly needed. Initially, the RBI too conceptualised in its Report by Working Group on Digital Lending to enlist such neobanks in a regulatory sandbox.

### Neobanks vs traditional banks

- Traditional banks have many advantages over neobanks, such as funding and -- most importantly -- customers' trust. However, legacy systems are weighing them down and they find it difficult to adapt to the growing needs of a tech-savvy generation.
- While neobanks don't have the funds or customer base to overthrow traditional banks, they have something special in their arsenal -- innovation. They can launch features and develop partnerships to serve their customers much more quickly than traditional banks.
- Venture capital and private equity investors have been keeping a keen eye on the market opportunities for such banks and are taking an increasing interest in them. India's neobank startups raised more than $230 million in 2020, according to a report by a FinTech research firm.
- As of 2020, India had a smartphone penetration rate of 54%, which is estimated to increase to 96% by 2040. Even though 80% of the population has access to at least one bank account, financial inclusion levels are yet to improve, according to a September 2021 PwC report.

> - The poster boy of neobanks is 'Nubank' that initially offered credit cards in Brazil.
> - It did not have a banking licence until 2017, much like the present Indian players.
> - Once it acquired the licence, it became a full-stack digital bank offering a plethora of services. It is established that neobanks are a viable business model providing core banking services rather than collaborating with regulated entities.

## Tokenisation of cards

### News Excerpt

The Reserve Bank of India (RBI) extended the timeline for tokenisation of debit and credit cards by three months till September 30, 2022 to avoid disruption and inconvenience to cardholders.

### Key Facts

- Under tokenisation services, a unique alternate code is generated to facilitate transactions through cards. It is the process of substituting a **16-digit customer card number with a non-sensitive equivalent value, referred to as a token.**
- This essentially means that a **customer's card information will no longer be available on any Merchant, Payment Gateway, or 3rd party that helps in the processing of digital transactions today**.



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- With card tokenisation, consumers no longer need to fear saving their card details. Cardholders will have to give an explicit consent that will be collected for tokenisation.
- The implementation of the tokenisation request is then carried out through the Additional Factor of Authentication (AFA) by the cardholder. This algorithmically generated token protects sensitive information and prevents card frauds as it allows you to make payments without exposing your bank details.

## Financial Services Institutions Bureau (FSIB)

### News Excerpt

The government has **transformed Banks Board Bureau (BBB),** into Financial Services Institutions Bureau (FSIB) by making some amendments.

### Key Facts

- **Financial Services Institutions Bureau (FSIB) -** It's a government body set up under the **Department of Financial Services**. The board will be entrusted with **making recommendations for the appointment of full-time directors and non-executive chairman of state-run financial services institutions.**
- It would also **issue guidelines for selecting general managers and directors of public sector general insurance companies.**
- While its main task is to **play the role of head-hunter for the state-owned financial services entities, the board will also be involved in formulating and developing business strategies for state-run banks and help them in their fund-raising plans.**
- FSIB would be **headed by a chairman, a central government nominee.** The board would comprise the **Secretaries of the DFS, the chairman of IRDAI, and a deputy governor of the RBI.** Additionally, it will have **three part-time members who are experts in banking and three more from the insurance sector.**
- The intent is to go beyond the man-manager role and assist the government in formulating a code of conduct and ethics for whole-time directors in these entities. It would also monitor and assess the performance of public sector banks, government-owned financial institutions and insurance companies.

### Why has it replaced Banks Board Bureau (BBB)?

- The Banks Board Bureau (BBB), came in to controversy in 2018, just two years after its inception in April 2016.
- The 2019, $2-billion fraud at PNB shocked the banking community.
- The BBB was declared an incompetent authority last year by the Delhi High Court, when a general manager at state-owned National Insurance Company challenged the appointment of a person junior to him for Directors position by the BBB. Consequent to the order, 10–11 directors appointed by the BBB had to vacate office.

## Depreciation of Indian rupee

### News Excerpt

Recently, Finance minister in Lok Sabha asserted that Indian rupee has declined by about 25 per cent in comparison with the US dollar. Trends have shown that 1 US dollar now cost over 80 rupees, a new low in the history of Dollar-rupee currency exchange rate.

### Key Facts

- The price of one currency in terms of other currency is called exchange rate.
- Exchange rate system is classified into
  - Fixed Exchange rate system
  - Floating Exchange rate system
- Under Fixed exchange rate system central bank of a country itself decide the rate of its currency to foreign currency:
  - If it decides to strengthen its currency then it is called Revaluation.
  - If it decides to weaken its currency then it is called devaluation.
- Under the Floating exchange rate system market mechanism of supply and demand decides the exchange rate:
  - If currency gets strengthen then it is called currency Appreciation.



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- If currency gets weaken then it is called Depreciation.

- **India since 1995 is following a managed floating exchange rate** wherein RBI follows a minimum reserve system in which it keeps gold of some amount along with some additional amount of foreign currency or securities.
- **Nominal Effective Exchange rate (NEER):** Tracking of only dollar-rupee exchange doesn't provide full picture as India trades with others countries and thereby in their currency. Therefore, RBI calculates **geometric average of rupees exchange rate against upto 36 types of foreign currency**. This average is called NEER.
- **Real Effective Exchange Rate (REER)** - When NEER is adjusted as per the **CPI-Inflation levels in India and those foreign countries it is called real effective exchange rate.**
- NEER vs REER give us the real picture on currency being strengthening or weakning against foreign currencies and this help us in understanding our export competitiveness.

### Why Is Rupee Falling?

- The rupee has been on the decline since early this year, especially after supply chain disruptions in view of the Russia-Ukraine war, global economic challenges, inflation, and high crude oil prices, among other issues.
- Besides, there have been heavy foreign fund outflows from the domestic markets as the foreign institutional investors (FIIs) have sold shares worth $28.4 billion so far this year, outstripping the $11.8-billion sell-off seen during the Global Financial Crisis of 2008. The rupee has depreciated 5.9 per cent versus the dollar so far this calendar year.
- Meanwhile, the US Federal Reserve recently increased the interest rates, and the return on dollar assets increased compared with those of emerging markets such as India.

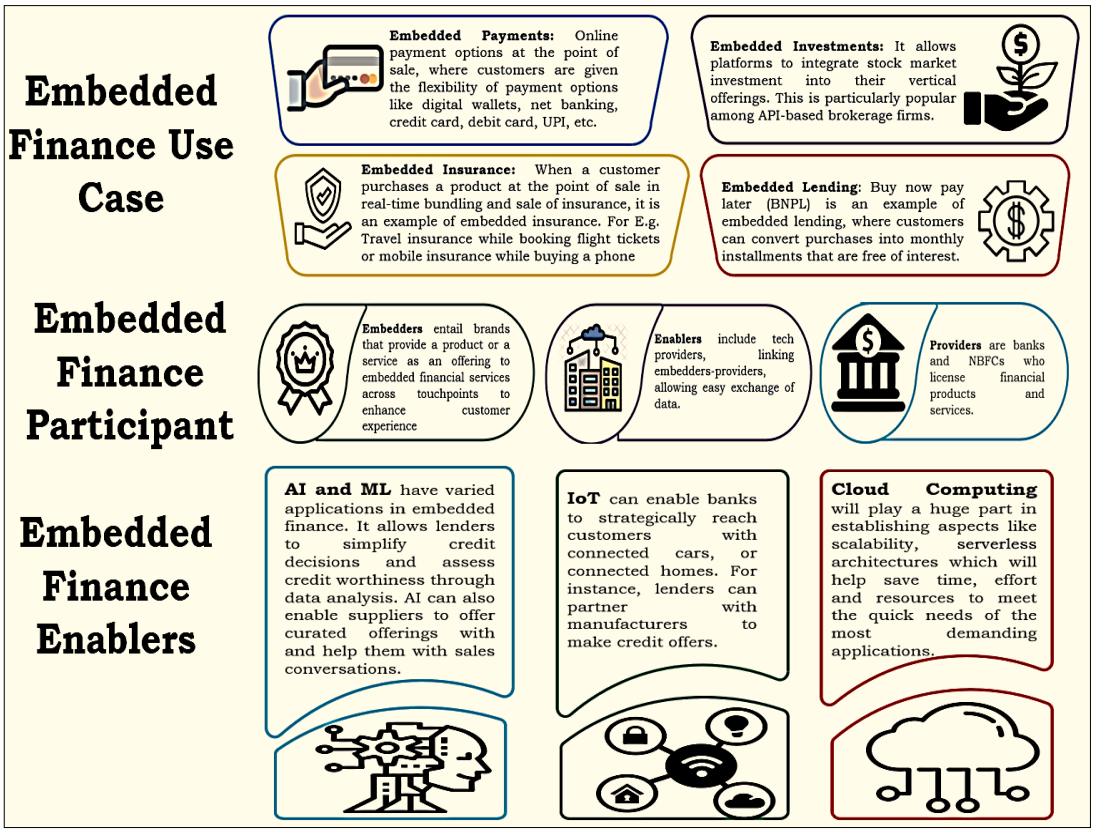
## Embedded Finance

### News Excerpt

Embedded finance is the new norm in payments and banking. It is poised to play a significant role in revolutionizing the banking sector in India and is set to play a crucial role in financial inclusion in India.

### Understanding Embedded Finance

- It is the **seamless integration of financial services into a traditionally non-financial service.** This enables customers to access financial services within the ecosystem of the business.
- For instance, it allows a customer to make cashless payments within a ride-hailing app, or make a cashless purchase on an online store without having to leave their buying journeys.



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### ➢ Advantages offered by Embedded System

- It can streamline financial processes for mid-market businesses by lowering barriers to entry for various products and services through business-to-business payment.
- It can address and smoothen liquidity gaps and cash-flow management by making procedural work integral to day-to-day business activities.
- It is expected to increase the total size of the financial services sector through the exponential creation of credit and other use cases.
- It's a people-first approach to finance that allows consumers to access financial services exactly where and when they need them without diluting the context.
- It makes the digital discovery of credit products easy by conveniently positioning credit products ***'in-context'*** and by educating consumers.

**Financial Inclusion through Embedded Finance**

Embedded finance can provide new channels for delivering financial services to those underserved by integrating financial services into non-financial products and services. Further, it can potentially increase competition in the financial services market, resulting in better products and services for customers. Financial inclusion, aided by embedded finance, makes financial services more convenient and accessible. For example, by incorporating financial services into mobile apps, people can use their smartphones to access financial products and services anytime and from any location.

- It leverages the platform's deep understanding of the customer and tailors the credit product for the specific needs of the end customer.

## RBI Issues guidelines to regulate digital lending

### News Excerpt

The Reserve Bank of India (RBI) issued **the first set of guidelines for digital lending**, to crack down on illegal activities by certain players. This follows **the recommendation of a Working Group on Digital Lending (WGDL)** that had submitted its report recently.

### Key Facts

- Digital Lending involves lending through web platforms or mobile apps, utilizing technology for authentication and credit evaluation.
- Over 190 million Indian adults don't have any kind of bank account thereby representing a huge opportunity. Over the years, the digital lending market in India has significantly expanded. The value of digital lending rose from USD 33 billion in FY15 to USD 150 billion in FY20 and is projected to reach USD 350 billion by FY23.

**RBI has categorised digital lenders into three groups:**

- Entities that are regulated by the RBI and are allowed to carry out lending business.
- Entities that are authorized to carry out a lending as per other statutory or regulatory provisions but are not regulated by the RBI.
- Entities lending outside the purview of any statutory or regulatory provisions.

**Guidelines by RBI**

- The RBI has mandated following regulations in order to check mis-selling to customers, unethical business conduct, exorbitant interest rates, and excessive engagement of third parties in digital lending transactions.
- All loan disbursals and repayments are to be executed between the bank accounts of the borrower and the entity. This eliminates the presence of a nodal pass-through or pool account of the LSP.
- Lenders must inform the borrower about all the fees, charges, and the annual percentage rate (APR) in a standardised format.
- Charges payable to LSPs in the credit intermediation process will be paid directly by the bank and not the borrower.
- No automatic increase in credit limit can be made without the explicit consent of the borrower.
- Data collected by digital lending apps must be need-based, with the borrower's prior consent, and can be audited if required.



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- Banks and the LSPs associated with them must appoint a nodal grievance redressal officer to deal with FinTech- or digital lending-related complaints.
- The borrower can complain to the Integrated Ombudsman Scheme of the RBI if their grievance is not resolved by the bank within 30 days.
- Regulated Entities are required to ensure that any lending carried out through digital lending apps has to be reported to Credit Information Companies (CICs).
- Lending through the Buy Now Pay Later (BNPL) mode also needs to be reported to the CICs.

**RBI regulates Fintech Companies**

- RBI has termed Fintechs as direct service providers or DSPs, thus giving it official status of DSAs or direct selling agents, often the link between banks and customers in the traditional world.
- Any loan related transaction, whether execution of loan documents, disbursement, or repayment, is now mandated to be directly transacted between the borrower and the regulated entities. This ensures that money and the paper trail is not left with the intermediary or the DSP.
- In a bid to improve transparency and secure the trust of the customer, the regulations state that the cost of the transaction will now have to be borne by the regulated entity and like with any loan product, all-inclusive cost of the loan should be revealed to the customer. The room to charge exorbitant fees by Fintechs is now set to disappear. The issue of customer's credit score getting hurt without their knowledge is also effectively addressed.
- The RBI has mandated to report all lending transactions done through DSPs to credit information bureau. Therefore, whether a customer is on boarded through a third party FinTech app or directly by the bank, the onus of running a check on the customer's credit worthiness fully vests with the regulated entity. This also addresses the issue of ever greening of loans.
- The RBI is insisting that data on transactions through the loan apps must be preserved within the country. Likewise, it is now stipulated that the app cannot collect customer-related data without customer consent and that data collected should be need-based. An audit trail of such data is also now necessary.

## RBI's Fraud Registry

### News Excerpt

The Reserve Bank of India (RBI) is **considering** setting up a fraud registry as part of its efforts to **strengthen customer protection and check digital frauds**. It will create a database of fraudulent websites, phones and various methods used by fraudsters.

**Google Awareness**

- Google launched a New Multilingual campaign against digital fraud in which it is collaborating with MeitY and Digital India to create a pan-India, multilingual user awareness campaign.
- Google is providing grant support to local non-profits to launch outreach programs for these users belonging to vulnerable communities like Senior citizens, LGBTQ+ communities, in the local languages.

**Government Initiatives to counter Digital Frauds**

- Government launched an Inter-Ministerial Committee on Phone Frauds composed of members of stakeholder organisations such as the Ministry of Electronics and Information Technology (MeitY), the Department of Financial Services, Department of Telecommunication, and Reserve Bank of India and law enforcement agencies.
- National Cyber Crime Reporting Portal, was launched by the central government to enable complainants against all types of cybercrimes, including net and online frauds.

### Key Facts

- As per the Reserve Bank of India's (RBI) Annual Report 2021–22, the volume of frauds reported by financial institutions (FIs) using cards and internet banking was 34% higher at 3,596 in 2021–22 as against 2,677 frauds in 2019–20.
- The value of fraudulent transactions in 2021–22 was INR 1.55 billion – 20% more than that in 2019–20 (INR 1.29 billion).



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## DIGITAL BANKING UNITS DEDICATED TO NATION

### News Excerpt

Prime Minister on 16 October 2022 dedicated 75 digital banking units to the nation, taking forward an announcement that was made in the 2022-23 Union Budget by Finance Minister Nirmala Sitharaman. The digital banking units will "**further financial inclusion"** and **"significantly improve banking experience for the citizens**".

### Key Facts

- **Reserve Bank of India (RBI)** announced the guidelines for DBUs, following the report of a working group of the **Indian Banks Association (IBA).**
- A digital banking unit is a **specialized fixed point business unit or hub**, housing a certain minimum digital infrastructure for **delivering digital banking products and services** as well as servicing existing financial products and services digitally in self-service mode at any time.
- **Commercial banks** (other than regional rural banks, payment banks and local area banks) **with past digital banking experience** are permitted to **open DBUs in tier 1 to tier 6 centers**, unless otherwise specifically restricted, without having the need to take permission from the RBI in each case.
- The services include saving bank accounts under various schemes, current accounts, fixed deposit and recurring deposit accounts, digital kits for customers, mobile banking, Internet banking, debit cards, credit cards, and mass transit system cards, digital kits for merchants, UPI QR codes, BHIM Aadhaar and point of sale (PoS).

#### What was the initial announcement?

In the Budget for 2022-23, the Finance Minister said: "In recent years, digital banking, digital payments and FinTech innovations have grown at a rapid pace in the country.

The government is continuously encouraging these sectors to ensure that the benefits of digital banking reach every nook and corner of the country in a consumer-friendly manner.

Taking forward this agenda, and to mark 75 years of our independence, it is proposed to set up 75 Digital Banking Units (DBUs) in 75 districts of the country by Scheduled Commercial Banks"

## Internationalisation of Rupee

### News Excerpt

Recently, the RBI deputy governor highlighted the advantages and risks associated with the Internationalisation of the Indian Rupee.

#### Understanding Current and Capital Accounts

Every country keeps a record of all economic transactions made between the residents and non-residents for a specific time. **This is known as the Balance of Payment (Bop). BoP is sub-classified into two parts which are:**

**Current Account**: It includes a transaction of Goods and Services, Income from primary sources such as wages, dividends, and interest, and Income from secondary sources such as remittances, gifts, and donations.

**Capital Account:** It can also be considered a financial account as it includes Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), External Commercial Borrowings (ECBs), NRI investment in the bank, insurance, and other schemes, and foreign exchange reserves of the RBI.

### Key Facts

- An international currency is a currency that is freely available to non-residents, essentially to settle cross-border transactions.
- Mostly advanced economies' currencies enjoy such status and it confers substantial economic privileges to those countries. For example, the Dollar carries not only hegemonic powers but also immune the US from any Balance of Payment crisis as it can pay for its external deficits with its currency.
- Therefore, an internationalized rupee will be used for settling transactions in both the current account as well as capital account. Presently, India only has current account convertibility. The **SS Tarapore Committee** recommended full capital account convertibility.

### Steps taken towards internationalisation of the Rupee



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- Masala Bonds which allowed for external commercial borrowings in Rupees.
- Recently RBI has allowed domestic traders to settle their import and export bills in Indian Rupee. Asian Clearing Union is also developing an arrangement under which importers of each country will have a choice to pay in domestic currency.

**Design of Indian Currency**

Design and changes in the Indian rupee have to be approved by the RBI's Central Board (Under Section 25 of the RBI Act 1934) and the central government. Changes in the design of coins are the prerogative of the central government. RBI's Department of Currency Management looks after the design of banknotes. If the design of a currency note has to change, the Department works on the design and submits it to RBI, which recommends it to the central government. The government gives the final approval. Notes issued by the department so far include:

- **Ashoka Pillar Banknotes:** The first banknote issued in independent India was the Re 1 note issued in 1949 they had the symbol of the Lion Capital of the Ashoka Pillar at Sarnath in the watermark window.
- **Mahatma Gandhi (MG) Series,** 1996. 2005 and 2016.

## Central Bank Digital Currency

### News Excerpt

The Reserve Bank of India had rolled out **India's first digital rupee pilot project** for the **wholesale segment** and will soon be launching it for retail users as well.

### Key Facts

#### Evolution of Digital Currency

- David Chaum in the year 1983 imagined the concept of Digital Cash based on the cryptographic principles of privacy and security.
- With the development of Block chain technology, Bitcoins were developed which eliminated the need for a trusted third party and allowed decentralized payments which are cryptographically signed and secured to validate payments.
- Central banks worldwide have closely monitored the developments in virtual and cryptocurrency for many years before it becomes very volatile and threatened economic stability.

#### Digital or Crypto Currency in India

- Initially, RBI placed a Ban on Cryptocurrency, but it was revoked in 2020 by Supreme Court as it did not pass the test of proportionality.
- The government of India has formed two committees on Cryptocurrency, one under **Dinesh Sharma and another under Subhash Garg,** both suggesting to ban cryptocurrency.
- Under the Cryptocurrency and Regulation of Official Digital Currency Bill, 2021, the government was ostensibly planning to ban all private cryptocurrencies. However, the government made it clear that if RBI launches a block chain-based digital currency it will be permitted.
- In Union Budget 2022, the government announced a 30% Capital Gain Tax on income from virtual digital assets including cryptocurrency and Non-Fungible Tokens. It also proposed 1% TDS on the purchase of Bitcoin.

#### Central Bank Digital Currency (CBDC)

Globally, multiple countries are exploring CBDC. Ten countries have launched CBDC, the Bahamas **(Sand Dollar)** was the first to release it in 2020 and recently Jamaica also followed the suit.

#### E-Rupee

- It is RBI's CBDC which has sovereign backing and is released in accordance with monetary policy.
- It is **a legal tender**.
- It is **freely convertible** against the **physical currency** which means the digital currency can be exchanged for cash equivalent to paper notes. Unlike UPI, a customer doesn't need a bank account to transact using e-rupees.
- The infrastructure of CBDCs **is based on Distributed Ledger Technology** (Block chain).
- They are divided into two categories
  - **CBDC-W**: CBDC-Wholesale is for restricted access to select financial institutions. It is intended for the settlement of interbank transfers and related wholesale transactions. It has the potential to transform settlement systems for financial transactions and make them more efficient and secure.



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- **CBDC-R:** CBDC-Retail is primarily meant for retail transactions. It can provide access to safe money for payment and settlement as it is a direct liability of the Central Bank.

- There are two models for the issuance and management of CBDCs- under Direct Model- RBI is responsible for managing all aspects of the CBDC system viz. issuance, account-keeping, and transaction verification. Under the Indirect Model- the central bank issues CBDC to consumers indirectly through intermediaries and any claim by consumers is managed by the intermediary as the central bank only handles wholesale payments to intermediaries.
- CBDC-R is structured as token-based i.e. like a bearer instrument like banknotes, meaning whosoever holds the tokens at a given point in time would be presumed to own them. CBDC-W is structured as an account-based system in which maintenance of records of balances and transactions of all holders of the CBDC is kept to indicate the ownership of the monetary balances. In a token-based CBDC, the person receiving a token will verify that his ownership of the token is genuine, whereas, in an account-based CBDC, an intermediary verifies the identity of an account holder.

## Foreign Exchange Reserve and Rupee Depreciation

### News Excerpt

Foreign exchange reserves of India (**Asia's third-largest economy**) **fell** by $4.85 billion to $532.66 billion for the week ending Sep 30, according to data released by the Reserve Bank of India

### Key Facts

- Forex or foreign exchange reserves are essentially assets held by the central bank in foreign currencies as a reserve. They are usually used for backing the exchange rate and influencing monetary policy.
- In the case of India, our forex reserves include dollars, gold, and the International Monetary Fund's quota for Special Drawing Rights. Most of the reserves are usually held in US dollars given the currency's importance in the international trading and financial system. Though central banks also hold reserves in British pounds, euros, Chinese yuan, or the Japanese yen, in addition to their US dollar reserves.

### Cause of decline

- ✓ **RBI's action to check depreciation of rupee:** Analysts believe a large part of the fall has been on account of the Reserve Bank of India's intervention in the currency market to prevent the rupee from depreciating more sharply against dollar.
- ✓ **Appreciation of US Dollar:** According to Finance minister (in the ongoing annual meeting of the World Bank and the International Monetary Fund), the decline in India's foreign exchange reserves is largely due to the valuation changes arising from an appreciating U.S. dollar. The US dollar reached its highest level in two decades.
- ✓ **Slowdown in FII inflow:** Because of increasing interest rate in United States. So far, in 2022, FIIs have removed ₹270,246.51 crore from the equities.
- ✓ **Increasing import bills because of high crude oil and food prices.**

## Failure in Inflation Targeting

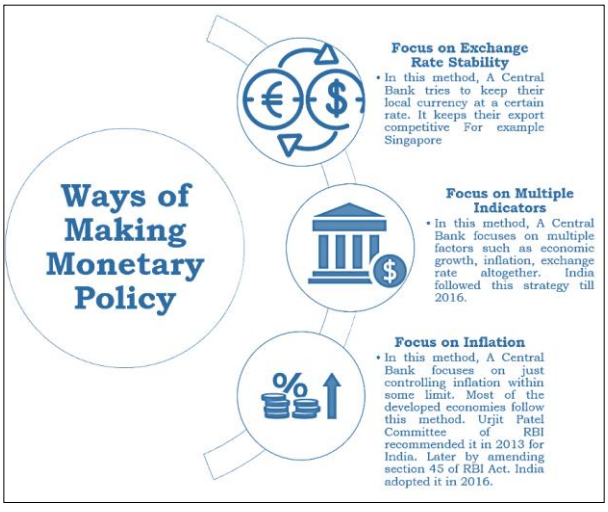
### News Excerpt

The **Monetary Policy Committee (MPC)** of the Reserve Bank of India (RBI) will soon submit its response to the Government of India about the high rate of inflation in the country.

### Key Facts

### Understanding Monetary Policy (MP)

- MP is a macroeconomic policy designed by the Central Bank of a country. It aims to **manage the money supply and interest rates.**
- RBI since 2016, is following the Inflation target regime under its monetary policy regime. For this, it has a Monetary Planning committee (MPC).
- MPC, Consists of six members-



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- **Three from the RBI Side** (RBI Governor as Ex-Officio Chairman, Dy. Governor responsible for Monetary Policy, and One Person nominated by the RBI central board).
- **Three from Government Side** (Selected by Search-cum-Selection Committee headed by Cabinet Secretary)

- They decided **on Repo Rate (Also known as, Policy Rate or Benchmark Rate)** by majority vote. In case of tie, **RBI governor has second casting vote**.
- The inflation target is **set by the Union government** in consultation with the RBI governor.
- To target inflation benchmark is **Consumer Price Index (combined).**

**Limitation of Monetary Policy**

In India, the use of Monetary Policy to target inflation and boost economic growth is impacted by several reasons:

- **Banking Issues:** A huge level of Non-performing assets (NPA) impacts the transmission of monetary policy. Financial frauds in both Public, as well as Private sector banks, restrict capital formation and impact the trust of depositors. Banks takes 6-12 month to transfer policy-cut benefits to the end customers.
- **Culture of the Indian Economy:** In western economies, there is a culture of consumerism hence their saving rate is low. But in India, it is diametrically opposite, there is a culture of saving for rainy days. Therefore, Banks don't depend on Repo as a major source of its fund. Further, In India, formal lending is also low, in rural areas informal moneylenders circulate black money and charge high-interest rates to their borrowers.
- Lack of **ease in doing business** and crucial infrastructure, coupled with heavy dependence on monsoon and high energy imports creates a structural imbalance in the Indian economy.
- A **high fiscal deficit** and a new trend of populist measures in Indian polity create further trouble for economic policy.
- **Unable to address supply side issues:** Monetary Policy is effective in managing only the demand-side issues. However, it is unable to address any supply-side constraints (like food inflation because of high import price).

**Report to the Government in case of failure of monetary policy**

- If the target is not within the range (**within 2 to 6 percent band**) **for 3 consecutive quarters,** then MPC must send report to the government about the same with remedies.
- Under the RBI Act, 1934, MPC is required to provide the following information to the government:
  - **Reasons for the failure to achieve the inflation target.**
  - **Remedial actions needed to be taken.**
  - **An estimate of the time within which the inflation target shall be achieved under the timely implementation of the proposed remedial actions.**

**RBI's Failure:** The retail inflation based on CPI (Combined) has remained above 6 per cent since January 2022. This made RBI liable to submit report to the Government.

**Challenges RBI facing on Monetary Policy Front**

- **Global Inflation:** The trend of global inflation has forced central banks across the globe to resort to hawkish monetary policy. It had led to massive capital outflows in India.
- **Oil price rise:** Ukraine War has severely affected the oil supply and crude oil prices. This is driving a rise in the Current Account Deficit (CAD) for India as India is heavily dependent on oil imports.
- **Rupee Depreciation:** As the US dollar gets strengthened, the Indian rupee is witnessing a depreciation. This has brought imported inflation in India.
- **Trade Deficit and Current Account Deficit:** India has been witnessing a double whammy of rising Trade deficit and Current account deficit. Both of them are depleting India's forex reserves.
- **Growth Issue:** There exists a risk to economic growth. As US Federal Reserve tightens its monetary policy risk of a global economic recession looks almost certain.

## Nostro vs Vostro Account

**About:** The government of India decided to open 9 Vostro accounts with 2 Indian banks to circumvent sanctions imposed on Russia and do trade in the Indian rupee.



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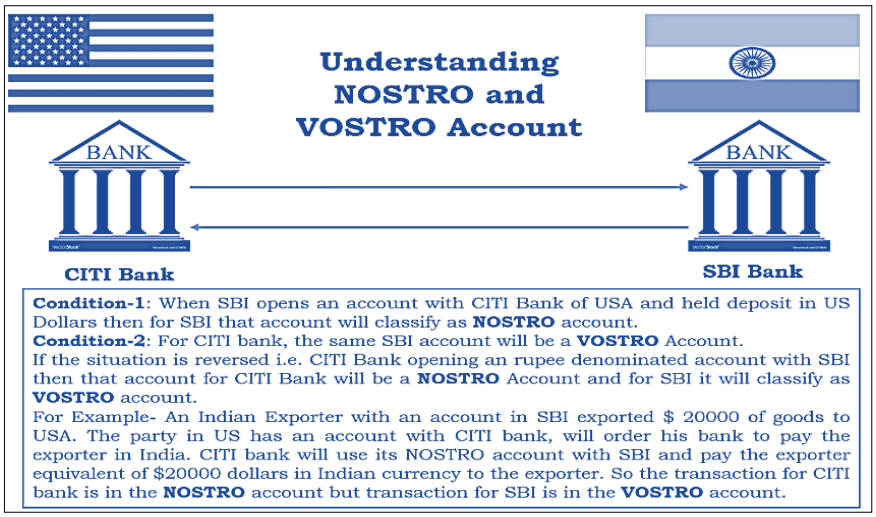
- Nostro and Vostro are Latin words that mean "Our Money with you" and "Yours Money with us" respectively.
- A Vostro account is an account that a domestic bank holds for a foreign bank in the domestic bank's currency.
- A Nostro account is an account of a domestic bank held in a foreign bank in foreign currency.
- They have wide applications ranging from foreign trade to remittance transfer.




## INDIA'S FIRST INTERNATIONAL GOLD EXCHANGE

### News Excerpt

Prime Minister on 29 July 2022 launched India's first International Bullion Exchange - International Bullion Exchange **(IIBX) - in the GIFT city** (Gujarat International Finance Tec-City). India International Bullion Exchange Ltd (IIBX) is **promoted by five market institutional investor's i.e., CDSL, India INX, NSDL, NSE and MCX.**

### Key Facts

- It offers a **diversified portfolio of products and technology services** at a cost which the exchange claims is far more competitive than the Indian exchanges as well as other global exchanges in Hong Kong Singapore, Dubai, London and New York.
- This exchange will facilitate efficient price discovery with the assurance of responsible sourcing and quality, apart from giving impetus to the financialisation of gold in India.
- The global gold exchange aims to create a regional bullion hub that will allow more jewellers to import the precious metal.
- The bourse will allow qualified jewellers to directly import gold, a change from current rules where only some banks and nominated agencies approved by the central bank can do so.
- Apart from qualified jewellers, foreign bullion suppliers who follow OECD guidelines, public, and private firms, and Non-resident individual (NRIs) are also eligible to become members of the IIBX.
- **International Financial Services Centres Authority (IFSCA)** is the regulator of IIBX.
- Finance Minister Nirmala Sitharaman in Union Budget 2020-21 had announced the setting up of IIBX at IFSCA.

## SC VERDICT ON THE MONEY LAUNDERING ACT

### News Excerpt

The Supreme Court 27 July 2022 upheld the constitutional validity of the Prevention of Money Laundering Act, 2002.

### Key Facts

- The Enforcement Directorate under the PMLA Act is not considered "police" and hence does not follow provisions of the CrPC for search, seizure, arrest, attachment of properties.
- The petitioners, arguing that the ED effectively exercises police powers, challenged the constitutionality of provisions that deal with arrest and seizure etc.
- This is significant because since the **ED is not a police agency, statements made by an accused to ED officials is admissible in court. A statement made before a police officer during investigation is inadmissible**.
- The **Supreme Court rejected the argument that the ED should be obligated to follow the CrPC while conducting investigations**.



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- The PMLA Act stipulates a twin condition for bail where the accused has to make a case that she is prima facie not guilty of the offence and also satisfy the court that they will not commit any further offence.
- In a 2017, ruling Nikesh Tarachand Shah vs Union of India, the Supreme Court struck down this as unconstitutional.
- However, in a subsequent amendment in 2018, Parliament inserted these provisions again, through the Finance Bill.
- The petitioners had challenged the amendments on two grounds — the passing of these amendments through a Money Bill; and a substantive challenge that these provisions were essentially declared unconstitutional.

# Financial Market

## Surety Bonds

### News excerpt

In a bid to break the deadlock over the launch of Surety Bonds, the **Ministry for Road Transport & Highways (MORTH)** has asked insurance regulator **IRDAI** to develop a model product on Surety Bonds in consultation with general insurers.

### Key Facts

- A surety bond can be defined in its **simplest form as a written agreement to guarantee compliance, payment, or performance of an act.** Surety is a unique type of insurance because it involves a three-party agreement. The three parties in a surety agreement are:
- **Principal** – the party that purchases the bond and undertakes an obligation to perform an act as promised.
- **Surety** – the insurance company or surety company that guarantees the obligation will be performed. If the principal fails to perform the act as promised, the surety is contractually liable for losses sustained.
- **Obligee** - the party who requires, and often receives the benefit of— the surety bond. For most surety bonds, the obligee is a local, state or federal government organization.
- The Budget 2022-23, allowed the use of surety insurance bonds as a substitute for bank guarantees in case of government procurement and also for gold imports.
- Following this, **Insurance Regulatory and Development Authority of India (IRDAI**) released final guidelines to ensure orderly development of surety insurance business in India. The IRDAI (Surety Insurance Contracts) Guidelines, 2022 will came into effect from 1st April, 2022.

### Types of surety bonds

- Advance Payment Bond: It is a promise by the Surety provider to pay the outstanding balance of the advance payment in case the contractor fails to complete the contract as per specifications or fails to adhere to the scope of the contract.
- Bid Bond: It provides financial protection to an obligee if a bidder is awarded a contract under the bid documents, but fails to sign the contract and provide any required performance and payment bonds.
- Contract Bond: It provides assurance to the public entity, developers, subcontractors and suppliers that the contractor will fulfil its contractual obligation when undertaking the project. Contract bonds may include: Bid Bonds, Performance Bonds, Advance Payment Bonds and Retention Money.
- Customs and Court Bond: This is a type of guarantee where the obligee is a public office such as tax office, customs administration or the court, and it guarantees the payment of a public receivable incurred from opening a court case, clearing goods from customs or losses due to incorrect customs procedures.
- Performance Bond: It provides assurance that the obligee will be protected if the principal or contractor fails to perform the bonded contract. If the obligee declares the principal or contractor as being in default and terminates the contract, it can call on the Surety to meet the Surety's obligations under the bond.

### What is the benefit to a contractor, infra player?

By issuing the surety bond, the contractor does not have to furnish a hefty bank guarantee. The bank guarantee blocks a huge amount. Surety bonds create a level playing field, empower the small and medium contracts to bid for a project at par with a large contractor with financial muscle.

### Benefits of surety bonds

- The big challenge for new players is that often they find it difficult to get bank guarantees and that's where the role of Surety Bonds comes in. The government has planned investment worth Rs 7 trillion for infrastructure projects to be spent over the next 2-3 years.



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- To reduce indirect cost for suppliers and work-contractors, the use of surety bonds as a substitute for bank guarantee will be made acceptable in government procurements.
- The large liquidity and funding requirements of the infrastructure sector can be addressed with surety bonds. It will create a level-playing field for large, mid and small contractors.
- Customers may have concerns about working with an unfamiliar business, especially in an industry that may be targeted by fraudsters. The bonding process boosts consumer confidence in your business because customers know you can be held accountable for your performance and they won't risk losing a large sum of money if you fail to provide the services or products promised.

## DRAFT OF NCRF RELEASED

### News Excerpt

**Draft National Credit Framework (NCrF),** a unified ***credit*** accumulation and transfer ***framework*** applicable to school, higher and vocational education, was put in public domain by **Education Minister** Dharmendra Pradhan on 19 October 2022. It has been drafted by an **11-member committee headed by National Council of Vocational Education and Training (NCVET)** chairperson Nirmaljeet Singh Kalsi.

### Key Facts

- Credits are essentially a "recognition that a learner has completed a prior course of learning, corresponding to a qualification at a given level", according to the draft document. In other words, it is a way of quantifying learning outcomes.
- Credit frameworks are guidelines to be followed by schools, colleges and universities in adopting the credit system.
- For example, the National Higher Education Qualification Framework (NHEQF) lays out the guidelines for higher educational institutions that want to implement the credit system.
- The proposed NCrF seeks **to integrate all the frameworks under one umbrella.** Moreover, it also brings **the entire school education system under the ambit of credits for the first time**.

How will the credit points be obtained?

1. For the purpose of calculation, the NCrF has divided the education system into multiple levels. For school education, there are four levels.
2. Students clearing class XII will be at credit level 4. For higher education, the levels are from 4.5 to 8 — which is basically from first year UG to PhD.
3. The total credit points earned by the student will be obtained by multiplying the credits earned by them with the NCrF level at which the credits have been earned.

- **So far, only the National Institute of Open Schooling followed a credit system**. The NCrF also covers skill and vocational education.
- According to the University Grants Commission (Establishment and Operation of Academic Bank Of Credits in Higher Education) Regulations notified in July, 2021, the credits shall remain **valid for a maximum duration of seven years**.

## Sovereign Green Bond

### News Excerpt

Recently, the Government of India has approved **the final Sovereign Green Bonds Framework of India.** They will be issued for mobilizing resources **for green projects**.

### Key Facts

- A bond is an instrument to raise debt.
- Since 2007, a market for bonds specifically self-labelled or designated as 'green' has emerged. They are exclusively used to finance or re-finance "green" projects, assets, or business activities.
- When these bonds carry guarantees related to the repayment of principal and payment of interest to the **government**, they are called **sovereign green bonds.**

**Headline vs Core Inflation**

- Headline Inflation: This is the measure of the total inflation within an economy which is presented in the form of Consumer Price Index or Wholesale Price Index.
- Core Inflation: Headline inflation MINUS inflation in food & energy articles.



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- A project is classified "green" based on four key principles. These include
  - **Encouraging energy efficiency in resource utilization.**
  - **Reducing carbon emissions and greenhouse gases.**
  - **Promoting climate resilience.**
  - **Improving natural ecosystems and biodiversity, especially in accordance with SDG (Sustainable Development Goals).**
- SGB is in form of **dated security**. They **will have a tenor and interest rate**. Money raised through SGB is part of overall government borrowing.
- They **may carry lower interest rates than regular government borrowings.**
- They carry several benefits such as:
  - They show the intent of the government on the climate front and provide funds to achieve sustainable development.
  - According to **International Energy Agency,** there is a shortage of funding required to reach net zero (around 4 trillion US dollars) emissions in emerging and developing economies. These can help in kick starting cash flow for the process.
- In 2007, the European Investment Bank issued **a Climate Awareness Bond**, the world's first green bond. **The first sovereign green bonds were issued by Poland and France** as recently as early 2017.
- In end-2019, the share of sovereign issuers in total outstanding GSS bonds was only 4.2 percent, but it increased to 7.5 percent by end-June 2022.

**Battery Swapping**

- It is the procedure that involves exchanging discharged batteries for charged ones.
- It provides flexibility in charging batteries and keeps the vehicle in operational mode with negligible downtime.
- It is generally used for smaller vehicles with smaller batteries that are easier to swap, compared to large vehicles such solutions are yet to be developed.
- NITI Aayog had released a draft on battery swapping in which such swapping will fall under the **Battery-as-a-Service (BaaS) business model. It calls for the Bureau of Energy Efficiency (BEE) to be the Central Nodal Agency responsible for the rollout and implementation of this policy**.

**Sovereign Green Bonds Framework**

- It is in line with India's commitments under **"Panchamrit"** made during COP 26.
- It will strengthen India's commitment to its Nationally Determined Contribution (NDCs) targets.
- A new **Green Finance Working Committee (GFWC)** will be constituted to validate key decisions on the issuance of Sovereign Green Bonds.
- **All fossil fuel-related projects have been kept out of the framework**, along with biomass-based renewable energy projects that rely on feedstock from protected areas.

## Crypto-Bankruptcy

**News Excerpt**

Recently, the Lehman brother moment of crypto-currencies happened with the bankruptcy of **FTX, the world's second-largest crypto exchange**. Investigations have pointed toward the malpractices in the FTX from market manipulation to fraudulent transactions. FTX crash yet again points towards the problem with economic bubbles.

**Key Facts**

**Understanding Economic Bubbles**

- A bubble is an economic season with a very fast increase in asset prices with subsequent shrinkage of the economy. It occurs any time that the price of a good rises far above the item's real value.
- There are a few main types of economic bubbles: stock market bubble, real estate bubble, and bubbles on other markets, including precious metals, energy resources, and other goods.
- The causes of an economic bubble are highly debated, broadly there are two schools of thoughts
  - The Classical-Liberal Perspective
    - Its supporters see the monetary policy of a central bank as unnecessary interventions that distort markets thereby yielding negative consequences which lead to an economic bubble.



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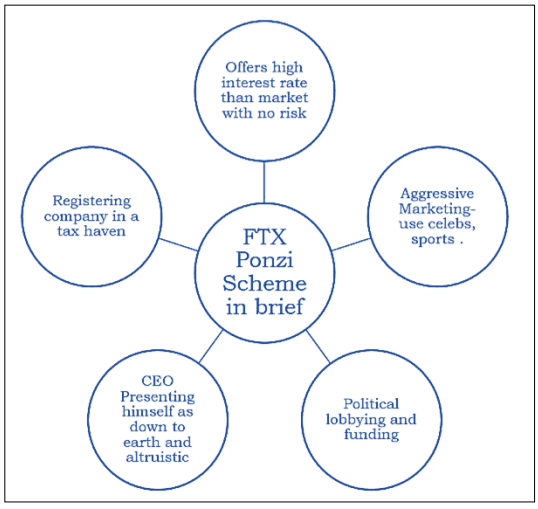
- They believe the easy monetary policy of the central bank leads to rapid credit growth and as a result an economic bubble.
- The Keynesian Perspective
  - They believe it is the animal spirit behind the economic bubble which causes investment prices to rise and fall based on human emotion rather than intrinsic value.
  - They believe that recessions and depressions are unavoidable and that an active central bank can mitigate fluctuations in the business cycle.

- Other than these there are several other reasons responsible for an economic bubble these include:
  - A bubble is formed when investment coverage increases in the fixed investment capacity and thus resources of growth decrease with the efficiency of investments rising sharply.
  - Poor regulation by market regulators allows vested interests to take shape and prosper without following any sound economic policy. A prime example is the 2008 Global Financial crisis.
- Impact of an Economic Bubble
  - The majority of the burden of economic bubbles always falls on the poor. It results in job loss and an economic recession with a global impact owing to globalization.
  - For example, in the aftermath of the 2008 global financial crisis, not even a single CEO responsible for speculative trading and following risky trading lost even a single penny out of the hefty bonuses they were making. On the other hand majority of pension funds went bankrupt forcing old age people with low skills back into the job market.
- Several steps can be taken to counter economic bubbles
  - An increase in investment capacity. It can be done in two ways either by occupying new markets or applying research and development for creating new technologies.
  - The early prediction of bubble formation would allow preventing the burst of the bubble and the hard landing of the economy.

**Regulating finfluencers**

- Finfluencers are social media influencers who advise on finance and investment. This is a welcome step as it has been reported in recent times that social media influencers often re-purpose paid-for plugs as 'free' educational content and monetize their large follower base by taking hefty fees from financial firms.
- SEBI has decided to regulate finfluencers, it has barred Commission-earning mutual fund distributors from giving fund advice.
- Further, All individuals and firms dispensing advice on mutual funds or listed securities are required to register with SEBI either as Research Analysts or Registered Investment Advisers (RIAs), adhering to minimum academic qualifications and eligibility criteria.




**FTX-Crash-Genesis**

- Before the foundation of FTX its CEO SBF founded Almeda Research which was buying crypto in the US market and selling it in a foreign market at a higher price and therefore earning from the difference.
- To scale up his business he founded FTX which made money from the commission on trading made by its users on various cryptocurrencies. Later FTX introduced its coins FTT which were utility points but were masked as stocks. FTT doesn't carry any intrinsic value.
- FTX was running a fraudulent cryptocurrency scheme. If a user wishes to buy FTT s/he cannot buy it directly from FTX as it cannot accept wire transfers (done deliberately). They have to send money to Alemda research and then they get the coins. Now ideally, Almeda should have transferred the money back to the FTX account, however, it didn't happen. Rather Almeda used the money to trade into the market and lost huge amounts of money as other crypto giants fall.
- As the news of this accounting fraud came out, panic-stricken investors started withdrawing their money leading to a liquidity crunch and the eventual bankruptcy of FTX.



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## Blended Finance

### News Excerpt

India will require cumulative investments of $10 trillion to achieve its net zero targets by 2070. One of the financing tools India can use in achieving this target is **Blended Finance**.

### Understanding Blended Finance

- The term 'blended financing' refers to the **strategic use of public and philanthropic resources to mobilize private capital for development purposes.** For example, to facilitate the flow of new capital into high-impact sectors such as agriculture, blended finance can be used to effectively leverage the expertise of the private sector in identifying and executing developmental investment opportunities and strategies.
- The concept of blended finance refers to a structural approach that helps enterprises achieve their various objectives at the same time, including financial return, environmental impact, or both.

### Mechanics of Blended Finance

- Blended finance is more than an instrument; it is an investment structure that allows multiple investors to participate according to their specific investment objectives.
- Blending finance typically involves the use of multiple financing instruments, including grant capital, debt, and equity, the aim is to attract private-sector investment.
- In the agriculture sector, blended finance can be used to support smallholder farmers, rural infrastructure projects, and agricultural value chains.
- When properly structured, blended finance can help to attract private investment while also achieving development goals. As the field of blended finance continues to evolve, it has the potential to play an important role in supporting the agriculture sector and other sectors.
- Blended finance also has a **crowding-in effect** wherein, when new models are workable and successful, other commercial players also start providing funding in the space independently using similar models. Over a period, this leads to an **increase in the total capital deployed** in the target areas.

#### Blended finance and India's healthcare

India's healthcare sector has **grown rapidly** over the last five years (Compound Annual Growth Rate of 22%), COVID-19 has brought to the forefront **persistent challenges** such as a weak health system, lack of quality infrastructure, and lack of quality service delivery to vulnerable populations.

- **Two indicators** can determine the blended finance prototypes: one, to measure the country's health system status (build, strengthen & transition), and the other to gauge investment attractiveness given the country's fiscal and economic situation.
- In comparison, countries in the **transition phase** with more established health systems and greater participation from private sector investors could **explore more intricate instruments** like impact bonds, debt-buy downs, and impact funds.

#### Sustainable Access to Markets and Resources for Innovative Delivery of Healthcare (SAMRIDH)

- India's existing healthcare ecosystem is coping with those challenges, Limited access to appropriate capital, less incentives to adopt innovative practices. Lack of market intelligence and network and so on.
- SAMRIDH Healthcare Blended Finance Facility aims to catalyze innovative financing mechanisms to improve healthcare services for India's most vulnerable populations.
- Through this initiative, SAMRIDH combines commercial capital with public and philanthropic funds to mitigate barriers to private investment in healthcare. The approach aims to drive greater resources towards market-based health solutions to improve access to affordable and quality healthcare services for India's most vulnerable.

## RBI INTRODUCED UPI LITE

### News Excerpt

Shaktikanta Das, governor of the Reserve Bank of India (RBI), introduced UPI Lite on 20 September 2022, to speed up and simplify low-value UPI payments. Users will be able to conduct real-time small-value payments up to Rs 200 using UPI Lite, an on-device wallet function, without entering a UPI PIN.

### What is UPI

1. The term "Unified Payment Interface" (UPI) refers to a smartphone application that enables users to transfer money between bank accounts.
2. It is a mobile payment system created by the National Payments Corporation of India.



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3. Customers are no longer required to initiate transactions by divulging private information like bank account numbers or other financial details.mission for their infrastructure projects.

**How UPI lite works**

1. You can access UPI LITE and complete UPI LITE transactions by logging into the app you downloaded on your phone and providing the necessary information for the device's biometric or pattern validation.
2. UPI LITE does not require a separate authorization or UPI PIN to complete a transaction. A 75-week countdown to our 75th anniversary of independence and will end post a year on 15th August 2023.

**Key Facts**

- To decrease cash-based transactions in India, the RBI introduced UPI. For a sizable percentage of the population who lacked smartphones, UPI was unavailable.
- The RBI introduced UPI123Pay to solve this issue. Customers will be able to use their feature phones for almost all transactions using UPI123Pay, with the exception of scan and pay

**What is UPI Lite?**

- UPI Lite is an **"on-device wallet"**. To use UPI Lite, users must first contribute money to the app's wallet from their bank accounts.
- Users can make **real-time payments without the Internet** because **it is an "on-device wallet**."
- In **phase one**, UPI Lite will process transactions in **near offline mode, i.e., debit (payments) can be made without Internet connection** and **credits into the account will be done online.**
- However, there is **a plan to make UPI Lite offline in the future** where customers can process transactions — both debit and credit — in complete offline mode.
- The **maximum amount that can be transferred via UPI LITE is Rs. 200**, and the **maximum amount that can be in your UPI LITE balance at any given moment is Rs. 2000**, or any additional limits that may occasionally **be set by NPCI**

## BHARAT BILL PAYMENT SYSTEM

**News Excerpt**

It is an integrated bill payment system or a platform which acts as connect between various billers and users. The Bharat Bill Payment System offers customers the convenience of payment by cataloguing various utility providers under one platform. It acts as a central reference for a customer who wants to make different payments — whether utility bills, loan repayments, FasTag recharge, and so on.

**Key Facts**

- BBPS was **conceptualized** by the **Reserve Bank of India in 2013** and is a **product of the National Payments Council of India (NPCI).**
- It was **piloted** in **2016** and went **live a year later**; By 2019 BBPS on boarded all recurring payments.
- There are **two key components** in the BBPS system — **Bharat Bill Payment Central Unit (BBPCU**) and **Bharat Bill Payment Operating Units (BBPOUs**).
- The BBPCU is NPCI, which lays downs the operating procedures and standards for BBPS. BBPOUs adhere to the rules set by BBPCU.
- They are the banking and non-banking entities that handle the payments load. Then, there are billers (utility providers) and agents, either as institutions or individuals, who provide services primarily on the collection side, to BBPOUs.

**What purpose does it serve?**

- Convenience and access irrespective of the nature and form of payment; For instance, as a customer you may have certain utilities such as phone, electricity, gas, and water bills to pay on a monthly basis.
- Under BBPS, all these utilities are listed in a single website. You must choose the payments to make and that will take you to the vendor website for the processing. You don't have to go to each website separately to make the payment.
- Likewise, BBPS is payment mode agnostic. It supports IMPS**, NEFT, and UPI, cheque, wallets and even cash.**



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- But note that BBPS is only a platform. If a transaction has settlement duration of T+1 or T+2, as with UPI or cheque payments, **BBPS cannot bypass the time taken for payment processing**. It has only facilities in making and concluding a payment in a common platform.

# Primary Sector

## Digitisation of Primary Agricultural Credit Societies

### News Excerpt

**The Cabinet Committee on Economic Affairs (CCEA)** approved a proposal to **digitize around 63,000 Primary Agricultural Credit Societies (PACS)**.

**PACS are the smallest unit** in the cooperative sector and PACS will be digitized at a cost of ₹2,516 crore, which will benefit about 13 crore small and marginal farmers.

Each PACS will get around ₹**4 lakh to upgrade** its capacity and even old accounting records will be digitized and linked to a cloud-based software

### Key Facts

### About the Programme

- The first Primary Agricultural Credit Society (PACS) was formed in the year 1904.
- The Primary Agricultural Credit Societies are **the association of persons**, unlike in the case of the Joint Stock Companies, where there is an association of capital.
- Association of persons in Primary Agricultural Credit Societies confers an **equal level of rights** on all of society members **without considering their holding of share** and **their social standing**.
- The Primary Agricultural Cooperative credit societies (PACS) constitute the lowest tier of the three-tier short-term cooperative credit (STCC) in the country comprising of around 13 crore farmers as its members, which is crucial for the development of the rural economy. PACS are registered under the Co-operative Societies Act and also regulated by the RBI.
- The other two tiers viz. State Cooperative Banks (StCBs) and District Central Cooperative Banks (DCCBs) **have already been automated by the NABARD and brought on Common Banking Software (CBS).** However, majority of PACS have so far been not computerized and still functioning manually resulting in inefficiency and trust deficit. In some of the states, stand-alone and partial computerization of PACS has been done. **There is no uniformity in the software being used by them and they are not interconnected with the DCCBs and StCBs**.

# Secondary Sector

## SCHEMES TO STRENGTHEN MSMES

### News Excerpt

The government on 21 July 2022 launched **three schemes** which envisage **technology upgradation, setting up of common research centres and effluent treatment plants in clusters for the pharma MSMEs.**

### Key Facts

- The **chemicals and fertilisers ministry** rolled out the schemes under the **banner of 'Strengthening Pharmaceuticals Industry' (SPI).**
- The schemes provide for credit linked capital and interest subsidy for technology upgradation of MSME units in pharmaceutical sector, as well as support of up to Rs 20 crore each for common facilities, including research centre, testing labs and ETPs, in pharma clusters.
- **SIDBI will be the project management consultant** for implementing the scheme.
- The Pharmaceutical Technology Upgradation Assistance Scheme (PTUAS) would facilitate pharmaceutical MSMEs with proven track record to upgrade their technology.
- The scheme has provisions for a capital subsidy of 10 per cent on loans up to a maximum limit of Rs 10 crore with a minimum repayment period of three years or interest subvention of up to 5 per cent (6 per cent in case of units owned by SC/ST) on reducing balance basis.



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- Similarly, Assistance to Pharma Industries for Common Facilities Scheme (API-CF) would strengthen the existing pharmaceutical clusters' capacity for sustained growth.
- It provides for an assistance of up to 70 per cent of the approved project cost or Rs 20 crore, whichever is less.
- In case of Himalayan and north-east region, the grant-in-aid would be Rs 20 crore per cluster or 90 per cent of the project cost, whichever is less.
- **Pharmaceutical and Medical Devices Promotion and Development Scheme (PMPDS) would involve preparation of study** reports on topics of importance for the Indian pharma and medical device industry. The scheme is aimed at **creating a database of pharma and medical device sectors.**

## NATIONAL LOGISTICS POLICY LAUNCHED

### News Excerpt

The Prime Minister on 17 September 2022 launched the National Logistics Policy (NLP). It aimed at promoting **seamless movement of goods and enhancing the competitiveness** of the industry. It is expected to focus on areas such **as process re-engineering, digitisation, and multi-modal transport**.

Flashback

1. The Central government has been working on the National Logistics Policy for three years. The commerce ministry released a draft logistics policy for consultation in 2019, but it was delayed by the Covid-19 pandemic.
2. The National Logistics Policy was once again announced by Finance Minister Nirmala Sitharaman in the Budget for 2022-23.
3. The government is using technology to strengthen the logistics sector. Faceless assessment has started in customs and e-way bills and FASTag are bringing efficiency in the logistics sector.
4. Sagarmala project to connect ports and dedicated freight corridors have started to improve logistics connectivity and systematic infrastructure development work.

### Key Facts

- The policy seeks to support faster growth after two pandemic-ridden years. It will streamline rules and address supply-side constraints, besides providing a roadmap to reduce fuel costs and lower logistics costs. The draft policy provides for the government **creating a single point of reference** for all logistics and trade facilitation matters, **reducing costs for the logistics sector to 10 per cent** in **five years**. The logistics sector is estimated at 13-14 per cent of GDP.
- The policy is an Endeavour to improve the competitiveness of Indian goods, enhancing economic growth and increasing employment opportunities.
- A **unified logistics interface platform (ULIP)** will be developed as part of the national logistics policy to help different government and private agencies; shippers, service providers enable information exchange on a real time basis in a confidential manner.
- The other interventions proposed include **Standardisation of physical assets and benchmarking service quality standards**; **Logistics Human Resources Development and Capacity Building; state engagement; export-import logistics; Service Improvement framework; Sectoral Plan for Efficient Logistics; and Facilitation of Development of Logistics Parks**.

LOGISTICS PERFORMANCE INDEX 2022

- **Andhra Pradesh, Assam and Gujarat** are among the 15 states and UTs categorized as **achievers** in the logistics index chart 2022, a report released by the **commerce and Industry Ministry**.
- The index is an **indicator of the efficiency of logistical services** necessary for **promoting exports and economic growth**.
- Kerala, Madhya Pradesh, Rajasthan, Puducherry, Sikkim and Tripura are the other states categorised as fast movers in the ranking.
- The **15 states and UTs ranked in the aspirers category include Bihar, Chhattisgarh, Goa** and Mizoram.
- The report ranks the states on the basis of their logistics ecosystem, highlights the key logistics-related challenges faced by the stakeholders and includes suggestive recommendations, according to the **fourth LEADS (Logistics Ease across Different States) 2022 report** unveiled by the Commerce and Industry Minister Piyush Goyal.
- The index aims at enhancing the focus on improving logistics performance across states which is essential for improving the country's trade and reducing transaction cost.
- The first logistics report was released in 2018.

No ranking was released last year due to the COVID-19 pandemic. Gujarat was at the first position in both 2018 and 2019 ranking lists.



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- **NICDC's (National Industrial Corridor Development Corporation) Logistics Data Bank Project** has been leveraged to develop ULIP.

## RAISING & ACCELERATING MSME PERFORMANCE' SCHEME INAUGURATED

### News Excerpt

Prime Minister on 30 June 2022 inaugurated the '**Raising and Accelerating MSME Performance**' scheme at **Vigyan Bhawan** in the national capital. The scheme has outlay of around Rs 6,000 crore. The scheme aims to scale up the implementation capacity and coverage of Medium Small and Micro Enterprises (MSME) in the states, **with impact enhancement of existing MSME schemes**.

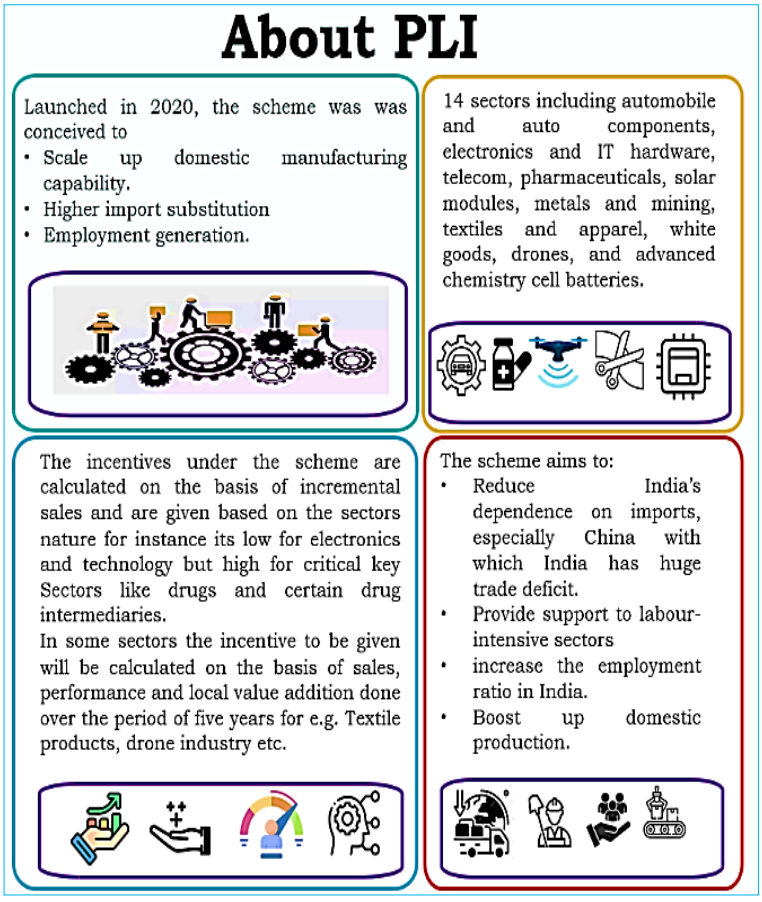
### Key Facts

- It will **complement the Aatmanirbhar Bharat Abhiyan** by fostering innovation, encouraging ideation, incubating new business and entrepreneurship by developing quality standards, improving practices and processes, enhancing market access, deploying technological tools and Industry 4.0 to make MSMEs competitive and self-reliant.
- Along with the RAMP scheme, PM Narendra Modi also inaugurated the '**Capacity Building of First-Time MSME Exporters' scheme** and **new features of the 'Prime Minister's Employment Generation Program' (PMEG).**
- 'Prime Minister's Employment Generation Program 'include an increase in the maximum project cost to Rs 50 lakh (from Rs 25 lakh) for the manufacturing sector and Rs 20 lakh (from Rs 10 lakh) in the service sector and the inclusion of applicants from aspirational districts and transgender in the Special Category applicants for availing higher subsidies.
- The Prime Minister also digitally transferred assistance to beneficiaries of PMEGP for 2022-23.
- 'Udyami Bharat' is reflective of the continuous commitment of the government, right from day one, to work towards the empowerment of MSMEs.

## PLI and Indian Economic Growth

### News Excerpt

Recently, NITI Aayog has asserted that the **Production Linked Incentive scheme (PLI)** had attracted investment worth over Rs 45,000 crore and has also created three lakh jobs. The data shows the positive contribution of PLI to Indian economic growth.




### Key Facts

### Why PLI?

- History shows that nearly all the countries that have transitioned from low to high per capita income have managed this shift on the back of manufacturing and export-led growth. However, Indian manufacturing has suffered from its inability to scale up.
- Studies have shown that every job created in the manufacturing sector has a **multiplier effect in creating 2 to 3 jobs in the service sector.**
- For India to become a USD-5 trillion economy, its manufacturing sector has to sustainably grow in double digits. This can only become a reality when Indian manufacturing companies become an integral part of global supply chains and build a strong manufacturing base, with global champions capable of producing for the world.



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- They need to focus on cutting-edge technology sectors, along with sectors of its core competency and high employment generation potential. Therefore, with the onset of the pandemic, the government of India gave the clarion call for an ***"Atamanirbhar Bharat"*** to turn ***adversity into opportunity*** by launching Production Linked Incentive (PLI) scheme.

# Service Sector

## Open Network for Digital Commerce

### News Excerpt

Commerce and industry minister talked about the massive role to be played by **ONDC in democratise e-commerce.**

### Key Facts

- Open Network for Digital Commerce (ONDC) is a **network based on open protocol** and will enable local commerce across segments, such as mobility, grocery, food order and delivery, hotel booking and travel, among others, to be discovered and engaged by any network-enabled application.
- The platform aims to **create new opportunities, curb digital monopolies and by supporting micro, small and medium enterprises and small traders and help them get on online platforms**.
- **It is an initiative of the Department for Promotion of Industry and Internal Trade (DPIIT) under the Ministry of Commerce and Industry.**
- Presently, ONDC is in its pilot stage and the government has set up a nine-member advisory council, on measures needed to design and accelerate the adoption of ONDC.
- ONDC has been rolled out in 5 cities – **Delhi NCR, Bengaluru, Bhopal, Shillong, and Coimbatore.**
- The operations are presently **focused on retail and restaurants and facilitating real-time transactions. The open network will later-on extend to other categories like travel and mobility.**
- Based on the pilot exercise and after the network stabilizes, ONDC will be expanded to 100 cities and towns across India by October 2022. The goal is to accommodate 30 million sellers and 10 million merchants online.

**Open-Source Software**

- Open source software is software with source code that anyone can inspect, modify, and enhance.
- "Source code" is the part of software that most computer users don't ever see; it's the code computer programmers can manipulate to change how a piece of software—a "program" or "application"—works. Programmers who have access to a computer program's source code can improve that program by adding features to it or fixing parts that don't always work correctly.
- For example, while the operating system of Apple's iPhones (iOS) is closed source, Google's Android operating system is open-source, and therefore it is possible by smartphone manufacturers to modify it for their hardware.

### Features of ONDC

- ONDC, a **UPI of e-commerce,** seeks to **democratise digital or electronic commerce,** moving it from a **platform-centric model to an open-network**. Through ONDC, merchants will be able to save their data to build credit history and reach consumers.
- The proposed government-backed platform aims to create a level playing field for e-commerce behemoths such as Amazon, Flipkart, and offline traders who have been crying foul at the unfair trade practices of these e-tailers. **The platform will also be compliant with the Information Technology Act, 2000 and designed for compliance with the emerging Personal Data Protection Bill.**
- **In this system, ONDC plans to enable sellers and buyers to be digitally visible and transact through an open network, regardless of what platform or application they use. It will also empower merchants and consumers by breaking silos to form a single network to drive innovation and scale, transforming all businesses from retail goods, food to mobility.**
- The new framework aims at promoting open networks developed on open-sourced methodology, using open specifications and open network protocols independent of any specific platform.

### Significance

- The e-commerce market in India is expected to touch $5.5 billion in market size by 2025, up from $700 million now. ONDC has the potential to break barriers and empower customers. The present e-commerce platforms are



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restrictive and favour products of the platform developers' choice. Through ONDC, MSMEs and start-ups can harness opportunities provided by digital advancement, in connecting with their customers.

- ✓ Open Network for Digital Commerce (ONDC) will enable customers to engage with sellers of their choice seamlessly.
- ✓ It is expected to digitise the entire value chain, standardise operations, promote inclusion of suppliers, derive efficiencies in logistics and enhance value for consumers.

## Moonlighting

### News Excerpt

- Moonlighting — or employees working for remuneration with entities other than their employers — has been a hot topic recently.
- Recently, Information technology giant Infosys sacked 300 employees following the discovery that they were working for rival firms on the side, leading to conflict of interest. Infosys has warned staff against moonlighting, saying it could lead to termination.

### Key Facts

- Moonlighting means taking up a second job or multiple other work assignments apart from one's full-time job. Several companies have opposed the practice, saying that employees doing multiple jobs can impact their productivity

### Does Any Law Prevent Dual Employment?

- Moonlighting **is not defined under any statute in Indian employment laws**. Moonlighting is also not necessarily dual employment, which is a formal employer-employee relationship, complete with legal obligations like minimum wage, provident fund, gratuity etc. It could also be side hustles or freelancing which can be with or without the knowledge of the primary employer.
- Swiggy earlier announced an **"industry first" policy** that allowed moonlighting for its employees.
- Moonlighting could be considered cheating if an employee's contract calls for non-compete and single employment, which is the situation with the majority of conventional employment contracts. However, it is not cheating if the employment contracts do not have such a clause or provide relaxations.
- The Courts of law in India dealing with employment are Writ Courts and Labour Courts, which exercise jurisdiction based on equity or fairness. Therefore, the Courts may lean in favour of the employee unless the contravention of the employee has led to serious prejudice and loss to the employer.

## Taxing Online Gaming

### News excerpt

The online gaming industry is generating $20 billion in revenue and entertaining 200 million people. It is expected to reach $25 billion by 2030 per year it is growing exponentially. The government is planning to levy a GST of 28% but it has been deferred in the recent GST Council meeting.

### Key Facts

#### India's Gaming Ecosystem

- The revenue of the Indian mobile gaming industry is expected to exceed $1.5 billion in 2022 and is estimated to reach $5 billion in 2025.
- India's percentage of new paying users (NPUs) in gaming has been the fastest-growing in the world for two consecutive years. NPUs grew at 40% in 2020 and reached 50% in 2021.

#### What gaming includes in India?

**India mainly puts the games into two broad categories to differentiate them.**

- ❖ **Game of chance (Gambling):** Games of chance are all those games that are played randomly, which are based on luck. A person can play these games without prior knowledge or understanding. For instance, dice games, picking a number, etc. Such games are considered **illegal** in India.
- ❖ **Game of skill (Gaming):** Games of skill are all those games that are played based on a person's prior knowledge or experience of the game. A person will require skills such as analytical decision-making, logical thinking, capability, etc. Some games might also require some initial training to win. Such games are considered **legal** by most of the Indian states.



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### Taxes structure on online game

- The online gaming industry pays **18% GST on its revenues** or platform fee intake (known as 'gross gaming revenue' or GGR) for providing users with a platform to play.
- This fee happens to be roughly 15% of the overall prize pool in any contest.
- It means **GST is about 2.7% of the overall prize pool** and if 28% GST is levied on the overall prize pool as suggested by some policymakers, it would result in a **1,000% increase** in the effective tax burden.

### Challenges in Taxation

- The online gaming industry within India **lacks regulatory oversight** and it falls into a **'grey area'**.
- India currently has no comprehensive legislation concerning the legality of online gaming that specifies **applicable tax rates within the betting and gambling industry**.
- Online gaming in India is **allowed in most states**. However, different states have their legislation
- The online gaming sector is one of the sunrise industries – which has been built to meet the roadmap of Atmanirbhar Bharat. Currently, the industry employs over 50,000 people, it is expected to create one lakh new direct and indirect jobs by the end of FY23. However, all this could hit the wall due to steep taxation.
  - One of the looming fear is that taxation could push consumers towards more lucrative options such as offshore betting and gambling websites.

# Reports and Ranking

## INDIA CLIMBS SIX NOTCHES IN GII 2022

**India** climbed six notches to **40th position** in the **Global Innovation Index (GII) 2022** on account of improvement in several parameters. It said that India's innovation performance **is above average** for the **upper middle-income group** in **almost every innovation pillar**, with **the exception of infrastructure, where it scores below average.**

### Key Facts

- Ranking is based on **two sub-indices**, Innovation Input Sub-Index and Innovation Output Sub Index.
- Turkiye and India enter the top 40 for the first time, placed 37th and 40th, respectively.
- India overtakes Vietnam (48th) as the top lower middle-income economy for innovation.
- In the middle-income economies China, Turkiye and India continue to change the innovation landscape; others like the Islamic Republic of Iran and Indonesia show promising potential.
- In the rankings, the top position was occupied by Switzerland. It was followed by the US, Sweden, the UK and the Netherlands. China was placed in the 11th position

**GII 2022 puts its hopes in two novel innovation waves:**

1. Digital Age innovation wave built on supercomputing, artificial intelligence and automation that is on the verge of making ample productivity impacts across all sectors – including services – and helping to achieve scientific breakthroughs in basic sciences of all fields.
2. Deep Science innovation wave built on breakthroughs in biotechnologies, nanotechnologies, new materials and other sciences that are revolutionizing innovations in four fields of key importance to society: health, food, environment, and mobility.

## World Competitive Index

### News Excerpt

India has witnessed the sharpest rise among the Asian economies, with a six-position jump from 43rd to 37th rank on the annual World Competitiveness Index compiled by the Institute for Management Development, largely due to gains in economic performance.

### Key Facts

- After a stable but stagnant five years, 2022 witnessed significant improvement in the competitiveness of the Indian economy this is largely due to gains in economic performance (from 37th to 28th).
- The domestic economy has experienced a stratospheric rise from 30th to 9th position in a year.
- The labour market, a key sub-factor in the business efficiency parameter, moved up from 15th to 6th, while management practices and business attitudes and values also made major leaps.



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- India is also a driving force in the global movement to fight climate change and PM's pledge of net-zero by 2070 at the COP26 summit in November 2021, sits in harmony with its strength in environment-related technologies in the ranking.
- The challenges that India faces include managing trade disruptions and energy security, maintaining high GDP growth post the pandemic, skill development and employment generation, asset monetisation and resource mobilisation for infrastructure development.
- The top five attractive factors of India's economy for business are - a skilled workforce, cost competitiveness, dynamism of the economy, high educational level and open and positive attitudes.
- The three most important trends found to be impacting businesses in 2022 are inflationary pressures (50 per cent), geopolitical conflicts (49 per cent) and supply chain bottlenecks (48 per cent) with COVID being the fourth (43 per cent).
- IMD business school in Switzerland and Singapore released the 2022 World Competitiveness Ranking.
- Its think-tank, IMD World Competitiveness Center, ranks 63 economies and assesses the extent to which a country promotes the prosperity of its people by measuring economic well-being via hard data and survey responses from executives.
- Denmark has moved to the top of the 63-nation list from the third position last year, while Switzerland slipped from the top ranking to the second position and Singapore regained the third spot from fifth, a global study showed on 15 June 2022.
- Others in the top 10 include Sweden at the fourth position, followed by Hong Kong SAR (5th), the Netherlands (6th), Taiwan (7th), Finland (8th), Norway (9th) and the USA (10th).
- The top-performing Asian economies are Singapore (3rd), Hong Kong (5th), Taiwan (7th), China (17th) and Australia (19th).

## Startup Ranking 2021

### News Excerpt

The results of the third edition of Ranking of States on Support to Start-ups Ecosystems were released recently by **Department for Promotion of Industry and Internal Trade (DPIIT)**.

### Key Facts

- The Department for Promotion of Industry and Internal Trade (DPIIT) has been conducting the States Start-up Ranking Exercise since 2018 to facilitate the ease of building a start-up and doing business across the country.
- The exercise has grown in its impact over the last three editions, with 31 participating states and union territories this edition, the highest till date. The State Start-up Ranking Exercise aims to support states and union territories in developing their start-up ecosystem and learn from the best practices in each state and union territory.
- For the purposes of the Ranking, States and Union Territories are classified into 5 Categories, viz. Best Performers, Top Performers, Leaders, Aspiring Leaders and Emerging Start-up Ecosystems.
- The rankings were accompanied by the release of the National Report which highlights the vision, framework, evolution across the years, methodology and implementation, and the way ahead for the States` Start-ups Ranking. A State Specific Report for each of the 31 participating States and Union Territories has also been released, containing an extensive analysis of respective ecosystem, which highlights strengths and priority areas for future.
- Gujarat and Karnataka emerged as the Best Performers in a category of States which included NCT of Delhi. Meghalaya won the top honor among UTs and North-eastern (NE) States. While Kerala, Maharashtra, Orissa and Telangana got the Top Performers award among states, Jammu &Kashmir emerged as the Top Performer among UTs and NE states.
- Assam, Punjab, Tamil Nādu, Uttarakhand and Uttar Pradesh were adjudged the winners in the Leaders category among states; Andaman &Nicobar Islands, Arunachal Pradesh and Goa bagged the Leaders honour among the UTs and NE states.
- Chhattisgarh, Delhi, Madhya Pradesh and Rajasthan were declared as Aspiring Leaders among the States. Chandigarh, Dadra and Nagar Haveli &Daman and Diu, Himachal Pradesh, Manipur, Nagaland, Puducherry and Tripura were the Aspiring Leaders from the UTs and NE states.



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- Andhra Pradesh and Bihar from States category and Mizoram and Ladakh from the UTs/NE States were clubbed under the Emerging Start-up Ecosystem.

## Financial Inclusion Index

**News Excerpt**

According to RBI, India's financial inclusion index for the year ending March 31, 2022 **improved** to 56.4 from 53.9 in the previous year, with **growth seen across all its sub-indices**. This shows **rapid improvement in the reach of financial services** over **the past five years**

**Key Facts**

- Reserve Bank of India (RBI) launched a Financial Inclusion Index (FI-Index) to track the process of ensuring access to financial services, and timely and adequate credit for vulnerable groups such as weaker sections and low-income groups at an affordable cost.
- The Fi-Index is a comprehensive index, incorporating details of banking, investment, insurance, postal, as well as the pension sector in consultation with government and respective sector regulators.
- Parameters of FI-Index:
    - Access (35 percent)
    - Usage (45 percent)
    - Quality (20 percent)
- A unique feature of the Index is the Quality parameter, which captures the quality aspect of financial inclusion as reflected by financial literacy, consumer protection, and inequalities and deficiencies in services.
- The FI-Index has been constructed without any 'base year' and as such it reflects cumulative efforts of all stakeholders over the years towards financial inclusion.
- The Reserve Bank of India (RBI) released the National Strategy for Financial Inclusion 2019-2024.
- It sets forth the vision and objectives of financial inclusion policies in India.
- The strategy was prepared by the RBI with inputs from:
    - The central government and
    - Financial sector regulators (Securities and Exchange Board of India, Insurance Regulatory and Development Authority of India and Pension Fund Regulatory and Development Authority of India).

## Kirit Parekh Panel

**About:** A committee has been formed by the Government to **review the prices of gas produced in India.**

- The Committee will be responsible for recommending price caps for natural gas produced from legacy fields of State-owned firms.
- The committee had recommended
    - For the old fields of Oil and Natural Gas Corporation (ONGC) and Oil India Ltd (OIL). It has recommended a floor or minimum base price and cap or ceiling rates. This will ensure that the price does not fall below the cost of production.

For the gas from difficult fields such as those lying in deep-sea or which are in high-pressure, high-temperature zones, and the committee has suggested not tinkering with the existing mechanism of paying them higher rates based on a different formula to compensate for the greater risk and cost involved. This would ensure that explorers, who are seeing a rise in the cost of services due to the spike in global energy rates, are not put to any disadvantage.

## WORLD ECONOMIC FORUM'S 2023 EVENT ENDS

**News Excerpt**

The World Economic Forum's Annual Meeting 2023, held in the Swiss town of **Davos**, and ended 20 January 2023. The **theme** this year was **'Cooperation in a Fragmented World'.**

**Key Facts**

**Key takeaways from WEF Davos 2023**

- **On the economy**



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- Most business leaders were upbeat about the economy, with US and the European Union (EU) seemingly beyond the risk of a recession now.
- China ending its zero Covid curbs and opening shop again added to the positive outlook.
- However, central banks of the major economies cautioned that concerns still remained, and said they would keep interest rates high to ensure inflation is under check.
- The **richer nations look to focus inwards, protecting their own workers, energy sufficiency, supply lines, etc.,** concerns were raised that this policy direction would hit developing economies.

- **On Ukraine**
  - Ukraine kept up its demand for more military aid to fight its war against Russia, and more financial aid to rebuild after the war, saying the reconstruction fund commitments should start coming in now and not after the war ends.
  - In his address, Zelenskyy made an indirect criticism of the US and Germany dithering over sending tanks to his country.
- **On Climate**
  - **Everyone** agreed upon the **need for green energy and the need for more money to flight climate change**. The World Economic Forum, supported by more than 45 partners launched the Giving to Amplify Earth Action (GAEA), a global initiative to fund and grow new and existing public, private and philanthropic partnerships (PPPPs) to help unlock the $3 trillion of financing needed each year to reach net zero, reverse nature loss and restore biodiversity by 2050.
  - Greta Thunberg and other activists organised a protest, with slogans such as "There is no planet B" and "Fossil fuels have got to go". Pakistan brought up the issue of a loss and damage fund for the developing countries.
- **Projects launched**
  - The Press Trust of India (PTI) reported that **more than 50 "high-impact initiatives**" was launched at the event.
  - Maharashtra Institution for Transformation (MITRA) signed a partnership with the forum on urban transformation to give the state government "strategic and technical direction", while a thematic centre on healthcare and life sciences is to be set up in Telangana.
  - The Coalition for Epidemic Preparedness and Innovations (CEPI) aims to develop new vaccines for future pandemics.

## RBI Report on State Government Budget

### News Excerpt

The Reserve Bank of India released its report on state government budgets for 2022-23. The report outlines how state government finances, which had come under severe stress in 2020-21 because of the **slowdown in the economy due to the pandemic**, have **improved** in the years thereafter. However, there are several areas of concern.

### Key Facts

- **Revenue Deficit**
  - Revenue Deficit denotes the difference between revenue receipts and revenue expenditure.
  - Revenue Account Gap = Revenue Deficit = Revenue Receipts – Revenue Expenditure
- **Capital Deficit**
  - Capital Deficit denotes the difference between capital receipts and capital disbursements. Capital Account Gap = Capital Account Deficit = Capital Receipts – Capital Disbursements
- **Gross Fiscal Deficit**
  - The gross fiscal deficit (GFD) is the excess of total expenditure including loans net of recovery over revenue receipts (including external grants) and non-debt capital receipts.
- **Gross Primary Deficit**
  - Gross Primary Deficit is defined as Gross Fiscal deficit minus interest payments.
  - Primary Deficit = Gross Fiscal deficit – Interest Payment

### The fiscal position of the states



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- **Debt-to-GDP:** The state debt-to-GDP ratio remains high. As per the report, the debt-to-GDP ratio has fallen from 31.1 percent in 2020-21 – a year when states had struggled to manage the economic fallout of the pandemic — to 29.5 percent in 2022-23.

| Revenue Budget | Basis | Capital Budget |
|---|---|---|
| Revenue budget includes:<br>(1) Revenue Receipt<br>(2) Revenue Expenditure | **Inclusion** | Capital budget includes:<br>Capital Receipt<br>Capital Expenditure |
| **(1) Revenue Receipt:** Government receipts that:<br>• Neither creates liabilities for the government nor cause any reduction in assets of the government are called revenue receipts.<br>**(2) Revenue Expenditure:** An expenditure that:<br>• Neither creates any assets nor causes any reduction of liability. | **Meaning of types** | **(1) Capital Receipt:** Government receipts that:<br>• Either creates liabilities (of payment of loan) or reduce assets (on disinvestment) are called capital receipts.<br>**(2) Capital Expenditure:** Capital expenditure that:<br>• Either creates assets for the government or causes reduction in liabilities of the government. |
| **Examples of revenue receipt are** income tax, gift tax, sales tax, fees and penalties etc. **Examples of revenue expenditure are** old age pensions, salaries and scholarship, expenditure on the repayment of loan, defence, health etc. | **Examples** | **Examples of Capital receipt are** loans by the government, recovery of loans etc. **Examples of Capital expenditure,** Equity (or Shares) of the domestic or multinational corporations purchased by the government, repayment of loans reduces liability of the government. |

  - However, there is marked variation across states**. Punjab, Tamil Nadu, Haryana, and West Bengal have the highest interest payments to revenue receipts ratio**. This implies that in these states, interest payments account for a sizable portion of the state's revenues**, leaving them with less room to spend on other areas of priority such as health or education.**
  - The Fiscal Responsibility and Budget Management review committee, headed by **N K Singh, had recommended a debt-to-GDP ratio of 20 percent for states.**
- **Contingent liabilities:** Contingent liabilities here refer to the obligations of a state government to repay the principal and interest payments in case a state-owned entity defaults on a loan.
  - State governments have also seen a significant increase in their contingent liabilities: the guarantees issued by state governments have risen from Rs 3.12 lakh crore or 2 percent of GDP in 2017 to Rs 7.4 lakh crore or 3.7 percent of GDP. The states of Andhra Pradesh, Telangana, and Uttar Pradesh have the most guarantees outstanding at the end of March 2021.
  - The state of state-owned power distribution companies or discoms also has adverse implications for state finances.

## Capital Expenditure

- ✓ **Government capital expenditure**
  - Government capital expenditure refers to the outlay of government funds in the form of investments or development spending towards the creation of assets for the long term.
  - An example of capital expenditure could be the money spent on, say, Railways or building national highways and roads.
- ✓ **Position of capital expenditure of States**
  - Higher allocation to capex but actual spending needs to pick up: Capital expenditure by states recorded an impressive growth of 31.7 percent in 2021-22. Strong growth in revenue collections as well as



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enhanced transfers from the central government gave the states the required space to accelerate capital expenditure.
    - There are inter-state variations in capital spending. For instance, Uttar Pradesh, accounting for 21 percent of the total budgeted expenditure, made one of the highest allocations on capital spending made by states.
    - In contrast, Maharashtra has allocated only 14 percent of its total expenditure on capex.
    - However, the actual amount spent by the states is less; around 29 percent of the budgeted capital expenditure has been spent.
    - The government launched a scheme for special assistance to states for capital investment. Under this, an amount of Rs 1.07 lakh crore has been allocated and financial assistance is provided to states in the form of a 50-year interest-free loan for capital projects. However, still very less has been released to the eligible states under the scheme.

✓ **Importance of government capital expenditure**
    - The **impact multiplier effect of ₹1 spent on capital expenditure is as high as 2.45.**

## World Economic Outlook

### News Excerpt

The IMF has released its January update of the World Economic Outlook report, marginally improving the forecast for global growth in 2023.

### Key Facts

### World Economic Outlook report

- The **IMF** releases the **WEO twice every year**.
- It presents **IMF staff economists' analyses of global economic developments during the near and medium term**.

### Risks highlighted in the Report

The balance of risks to the global outlook remains tilted to the downside (lower growth and higher inflation), but adverse risks have been moderated.

➢ **Upside risks**: To provide lower-than-expected inflation and less monetary tightening.
    - Pent-up demand boost: Fuelled by the stock of excess private savings from the pandemic fiscal support, tight labour markets, and solid wage growth, there is scope for a further boost to consumption.

➢ **Downside risks**: To provide lower growth while adding further to inflation.
    - China's recovery stalling: Spill over to the rest of the world would operate through lower demand and supply chain problems.
    - War in Ukraine escalating: This will impact food and fuel prices; further social unrest may increase.
    - Debt distress: The combination of high debt levels from the pandemic, lower growth, and higher borrowing costs exacerbates the vulnerability of economies.
    - Persistent Inflation: Due to persistent labour market tightness translating into stronger-than-expected wage growth, higher-than-expected oil, gas, and food prices from the war in Ukraine, and a faster rebound in China's growth.
    - Sudden financial market repricing: Unfavourable inflation data releases could trigger a sudden repricing of assets and increase volatility in financial markets.
    - Geopolitical fragmentation: Due to the war in Ukraine, international sanctions on Russia splitting the world economy into blocs, and earlier geopolitical tensions such as the US-China trade dispute.



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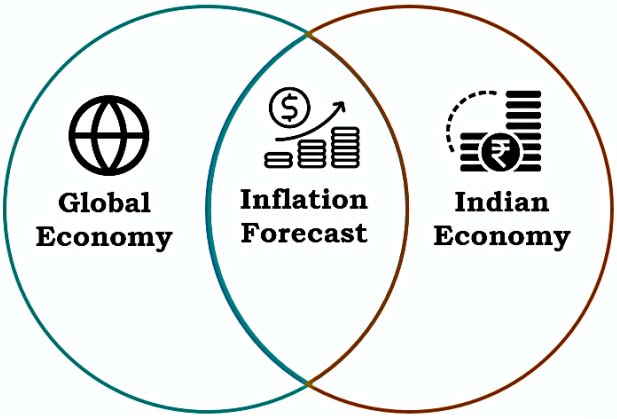
# WEO Forecasts

IMF projected global economic growth to fall to 2.9% in 2023 and it is poised to rise to 3.1% in 2024. Despite the slowdown, it didn't call for any global recession. For advanced economies, growth is projected to decline in 2023; whereas for emerging market and developing economies, growth is projected to rise modestly.




India will continue to be the world's fastest-growing major economy in 2023 and 2024 even with growth declining from 6.8% in 2022 to 6.1% in 2023. However, with the resilient domestic demand, growth will rise to 6.8% in 2024, higher than all its comparable economies

Reports suggest that global inflation will cool down to 4.3 percent by 2024, however, it will still be above pre-pandemic levels. This decline is attributed to a decline in international fuel prices, weaker global demand, and cooling effects of monetary policy.. Advance economies will see a faster decline in inflation vis-à-vis emerging markets and developing economies (EMDEs), as far as the low-income developing countries are concerned, they will reach near the pre-pandemic level.

## RBI ANNOUNCES 2ND GLOBAL HACKATHON

### News Excerpt

The Reserve Bank on 14 February 2023 announced its second global hackathon -- **'HARBINGER 2023 - Innovation for Transformation'** with the **theme 'Inclusive Digital Services'**.

**Fintechs** have been **invited** to develop solutions that have the potential to make digital financial services **accessible to the differently-abled, facilitate efficient compliance, extend the reach of Central Bank Digital Currencies and enhance the scalability of block chains.**

### Key Facts

Being part of HARBINGER 2023 gives an opportunity to the participants to get mentored by industry experts and exhibit their innovative solutions before an eminent jury and win exciting prizes in each category

The RBI has invited innovative ideas in **four segments**.

a) Innovative, easy-to-use, digital banking services for differently-abled (Divyaang)

b) RegTech solutions to facilitate more efficient compliance by Regulated Entities (REs)

c) Exploring use cases/solutions for CBDC-Retail transactions, including transactions in offline mode d) Increasing Transactions Per Second (TPS)/ throughput and scalability of block chains'

**Flashback**

1. The first hackathon was announced in November 2021 and results were declared in June 2022.
2. It had received 363 proposals submitted by teams from within India and from 22 other countries including the US, UK, Sweden, Singapore, Philippines, and Israel.

# Fiscal Policy (Taxation)

## Windfall Tax

### News Excerpt

**Finance Ministry** defended the windfall tax **imposed by the Centre** on **domestic crude oil producers,** saying that it was not an ad hoc move but was done after full consultation with the industry.



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### Key Facts

- A windfall tax is a tax levied by governments **against certain industries** when economic conditions allow **those industries to experience above-average profits**.
- Windfall taxes are primarily levied on companies in the **targeted industry** that have benefited **the most from the economic windfall, most often commodity-based businesses**.
- **The purpose is to redistribute excess profits** in one area for the greater social good; however, this can be a contentious ideal.
- **India announced a windfall tax on domestic crude oil producers** who it believed were reaping the benefits of the high oil prices.
- **Some individual taxes, such as inheritance tax or taxes on lottery or game show winnings**, can also be construed as a windfall tax...

### IMF guidelines on windfall tax

The International Monetary Fund (IMF) has published a note (report) on Taxing Windfall Profits in the Energy Sector, including recommended guidelines for countries to follow when considering the introduction of a windfall profits tax.

- Introduce a **permanent tax on windfall profits from fossil fuel extraction**, **if an adequate fiscal instrument is not already in place**. The tax should be imposed on a share of economic rents (that is, excess profits) because rent-targeting taxes raise revenue without reducing investment or increasing inflation.
- Use caution when it comes to temporary taxes on windfall profits: These tend to increase investor risk, may be more distortionary (especially if poorly designed or timed), and do not provide revenue benefits above those of a permanent tax on economic rents. Investors prefer a stable, predictable tax regime over the risk of future temporary taxes when prices rise.
- **Encourage the switch to renewable energy**, given the need for decarburizations in energy generation. It is **counterintuitive to introduce exceptional taxes on renewable energy-based electricity generation**, especially if these are poorly designed. Such taxes may deter future investment by increasing investor perception of risk.
- Still, apply the following design principles if political pressure makes it necessary to tax windfall profits from electricity generation:
  - The tax should apply to a clear measure of excess profit (for example, profit above a specified return on capital) that avoids arbitrary references to specific price levels or time periods.
  - The tax should not apply to revenue (as this can be inflationary and is more likely to reduce investment).
  - The tax should allow for carrying forward of losses to ensure symmetrical treatment of losses and profits. The tax can be permanent if excess profits are expected to be persistent.

Consider future reforms to market mechanisms that may unnecessarily result in windfall profits for electricity generators and fossil fuel refiners. For example, electricity generators may earn windfall profits because of the design of electricity tariffs or because market access is restricted.

## GLOBAL MINIMUM TAX

### News Excerpt

**The European Union**, under the guidance of the Organisation for Economic Cooperation and Development (**OECD**), **adopted a plan for a global minimum 15 percent tax on multinational businesses**. The landmark agreement between nearly 140 countries is intended to stop governments racing to cut taxes to lure the world's richest firms to their territory.

### Key Facts

- **Base Erosion and Profit Shifting** Firms make profits in one jurisdiction, and shift them• across borders by exploiting gaps and mismatches in tax rules, to take

**Tax Havens**

A tax haven is a country thatϖ offers foreign businesses and individuals minimal or no tax liability for their bank deposits in a politically and economically stable environment.

They have tax advantages for corporations and for the very wealthy, with obvious potential for misuse in illegal tax avoidance schemes.

Such countries include - Belgium, Ireland, Luxembourg, Malta, Netherlands, Caribbean, Bermuda, Singapore, Puerto Rico, Hong Kong, and Switzerland, etc.



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advantage of lower tax rates and, thus, not paying taxes to the country where the profit is made.

- Example, Company A made $19.2 billion in revenues.
- However, it showed the profits in Bermuda, a small island in the Atlantic where it doesn't own any tangible assets, hardly employs any workers, and where the corporate tax rate is zero.
- **Some terms related to "Tax Avoidance"** Transfer **Pricing**: Transfer pricing is an accounting and¬ taxation practice that allows for pricing transactions internally within businesses and between subsidiaries that operate under common control or ownership. The transfer pricing practice extends to cross-border transactions as well as domestic ones.

**Royalty Payments:** Royalties are fees paid to the owners of¬ legally-protected IP by those who exploit such IP in their businesses. So, for example, radio stations are legally required to pay songwriters copyright royalties when they play their music on the radio. Royalties are especially pertinent to the taxation of tech companies because they are at the heart of the tax avoidance. The profits of the subsidiaries that sell the multinational's products and services in, for example, the UK are reduced (often too little or nothing) by internal royalty payments.

**Intra Corporate Loans:** Debt can be used to exploit the tax¬ deductibility of interest payments which enables both base erosion and profit shifting. Multinational corporations use internal debt to shift profits to tax havens.

**Round Tripping:** Round Tripping is a practice where funds¬ are transferred from one country to another and transferred back to the origin country for purposes like black money laundering or to get the benefit of tax concession/ evasion/ avoidance from countries like Mauritius which enjoy low taxes, etc.

**Minimum Alternative Tax**

Minimum Alternate Tax is applied when the taxable income calculated according to the IT Act provisions is found to be less than 15.5 per cent (plus surcharge and cess as applicable) of the book profit under the Companies Act, 2013.

For example, a company with Rs 100 crore book profit is required to pay a minimum tax of Rs 15 crore (assuming 15 per cent MAT rate). If its normal tax liability after claiming deductions is Rs 10 crore (less than MAT), it is required to pay the remainder Rs 5 crore as MAT.

### Global Minimum Tax

**What is it**?

- EU members have agreed to implement a minimum tax rate of 15% on big businesses in accordance⎫ with Pillar 2 of the global tax agreement framed by the Organisation for Economic Cooperation and Development (OECD) last year. Under the OECD's plan, governments will be equipped to impose additional taxes in case companies⎫ are found to be paying taxes that are considered too low. This is to ensure that big businesses with global operations do not benefit by domiciling themselves in tax havens in order to save on taxes.

**Tax evasion reforms in the past**

In 2015, the Organisation of Economic Cooperation and Development (OECD) enacted the Base Erosion and Profit Shifting (BEPS) process to reduce the possibility of tax evasion due to a mismatch between different countries' tax systems.

In 2017, the US implemented its Tax Cuts and Jobs Act, reducing corporate tax rate from 35% to 21%, along with new measures to reduce profit shifting by US multinationals.

However, there was no discernible decline in global profit shifting or in profit shifting by US multinationals (which accounted for about half of global profit shifting) relative to 2015.

## CCI Fine on Google

**News Excerpt**

The Competition Commission of India (CCI) has slapped a fine on Google's parent company Alphabet Inc.

**Key Facts**

- The Competition commission of India is an affiliated offices of **Ministry of Corporate Affairs works as a statutory body** established under the Competition Act 2002.
- It consists of a Chairperson and **6 Members appointed by the Central Government**.



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- It is a **quasi-judicial body** that eliminates practices harming competition.
- It promotes and sustains **competition** and protects the **interests of consumers** and **ensures freedom of trade** in the markets of India.
- It is also required to **give an opinion on competition issues** on a reference received from a statutory authority established under any other law.
- It also **undertakes competition advocacy**, creates public awareness, and **imparts training on competition issues.**

**Competition Act (CA) 2002**

The CA 2002 was brought on the recommendation of the Raghvan committee. The act replaced **The Monopolies and Restrictive Trade Practices Act, 1969** (MRTP Act). The act prohibits anti-competitive agreements, and abuse of dominant position by enterprises and regulates combinations (acquisition, acquiring of control, and M&A), which cause or are likely to cause an appreciable adverse effect on competition within India. The Act also provided for the Competition Appellate Tribunal which was replaced by Company Law Appellate Tribunal (NCLAT) in 2017.

CCI Charged Google for two reasons:

- **Google's Mobile Application Distribution Agreement (MADA)** forces **Original Equipment Manufacturers (OEM)** to pre-install **Google Mobile Suite (GMS)** which doesn't come with the **option of uninstalling.** This is considered by CCI as a violation of **Section 4** of the Competition Act which is related **to the abuse of a dominant position.**
- **Google's Play Store doesn't allow** mobile app developers to use third-party payment services on its app store. It forces them exclusively and mandatorily use **Google Play's billing system (GPBS)** not only for receiving payments for apps and other digital products but also for certain in-app purchases. **However, it doesn't have the same policy for its own apps like YouTube**

**Third-Party Payment**

Google and Apple don't allow third-party payment as it will affect the revenue they earn from their cut in the app store and in-app sales. This revenue accounts for about 15% of their total revenues.

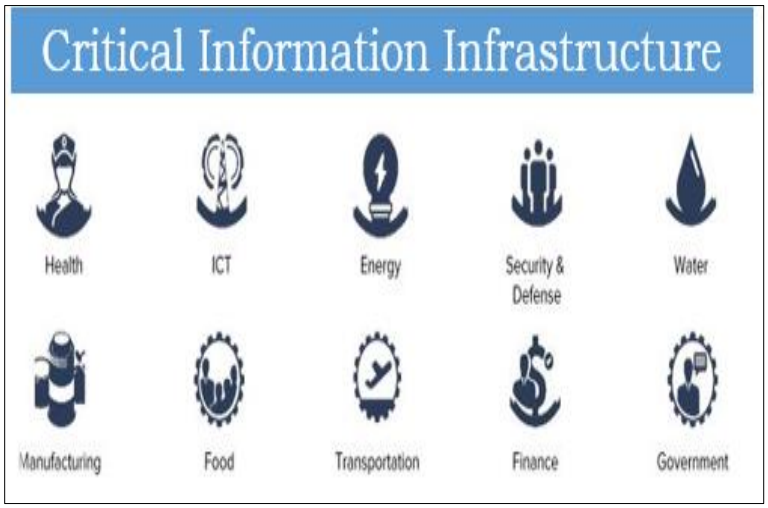
# Infrastructure Sector

## Critical Information Infrastructure

**News Excerpt**

Union Ministry of Electronics and IT (MeitY) has declared IT resources of ICICI Bank, HDFC Bank and National Payment Corporation of India (NPCI) as critical information infrastructure.

**Key Facts**




- **Information Technology Act (2000), 2008 amendments** recognized the need for a focused approach to cybersecurity and divided it into two segments: **Critical and Non Critical**.
- According to act, CII means the computer resource, the incapacitation or destruction of which, shall have debilitating impact on national security, economy, public health or safety.
- Section 70 of the IT Act 2000 empowers **government** to declare any computer resource which directly or indirectly affects the facility of CII, to be a '**Protected System'.**
- The **National Critical Information Infrastructure Protection Centre (NCIIPC)** was created by a **gazette notification** with specific responsibilities for protecting all CII. The **Computer Emergency Response Team** – India (CERT-IN) would be responsible for **all non-critical system.**



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- Any person who secures access or attempts to secure access to a protected system in violation of the law can be punished with a jail term of up to 10 years.

## WTO APPROVES PACKAGE OF TRADE AGREEMENTS

### News Excerpt

The World Trade Organization's 164 members approved a series of trade agreements early on 17 June 2022 that **included commitments on fish and pledges on health and food security.**

### Key Facts

- The package included the two highest profile deals under consideration - on **fisheries** and on a partial **waiver of intellectual property (IP) rights for COVID-19 vaccines.**
- The accord to curb fishing subsidies is only the second multilateral agreement setting new global trading rules struck in the WTO's 27-year history and is far more ambitious than the first, which was designed to cut red tape.
- The fishing subsidies deal has the potential to reverse collapsing fish stocks. Though pared back significantly, it still drew approval.
- The deal on a partial IP waiver to allow developing countries to produce and export COVID-19 vaccines has divided the WTO for nearly two years, but finally passed.
- One agreement had also been reached on 16 June 2022, on maintaining a moratorium on e-commerce tariffs, which is considered vital to allow the free flow of data worldwide.

## CENTRE AWARDS NINE GI TAGS

### News Excerpt

Centre has added nine new items, including **gamocha of Assam, Tandur red gram of Telangana, Raktsey Karpo apricot of Ladakh, and Alibag white onion of Maharashtra**, in the coveted GI tag list. **Kerala** has been awarded **five GI tags for its agricultural produce**. With this, the total number of GI tags in India comes to **432**.

### Key Facts

The **top five states** holding the maximum number of GIs are **Karnataka, Tamil Nadu, Uttar Pradesh, Karnataka, and Kerala**.

Of these, **401 are Indian origin products**, 31 foreign-origins.

Recently, the government supported the promotion of GIs by approving an expenditure of **Rs 75 crore for three years** for their advertising at **awareness programmes.**

### Flashback

Recognised by the World Trade Organization (WTO), GI is used to denote the geographical territory from where a product, be it agricultural produce, natural product, or manufactured, conveys the assurance of quality, distinctiveness, and attributes that are unique to that specific geographic region/place of origin.

India became a signatory to this convention when, as a member of WTO, it enacted the **Geographical Indications (Registration and Protection) Act, 1999**, which came into effect on 15 September 2003.

To protect the GI of goods, a GI registry has been established to administer the GI of Goods (Registration and Protection) Act, 1999, under **the Controller General of Patents, Designs & Trade Marks.**

## NOBEL PRIZE 2022 IN ECONOMICS

### News Excerpt

Ben S Bernanke, Douglas W Diamond and Philip H Dybvig have won the 2022 Nobel Prize for economics **research on banks and financial crises**.

### Key Facts

- ✓ The work for which Bernanke, Diamond and Dybvig are being recognised has been crucial to subsequent research that has enhanced our understanding of banks, bank regulation, banking crises and how financial crises should be managed.
- ✓ The research presented by this year's laureates in economic sciences reduces the risk of financial crises developing into long-term depressions with severe consequences for society, which is of the greatest benefit to us all.
- ✓ Unlike the other prizes, **the economics award wasn't established in Alfred Nobel's** will of 1895 but by the Swedish central bank in his memory. The first winner was selected in 1969.



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# Science and Technology

## Liquid Nano Urea:

Prime Minister of India has inaugurated the country's first liquid Nano urea plant at Kalol, Gujarat. It is indigenously developed by Indian Farmers Fertiliser Cooperative Limited (IFFCO) at Nano Biotechnology Research Centre (NBRC) in Kalol.

- India currently ranks 3 in fertilizer production and 2 in terms of fertilizer consumption.
- Urea forms 82% of the total nitrogenous fertilizer consumed in India, with an annual consumption of 33.6 million tonnes in 2019- 20.

**About IFFCO**

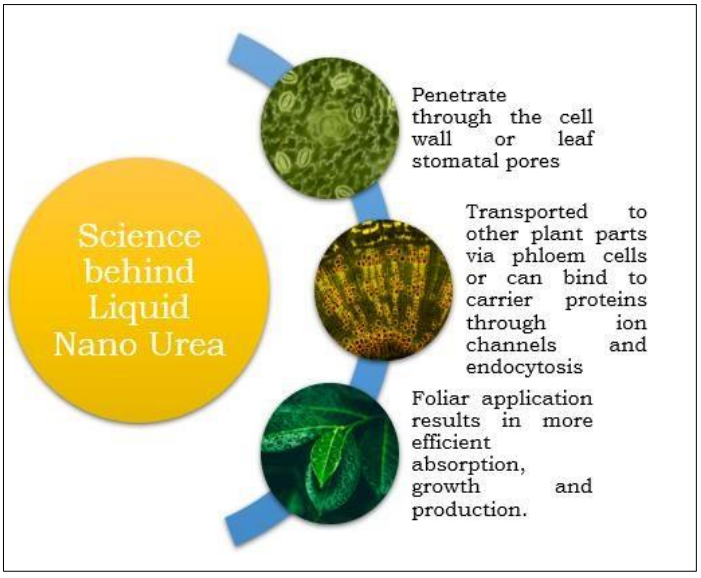
- Founded in 1967 as wholly owned by Indian cooperatives and one of the biggest cooperative societies with over 36000 Indian cooperatives.
- Core business is of manufacturing and selling of fertilizer.
- It has diversified business interests ranging from General Insurance to Rural Telecom.
- It provides timely supply of reliable, high quality agricultural inputs and services in anenvironmentally sustainable manner.

### About Liquid Nano Urea (LNU)

- LNU is a nanotechnology based Agri-input which provides nitrogen to plants.
- It contains 4 % nano scale nitrogen particles. These have a small size (20-50 nm) and therefore covers more surface area and number of particles per unit area than conventional urea.

### Benefits

- **Higher Crop Yield**-Average Yield increases up to 8 % have been recorded as per 11,000 field trials conducted across India during 2019- 20.
- **Increased Income for Farmers**- Due to reduction in input cost average increase in income of Rs 2000 per acre have been registered as per Farmer Field trials.
- **Increased Nutritional quality**- Nutritional quality of harvested produce is better in terms of protein and nutrient content.
- **Reduction in Chemical Fertilizer Usage**- It rationalizes application of bulk nitrogenous fertilizers like Urea and its one bottle (500 ml) can potentially replace at least 1 bag of



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conventional urea.

- **Environment Friendly**- It ensures agriculture sustainability and environment safety can be ensured and reduces excess application of bulk urea and associated volatilization as well as leaching and run off losses.
- **Easy to store and transport**: It has a significant impact in terms of relative logistics and warehousing cost

**Significance**

It increases Urea availability to crop by more than 80% resulting in higher Nutrient Use efficiency.

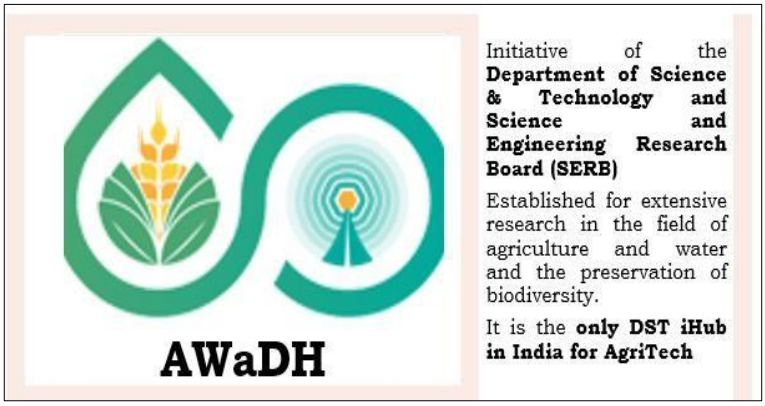
- It promotes precision and sustainable agriculture.
- It promotes clean and green technology as its industrial production is neither energy intensive nor resource consuming.
- It helps in minimizing the environmental footprint by reducing the loss of nutrients from agriculture fields in the form of leaching and gaseous emissions which used to cause environmental pollution and climate change.
- It will be a step in the direction of self-reliance in terms of 'ATMANIRBHAR BHARAT' and 'ATMANIRBHAR KRISHI'.

## AmbiTAG

IIT Ropar (Punjab) has developed a first-of-its-kind IoT device that monitors real- time ambient temperature during the transportation of perishable products, body organs, blood, vaccines, etc. It is called AmbiTAg. The device has been developed under Technology Innovation Hub – AWaDH (Agriculture and Water Technology Development Hub) and its Startup ScratchNest.

**Pre-Connect**

- India witnesses food wastage worth Rs. 92000 crores each year due to the lack of cold chain facilities and logistics. About 40% of the produced food never reaches the end consumers.
- India also witnesses huge Vaccine wastage during recent Corona crisis, majority of which happened due to logistics issues.




**Key Features**

- It is shaped as USB (Universal Serial Bus) and waterproof.
- Its temperature range is -40℃ to 80℃ in any time zone.
- Works for a full 90 days on a single charge.
- Generates alert system when temperature changes beyond a pre-set limit.
- All recorded data is retrievable.

**Significance**

- It has critical edge over other devices of same category as they work only for 30-60 days on single charge.
- It promotes Atamanirbhar Bharat as it will reduce import dependence of such devices and stand as an alternative for other countries.
- It can also monitor the temperature of animal semen during transit. Providing support to intelligent bovine management.
- It will help in easing farm to fork business model and support the objective of doubling of farmers income

## Anocovax

**What is Anocovax?**

1. **Anocovax** is an **inactivated SARS-CoV-2 Delta Covid-19 vaccine for animals**.
2. The **Indian Council of Agricultural Research (ICAR)** said that the immunity induced by Anocovax neutralises both **Delta and Omicron variants** of SARS-CoV-2.
3. The new vaccine contains **inactivated SARS-CoV-2 (Delta) antigen** with **Alhydrogel** as an adjuvant. It is safe for **dogs**, **lions**, **leopards**, **mice** and **rabbits**.



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## New telescope at ARIES

India has commissioned a **unique liquid-mirror telescope** atop a mountain in the Himalayan range in Uttarakhand that will keep a watch on the overhead sky to identify transient or variable objects such space debris, asteroids, supernovae and gravitational lenses. **It is the country's first and the Asia's largest liquid-mirror telescope.** The telescope will help in surveying the sky, making it possible to observe several galaxies and other astronomical sources just by staring at the strip of sky that passes overhead.

**More about telescope**

1. The telescope, built by astronomers from **India, Belgium and Canada, is located at an altitude of 2450 metres at the Devasthal Observatory campus of Aryabhatta Research Institute of Observational Sciences (ARIES)**, an autonomous institute under the Department of Science and Technology (DST), in Nainital district, Uttarakhand.
2. ARIES, referring to new facilities at Devasthal Observatory that now hosts two four meter class telescopes – the International Liquid-Mirror Telescope (ILMT) and the Devasthal Optical Telescope (DOT).

## NOROVIRUS

**What is norovirus?**

1. **Norovirus** is a **highly contagious virus** that is also sometimes referred to as the '**stomach flu**' or the '**winter vomiting bug**'.
2. It can be transmitted through contaminated food, water, and surfaces. The primary route is **oral-faecal**.
3. It is similar to **diarrhoea-inducing rotavirus** and infects people across age groups.
4. Disease outbreaks typically occur aboard cruise ships, in nursing homes, dormitories, and other closed spaces.
5. According to the WHO, emerging evidence suggests that "**norovirus infection** is associated with **intestinal inflammation**, **malnutrition** and may cause **long-term morbidity**".
6. It adds that an estimated 685 million cases of norovirus are seen annually, including 200 million cases amongst children under 5
7. One may get infected multiple times as the virus has different strains. **Norovirus is resistant to many disinfectants** and can withstand heat up to **60°C**.
8. Therefore, merely **steaming food** or **chlorinating water does not kill the virus**. The virus can also survive **many common hand sanitisers**.

## ISRO POEM Plate form:

**Orbital Platform and ISRO:** ISRO in 2019 started working on reducing space junk through its idea of PS4-OP.

The core plan was to utilise the fourth stage of PSLV as an in-orbit experiment module.

- This module would can be used to carry out scientific experiments for an extended duration of upto 6 months, instead of becoming a junk as soon as it reaches space.
- ISRO in its PSLV-C44 mission kept the fourth stage alive as an orbital platform for space-based experiments.

**About POEM**

- It performs in-orbit scientific experiments using the spent PS4 stage as an orbital platform.
- It is the first time that PS4 stage would orbit the earth as a stabilized platform.
- It will be a stabilized orbital platform which will help in keeping the payload in a correct position with respect to the Earth, sun etc.

## ISRO System for Safe and Sustainable Space Operation and Management (IS4OM):

**More about IS4OM**

1. ***IS4OM*** is a system conceived with a ***holistic approach*** towards ***ensuring safety and sustainability of the space environment*** while reaping the benefits of ***sustainable utilisation of outer space*** for national development.
2. It's part of the ***space situational awareness (SSA) programme*** to identify ***space debris*** and



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monitor them.

3. It's to identify the ***potential collision of our active satellites*** with other space objects and ***avoid collisions with proper maneuvering*** to save our space assets (satellites).
4. Space agency said ***concurrent processing of data*** from the observational facilities for ***space objects' orbit determination***, ***correlation*** and ***catalogue generation*** will take place here.

**What is Space Debris?**

1. **Space debris** consists of **rocket bodies** that are used **to launch satellites**, **defunct satellites**, **materials released during mission operations**, fragments from on-orbit breakups of space objects, and **fragments from Anti-Satellite (ASAT) tests**.
2. These space objects move with an **average speed of 27,000 km per hour** in Low Earth Orbits; therefore, a collision with even a centimetre sized tiny fragment can be catastrophic to an operationalspace asset.
3. These orbiting space debris pose a threat to **about3,000 operational satellites presently in orbit**, used for critical modern communication, commerce, travel and security systems.

## MONKEYPOX DECLARED A GLOBAL EMERGENCY

The **World Health Organization** said the **expanding monkeypox outbreak** in morethan 70 countries is an "**extraordinary**" situation that now qualifies as a global emergency.

- WHO previously declared emergencies for **public health crises** such as the **COVID-19** pandemic, the **2014 West African Ebola outbreak**, the **Zika virus** in Latin America in 2016.
- The **emergency declaration** mostly serves as a plea to draw more global resources and attention to an outbreak. Past announcements had mixed impact, given that the **U.N. health agency** is largely powerless in getting countries to act.
- To date, monkeypox **deaths have only been reported in Africa**, where a more dangerous version of the virus is spreading, mainly in **Nigeria and Congo**.
- **In Africa**, **monkeypox mainly spreads to people** from infected wild animals like rodents, in limited outbreaks that typically have not crossed borders.
- **In Europe**, North America and elsewhere, however, monkeypox is spreading among people with no links to animals or recent travel to Africa.

**Flashback**

1. **Monkeypox is a zoonosis**, that is, a disease that is **transmitted from infected animals to humans**. According to the WHO, cases occur close to tropical rainforests inhabited by animals that carry the virus.
2. **Monkeypox virus infection has been detected in squirrels**, Gambian poached rats, dormice, and some species of monkeys.
3. **Human-to-human transmission** is, however, limited — the longest documented chain of transmission is six generations, meaning the last person to be infected in this chain was six links away from the original sick person.

## Marburg virus:

**Marburg virus disease (MVD)**, earlier known as **Marburg haemorrhagic fever**, is a severe, often fatal **hemorrhagic fever**, according to the WHO.

- **Marburg**, like Ebola, is a **filovirus**; and both diseases are clinically similar.
- **Rousettus fruit-bats** are considered the **natural hosts for Marburg virus**. However, African green monkeys imported from **Uganda** were the **source of the first human infection**, the WHO points out.
- **It was first detected in 1967** after simultaneous outbreaks **in Marburg** and Frankfurt in Germany; and in **Belgrade**, **Serbia**.
- The disease has an **average fatality rate of around 50%**. However, it can be as low as 24% or as **high as 88% depending on virus strain** and case management, says the WHO.
- After the onset of symptoms, which can begin anytime between 2 to 21 days, **MVD can manifest itself** in the form of **high fever**, **muscle aches** and **severe headache.**



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## Technology Innovation Hub on Autonomous Navigation (TiHAN):

The government of India under the aegis of the **Ministry of Science & Technology** has inaugurated a first-of-its-kind, state-of-the-art "Autonomous Navigation" facility to develop unmanned ground and aerial vehicles in the IIT Hyderabad campus. It will be called Technology Innovation Hub on Autonomous Navigation (TiHAN).

**About TIHAN**

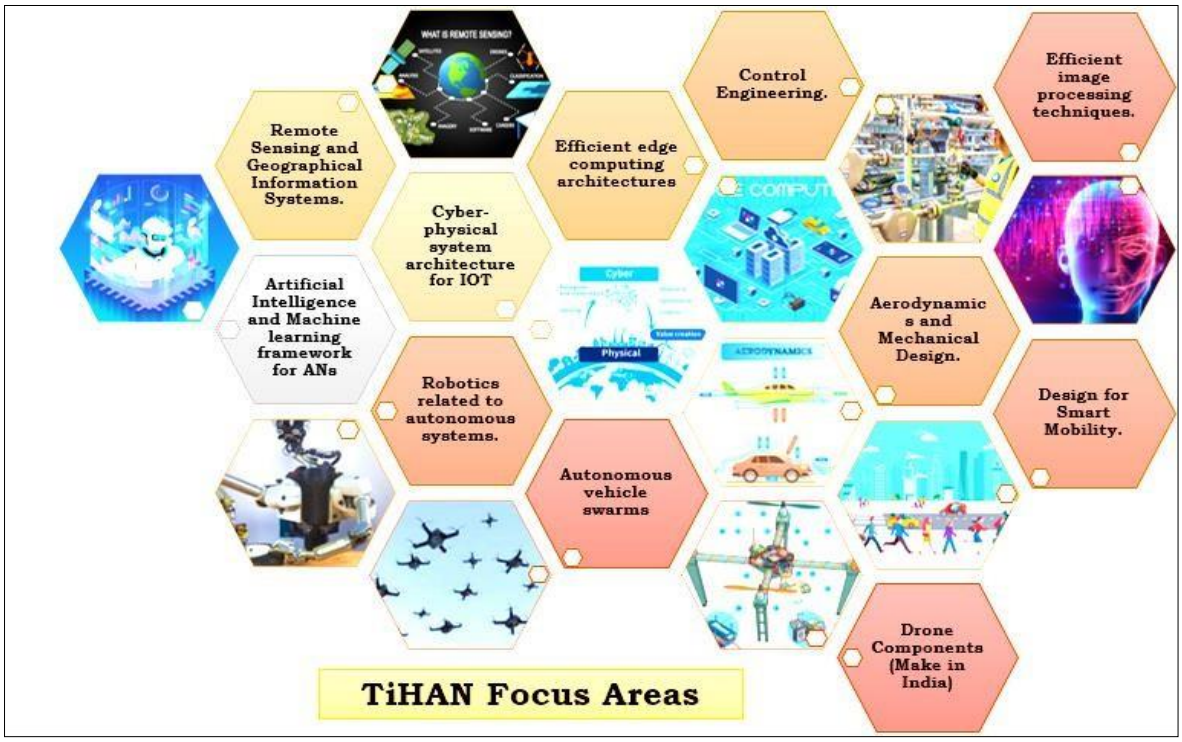
- It is a multidisciplinary initiative with the objective of making India a global player in Smart Mobility technology.
- It will provide test bed to investigate the operation of unmanned and connected vehicles in a controlled environment by simulating various scenarios that may occur in real-life. Incidents modeled will range from frequently occurring to extreme cases.
- It will deliver value through startup support system which includes pre-incubation, incubation and acceleration support programs for entrepreneurs and startups. For this it has program called PRAYAS.

## Langya Henipavirus

A new zoonotic disease caused by Langya Henipavirus has raised concern as it is considered as Biosafety Level 4 (BSL4) Pathogen.

**Novel Langya Virus**

- Langya Virus is a part of genus Henipavirus which is transmitted from animals to humans.
- It has a single-stranded RNA genome with negative orientation. These are larger genomes longer than any other known phosphorprotein in the Henipavirus Paramyxovirinae family.
- Novel langya virus is a phylogenetically distinct Henipavirus, **Other viruses of the type Henipavirus discovered earlier are the Mojiang, Ghanian, Cedar , Nipah and Hendra.** Among them Nipah and Hendra are other known virus which earlier have caused fatal illnesses in humans.




- Langya's genome is closely related to the Mojang Henipavirus which was discovered in southern China.
- **General Symptoms include**: Fever, Fatigue, Cough, Nausea, Headache, Loss of appetite etc.
- Impact of Virus:
  - Since Langya belongs to the same family as Nipah virus hence it has potential to become another pandemic.



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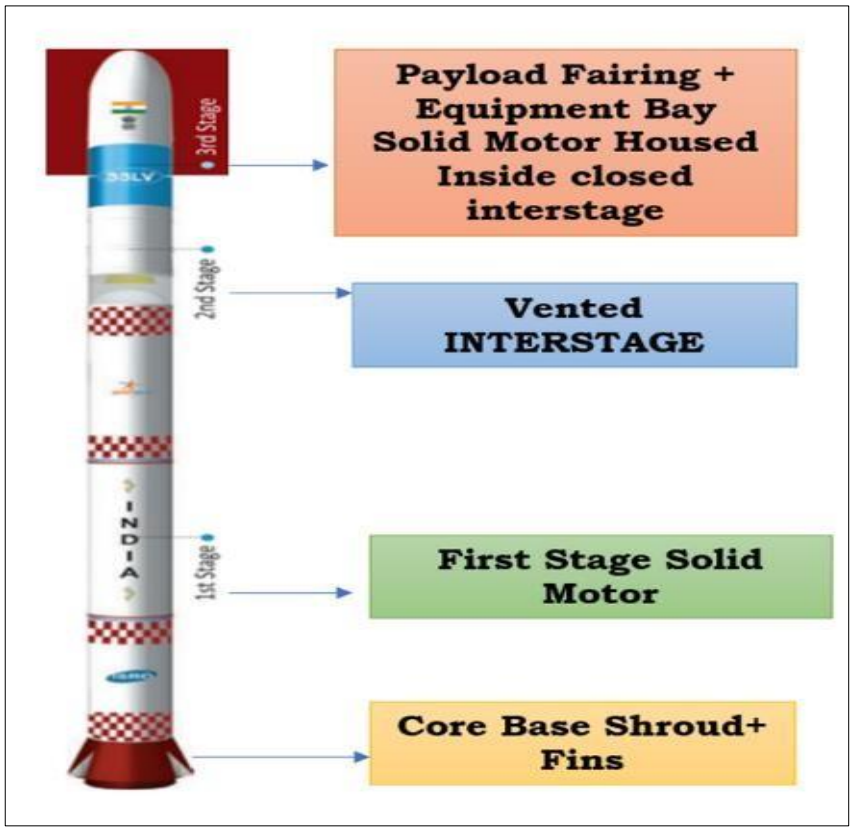
## SSLV launch

Indian Space Research Organisation (ISRO) attempted to launch its **first flight of the Small Satellite Launch Vehicle (SSLV)**. Launch carried an Earth Observation Satellite EOS-02 and a student satellite called as Azaadi SAT. Though mission ended in a failure it nevertheless laid foundation of ISRO new path towards space commercialisation.




**About SSLV**

- It is a **three-stage launch vehicle** that carries t**hree Solid Propulsion Stages and a liquid propulsion- based Velocity Trimming Module (VTM)** as a terminal stage. These weigh around 110 tonnes and are capable of launching **500kg satellites into 500 km Low Earth Orbit (LEO) and 300 kg to Sun Synchronous Orbit (SSO).**
- SSLV allows for low turn-around time with flexibility in accommodating multiple satellites. Its minimal launch infrastructure requirement makes it a low-cost alternative.

## India first private space situational awareness observatory

**India's first** commercial **space situational awareness observatory**, to track objects as **small as 10 cm in size orbiting the earth**, will be set up in the **Garhwal region of Uttarakhand** by **Digantara**, a space sector start-up. The **space situational awareness (SSA)** observatory will help India track any activity in space including that of **space debris** and **military satellites** hovering over the region.

### What

1. Currently, the **United States is a dominant player** in monitoring space debris with observatories in multiple locations and commercial companies providing additional inputs from across the world.
2. The **observatory in Uttarakhand** will fill the crucial gap in **SSA observations** in the region as there is a lack of such facilities between **Australia and southern Africa**.
3. The **high-quality observations**, along with those of its partner ground-based sensor network, would help improve its ability to monitor events occurring in **deep space**, especially in the **geostationary**, **medium-Earth**, and **high-Earth orbits**.
4. With this data, it would be able **to reduce the potential for collisions between satellites** and other spacecraft by making more accurate predictions of their location, speed, and trajectory.
5. With the establishment of the observatory **Digantara** will be able to supplement its **space- based sensors** in their mission **to monitor satellites and debris** in orbits ranging from **Low Earth Orbit (LEO)** to **Geosynchronous Earth Orbit (GEO)**.
6. This will improve the effectiveness of **tracking and identifying** pre-existing **resident space objects (RSO)**, and will result in the creation of a **hybrid data pool** that will serve both the commercial and the defence sectors of the space industry.



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## Space Junk: What are Space Debris?

- These are space junk that orbits earth at very high speed.
- It consists of parts of space craft and launch vehicles debris and includes smaller fragments such as screws.
- These junks exist in various sizes, however even a miniscule debris can cause huge damages. For e.g., a 100g object could create an impact comparable to a 30-kg stone travelling at 100kmph.
- These are produced when:
  - There is a collision of satellites in such situation generally an inactive satellite collides with active satellites.
  - There is an explosion in space due to Anti-Satellite weapon testing.

**Space Situational Awareness(SSA)**

- It monitors and track all space objects whether man made ornatural in a space weather.
- It helps in monitoring objects that can pose as a potential threat to satellites and launches.This allows for preventing disruptions to any crucial satellite-based communication.

## KESSLER SYNDROME:

Too much space junk can create a domino effect in which a chain reaction can occur wherein more and more objects will collide and create new space junk in the process until it renders Earth's orbit completely useless.

**Network for Space Objects Tracking and Analysis (NETRA)**

- It is an early warning system to detect debris and other hazards to Indian Satellites. Therefore, providing India with its own SSA (Space Situational Awareness) capabilities.
- It consists of connected radars, telescopes, data processing units and a control centre, which can track objects as small as 10 cm, up to a range of 3,400 km and equal to a space orbit of around 2,000 km.
- It will help in developing commercial potential for ISRO as it eases launch of multiple satellite, further for India its own SSA capabilities mean a clear protection for its national security against attack on crucial commercial satellite.

## INDIGENOUS VACCINE LAUNCHED FOR LSD (Lumpy Skin Disease)

UNION AGRICULTURE Minister **Narendra Singh Tomar** launched an **indigenous vaccine** for **lumpy skin disease (LSD)**, which has spread across states, causing deaths of hundreds of cattle since 2019. Tomar said the development of the vaccine was a milestone event as livestock, along with human resource, is the "**biggest asset of our country**".

Lumpi-ProVacInd, the vaccine, has been developed by two institutes under the Indian Council of Agricultural Research (ICAR) – National Equine Research Center, Hisar (Haryana) in collaboration with the Indian Veterinary Research Institute, Izzatnagar (Bareilly).

**What is the Lumpy Skin Disease?**

- According to a report by **GAVI**, the **Global Alliance for Vaccines and Immunisation**, the **Lumpy Skin Disease (LSD) disease** is caused by a virus called the **Capripoxvirus** and is "**an emerging threat to livestock worldwide**". It is genetically related to the **goatpox** and **sheeppox virus** family.
- **LSD infects cattle** and **water buffalo** mainly through vectors such as **blood- feeding insects**.
- Signs of infection include the appearance of **circular**, **firm nodes** on the animal's hide or skin that look similar to **lumps**.
- There are **30 crore livestock** in the country, considering the **plight of mute animals**, all possible measures should be taken to provide them relief at the earliest.
- The disease was **endemic in Africa**, but in the last 2-3 years, after entrapping the southern states of India, an outbreak/epidemic of LSD has spread to Punjab and other states of northern India. The disease occurs **mostly in cows** and somewhat less in **buffaloes**.



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## FIRST BRAIN-COMPUTER INTERFACE IMPLANTED

For the **first time ever**, a person might be able to **control a digital device directly with their brain**. A **brain-computer interface (BCI)** from endovascular BCI Company **Synchron** was implanted in a **human patient for the first time** in the United States. The procedure was conducted at the **Mount Sinai West medical centre** in New York.

1. This procedure was part of **Synchron's COMMAND trial**, which the company is conducting using a **first investigational device exemption (IDE)** awarded by the United States FDA.
2. The **COMMAND study** is aimed at assessing the safety and efficacy of the company's motor **BCI technology platform** in patients with severe paralysis. The goal is to enable patients to **control digital devices hands-free**.
3. **Synchron's Stendrode** is an **endovascular brain implant** designed to allow patients to **wirelessly control digital devices** using their thoughts, helping improve their functional independence.
4. The device is implanted through the **jugular vein** using the kind of surgical techniques used to treat strokes. This does not require **drilling into the skull** or **open-brain surgery**.
5. After the device is implanted, it **detects and wirelessly transmits motor** intent using a proprietary digital language. This should allow **severely paralysed patients** to control personal devices without using their limbs.
6. The **COMMAND trial** will assess the impact of everyday tasks including **texting**, **emailing**, **online shopping** and **accessing tele health services**.

## INDIA'S FIRST HYDROGEN FUEL CELL BUS

A **hydrogen fuel cell bus** developed by **KPIT-CSIR in Pune** was unveiled by Jitendra Singh, Union minister of state for Science and Technology. **The hydrogen fuel cell uses hydrogen and air** to **generate electricity**, producing **only heat and water** in the process.

### What is a hydrogen fuel cell?

1. **Hydrogen fuel cells** like the one present in the bus **produce electricity** by **combining hydrogen and oxygen atoms**.
2. The two gases react across an **electrochemical cell** similar to a conventional battery cell to produce electricity, water and small amounts of heat. This **electricity is then used by electric motors** to propel the vehicle forward.
3. **Fuel cells work in a similar manner to conventional batteries** found in electric vehicles but they do not run out of charge and **don't need to be recharged with electricity**.
4. They continue to produce electricity as long as there is a **supply of hydrogen**. Just like conventional cells, a fuel cell consists of an **anode (negative electrode)** and **cathode (positive electrode)** sandwiched around an electrolyte.
5. **Hydrogen is fed to the anode** and **air is fed to the cathode**. At the anode, a **catalyst separates the hydrogen molecules** into **protons and electrons** and **both subatomic particles** take different paths to the cathode.
6. The **electrons go through an external circuit**, creating a flow of electricity that can be used to power electric motors. The **protons**, on the other hand, **move to the cathode** through the electrolyte. Once there, **they unite with oxygen and electrons** to produce water and heat.

**What is the advantage of a hydrogen fuel?**

1. The primary advantage of **hydrogen fuel cell electric vehicles (FCEV)** is that they produce **no tailpipe emissions**.
2. They only **emit water vapour** and **warm air**.Another advantage is that they are **more efficient than internal combustion engine vehicles**.
3. Hydrogen fuel cell electric vehicles have another advantage when it comes **to refuelling time**, which makes them more practical than battery- powered electric vehicles for public transportation purposes.
4. Even with the fastest charging technologies, it could take hours to charge a battery-powered electric bus. Meanwhile, **hydrogen can be refilled in a fuel cell vehicle in a matter ofminutes**, nearly as fast as an internal combustion engine can be refilled with fossil fuels.

## PENPLUS Strategy

African nations have adopted a new strategy to boost access to the diagnosis, treatment and care of severe non-communicable diseases (NCDs) called 'PENPLUS Strategy' under WHO.



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**About PEN-PLUS Strategy**

- It is a regional strategy to address severe NCDs at First-Level Referral Health Facilities' that is aimed at bridging the access gap in the treatment and care of patients with chronic and severe NCDs.
- It presents a chance to build the leadership required to train, monitor, and mentor the adoption and extension of chronic care services.
- It aims at reducing premature mortality from NCDs.
- The PEN-Plus strategy expands on current WHO projects for comprehensive NCDs detection, assessment, treatment, and care in primary healthcare institutions.

**Package of essential non communicable (PEN) strategy**

- The WHO Package of essential non communicable (PEN) disease interventions for primary health care in low-resource settings is a framework for strengthening the equity and efficiency of primary health care in low-resource settings for the integrated management of NCDs.
- Implementation of the WHO PEN is key to achieving objective 4 of the WHO Global action plan for the prevention and control of non communicable diseases 2013-2020, adopted by the World Health Assembly in 2013.

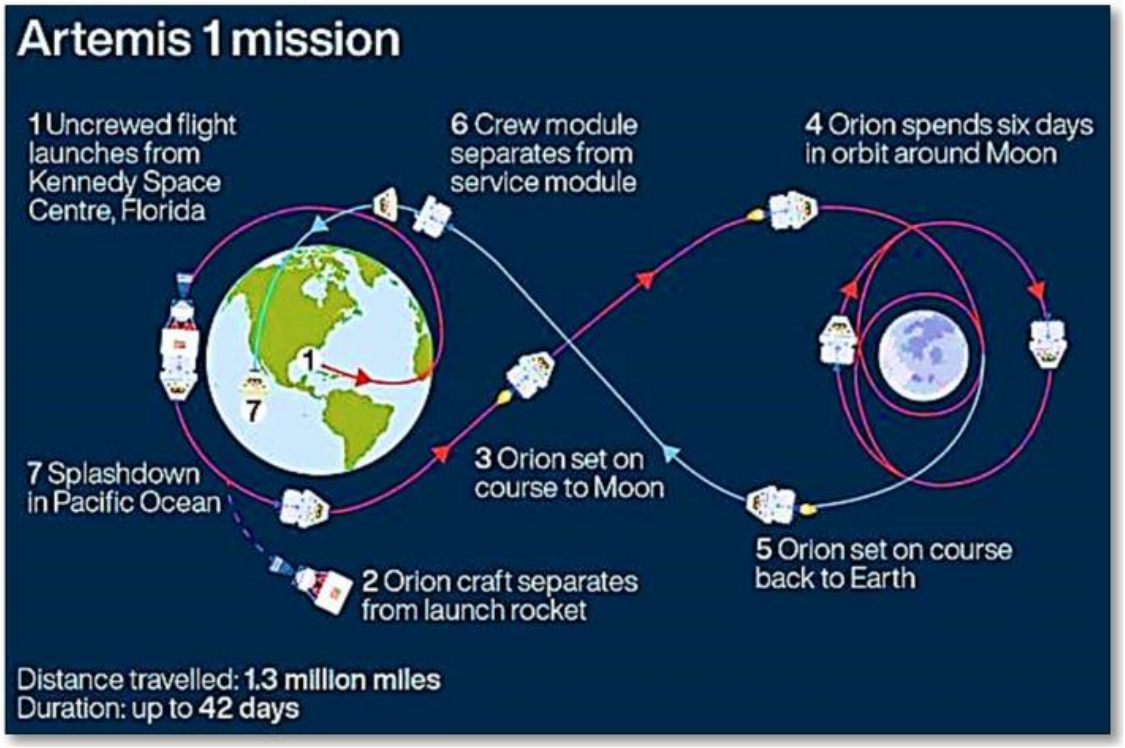
**Non-Communicable Diseases (NCDs)**

- They are illnesses or conditions that are not brought on by contagious substances.
- They are long-duration, often slowly progressing chronic diseases that are brought on by a confluence of genetic, physiological, environmental, and behavioural variables.

## NASA Artemis Mission

NASA intends to build a permanent lunar base at the moon's south pole, serving not only as a residence for moon-bound astronauts, but also as a staging ground for crewed missions to Mars and deep space exploration. On this line its, first step is Artemis 1 mission.

- NASA's Artemis mission plans to enable human landing on the Moon at the beginning of 2024 and target sustainable lunar exploration by 2028.
- The program is led by the United States' National Aeronautics and Space Administration NASA with three partner agencies: European Space Agency (ESA), Japan Aerospace Exploration Agency (JAXA) and Canadian agency (CSA)




- **Artemis accord:** It describes a shared vision for principles, grounded in the Outer Space Treaty of 1967.



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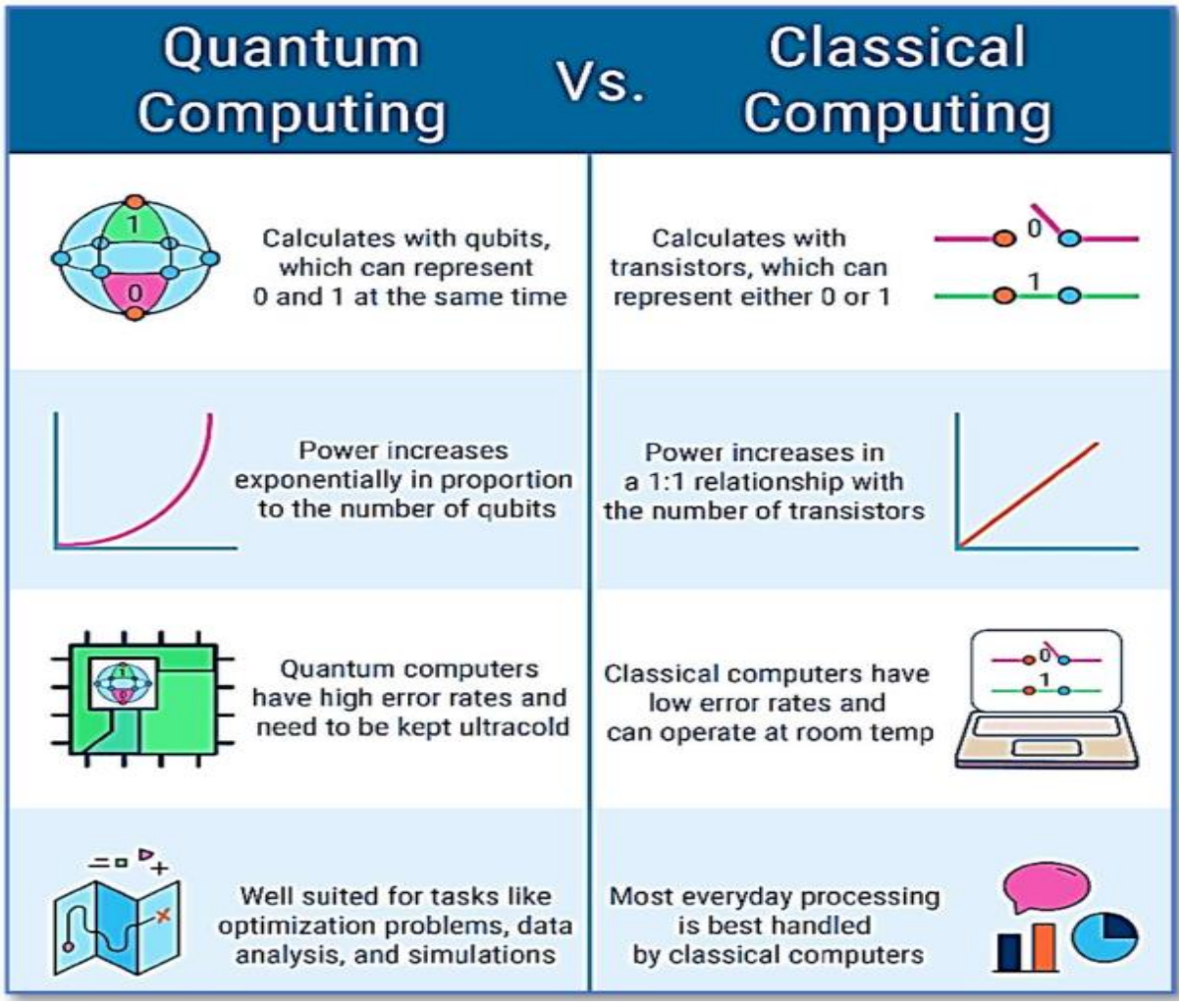
- It aims to create a safe and transparent environment which facilitates exploration, science, and commercial activities for all of humanity to enjoy.
- Till now, twenty-one countries have signed the Artemis accords, which include emerging space powers such as Brazil, South Korea, and the United Arab Emirates. It also includes private spaceflight companies.
- **Working:** The program's first step will be testing the flight of the Moon rocket, known as the Space Launch System (SLS), with the Orion capsule on top where astronauts will sit during future missions. This un crewed flight, during which Orion will swing around the moon before returning to Earth, is to wring out any issues with the spacecraft before putting people on board.
- **Study:** The first mission will study the geologic processes of the earliest planetary bodies preserved on the Moon. This study will investigate rare types of volcanic processes on the Moon.

## Quantum computing: Government effort in promoting the Quantum computing National Mission on Quantum Technologies & Applications (NM-QTA)

- It will be led by the **Department of science and technology**.
- It will look at building expertise in the quantum frontiers which will be essential for national security, and the development of quantum computers, quantum chemistry, quantum communication, new materials, quantum sensors, as well as quantum cryptography.
- The aim of the mission is to create skilled human resources for Quantum technology that will be a workforce of over 25,000 over the next 5-7 years.
  - It focuses on innovation and start-ups, technology development, and human and infrastructural resource generation to address issues concerning national priorities.



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**Quantum Computer Simulator (QSim) Toolkit**

- It is launched by the Ministry of Electronics and Information Technology (MeitY).
- It provides the first quantum development environment for academicians, industry professionals, students, and the scientific community in India.

**Quantum-Enabled Science and Technology (QuEST)**: The Department of Science and Technology launched the QuEST initiative to lay out infrastructure and to facilitate research in the field.

- AGNIi (Accelerating Growth of New India's Innovations): AGNIi is a programme of the Office of the Principal Scientific Adviser to the Government of India, a Mission under the Prime Minister's Science, Technology, and Innovation Advisory Council (PM-STIAC).
- It helps in commercialising the Indian technological innovation.

## The inflatable Aerodynamic Decelerator (IAD)

The Indian Space Research Organization (ISRO) recently announced the successful test of a supersonic 'Inflatable Aerodynamic Decelerator' (IAD).

**About IAD:** IAD has been designed and developed indigenously at Vikram Sarabhai Space Centre.

- The IAD was tested by ISRO using a Rohini-300 (RH300 Mk II) sounding rocket, from the Thumba Equatorial Rocket Launching Station (TERLS) near Thiruvananthapuram.
- IAD is an inflatable structure made of Kevlar fabric, coated with **Polychloroprene**.
- Its shape is maintained by a **closed, gas-pressured body** and the **inflating gas** is also generated internally.
- Inflatable Aerodynamic Decelerator (IAD) is a **technique used for an atmospheric entry of the rocket body (**the component known as the payload part i.e., **spent rocket stages (for usability))**, so that the payload is not destroyed on speedy entry into a planetary atmosphere due to the impact.

**Significance**

- IAD technology that could **help with the cost-effective recovery of expended rocket stages** (wasted stages of rocket during space missions) for re- usability and the **safe landing of payloads on some other planets** (like Mars or Venus in the future and making space habitats for humans).
- It can also be used for interplanetary missions. IAD is designed to increase drag upon entering the atmosphere of any planetary body, like Earth, Mars, or even Moon.

**Operation of IAD**

The IAD aims to do something similar to retrorocket but without firing rocket engines. It just uses friction or aerodynamic drag.

**Scope of this technology**

The IAD has huge potential in a variety of space applications viz. Recovery of spent stages of the rocket, Landing payloads on Mars or Venus and Making space habitats for human space flight missions.

## CERVAVAC

India's first indigenously developed vaccine for the prevention of **cervical cancer**

- Cervical cancer ranks as the 2nd most prevalent cancers in India and accounts for nearly one-fourth of the world's cervical cancer deaths.
- It provides vaccination against human papillomavirus (HPV).
- It is estimated that HPV types 16 and 18 (HPV-16 and HPV-18) together contribute to approximately 70% of all invasive cervical cancer cases worldwide.
- Major India's Vaccine Research Programme:
  - Indo-US Vaccine Action Programme,
  - National Biopharma Mission
  - Ind-CEPI Mission
  - Mission COVID Suraksha



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## INDIA'S FIRST INDIGENOUS AIRCRAFT CARRIER COMMISSIONED

Prime Minister commissioned **India's first indigenous aircraft carrier INS Vikrant** in Kochi. The **giant warship**, housing state-of-the-art automation features, will contribute significantly towards enhancing **India's maritime capabilities**. The commissioning of Vikrant is being seen as a significant step towards **India's self-reliance in the defence sector**.

**Key points about INS Vikrant**

1. **INS Vikrant** is the **largest ship ever built in India's maritime history**, built at a cost of Rs 20,000 crore
2. It has been named after **India's first aircraft carrier** (which was in service from 1961 to 1997) that played a **vital role in the 1971 war** with Pakistan
3. INS Vikrant vital stats: **262m long**, **62m wide**; displaces approximately 43,000 tonnes when fully loaded; maximum designed **speed of 28 knots** with **endurance of 7500 nautical miles.**
4. With its commissioning, **India joins an elite league** with **US**, **UK**, **Russia**, **China and France**- countries capabilities to indigenously design and build an aircraft carrier
5. INS Vikrant designed by **Indian Navy's Warship Design Bureau**, built by **Cochin Shipyard Limited.**
6. Capable of **supporting 30 aircraft**; **MiG-29K fighter jets**, **Kamov-31** and **MH-60R multi-role helicopters**, **Advanced Light Helicopters** and **Light Combat Aircraft** to be deployed on ship.

## STEALTH FRIGATE 'TARAGIRI' LAUNCHED

'**Taragiri**', the **third stealth frigate** of the **Indian Navy's Project 17A**, was launched in Mumbai on 11 September 2022, the **Mazagon Dock Shipbuilders (MDL)** said. **P17A ships** have been designed by the **Indian Navy's in-house design organization**, the Directorate of Naval Design (Surface Ship Design Group). **Taragiri's air defence capability**, designed to counter the threat of enemy aircraft and **anti-ship cruise missiles**, will revolve around the vertical launch and long-range surfaceto-air missile system.

## NASA'S DART SUCCESSFUL TESTED

NASA's **Double Asteroid Redirection Test (DART) spacecraft** successfully **crashed** into the **asteroid Dimorphos** on 27 September 2022. **With the collision**, humanity's **first planetary defence test** has been completed successfully in a mission that went exactly as planned without any hitches.

**More about DART**

1. The **targeted asteroid Dimorphos** is **actually a moon** to a slightly **larger asteroid called Didymos**.
2. While Didymos is 780 m at its widest, Dimorphos is about 160 metres. **Dimorphos orbits around Didymos**, and **this two-body system go around the Sun**.
3. One of the reasons scientists chose to target Dimorphos was because of **its relatively shorter orbit around Didymos**.
4. A deviation in this orbit was likely to be more noticeable, and thus **easier to measure**, than say, if Didymos itself was targeted and an attempt was made to measure the change in **its orbit around the Sun**.
5. The **DART mission** was launched in November last year. The collision is likely **to create a crater on Dimorphos**.

## DOT MAKES IMEI REGISTRATION MANDATORY

The ***Department of Telecommunications (DoT)*** has made it mandatory for mobile phone manufacturers to register the ***International Mobile Equipment Identity (IMEI)*** – the ***15-digit numbers*** that uniquely identify each mobile device – of all handsets made in India with the government. ***Importers, too***, will have to register with the government the IMEI number of each phone before importing it.

**How is the DoT mandating these changes?**

1. In a ***gazette notification*** on 26 September 2022 amending the prevention of tampering of the mobile device equipment identification number, rules 2017,



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2. The manufacturer shall register the imei number of every mobile phone manufactured in India with the **Indian counterfeited device restriction portal** of the Government of India in the **deptt of telecommunications** prior to the first sale of the mobile phone.

## DRDO TESTED VSHORADS MISSILES

***THE Defence Research and Development Organisation (DRDO)*** conducted two successful test flights of ***Very Short Range Air Defence System (VSHORADS) missiles*** capable of ***neutralising low altitude aerial threats*** at short ranges.

**What:**

1. The ***Very Short Range Air Defence System (VSHORADS) missile*** was successfully flight tested from a ground based portable launcher, off the coast of Odisha.
2. The ***VSHORADS missiles*** were launched from a ***ground-based portable launcher*** at the ***Integrated Test Range (ITR)*** of the DRDO at Chandipur, off the coast of Odisha.
3. The missile is a ***Man Portable Air Defence System (MANPAD)*** designed and developed indigenously by ***DRDO's Research Centre Imarat (RCI)***, Hyderabad in collaboration with other DRDO facilities and various Indian industry partners.
4. The ***air defence missile*** incorporates ***many novel technologies*** including ***miniaturized Reaction Control System (RCS)*** and ***integrated avionics***, which have been successfully tested during the trials.
5. The missile has been ***designed to neutralise low altitude aerial threats*** at short ranges and is propelled by a dual thrust solid motor.

## eSIM

The eSIM (or embedded SIM) technology is enlarging its presence in the Indian tech market as companies like Apple wants to introduce it by coordinating with the respective telecom companies in India.

**Pre–Connect:** Since 1991, SIM cards have been used to connect customers to their wireless carriers. The seventeen-digit code on the card identifies the country or region where the service works, the connected network, and a unique customer ID.

**What is eSIM:** eSIM stands for Embedded Subscriber Identity Module.

- An eSIM is a digital embedded, programmable and rewritable SIM and would use a cellular plan of a network carrier without requiring the need for a physical SIM.
- It would be much like a traditional SIM card and would become a part of the phone's internal organs.
- It also allows users to switch operators without having to replace any physical SIM cards. Jio, Bharti Airtel, and VI are the only telecommunication companies to offer eSIM support on smart phones in India both in Android and iOS.

| Feature | Physical SIM | eSIM |
|---|---|---|
| Locked to a carrier? | One carrier per SIM. | Reprogrammable to multiple carriers. |
| Dual-SIM (use two lines simultaneously) | Some phones have two SIM card slots. | Use an eSIM and a physical SIM, or 2 eSIMs simultaneously. |
| Switch phone lines on the fly | Pop out the SIM tray, remove the card, and pop a new one in. | Go to phone settings and turn your lines on/off. |
| Size dimensions | 12.3mm x 8.8mm | 6mm x 5mm |

**eSIM Functioning:** eSIM offers a new way to load carrier information into phones without using an external physical chip.

- Technically, an eSIM is a physical part. It's a microchip embedded inside your smart phone. This component can download carrier data remotely, enabling to switch carriers on the spot.
- If a phone has a physical SIM tray and an eSIM, people can actively use multiple lines at the same time. Some phones even support multiple active eSIM simultaneously. Toggling different carriers on and off can be accomplished easily with the press of a button in your phone's settings.
- Beyond the simple use of keeping connected to the wireless network, there's huge potential for unique applications that will help streamline consumer and business connectivity practices.



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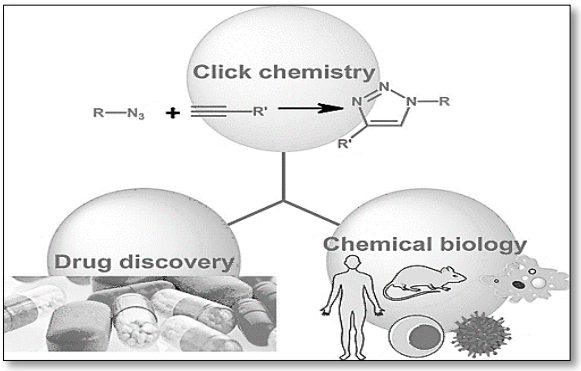
## Noble prize in chemistry

**Carolyn Bertozzi, Morten Meldal, and Barry Sharpless** were the Nobel laureates in Chemistry (2022) for pioneering click and bio-orthogonal chemistry.




### Pre-Connect

- Click chemistry refers to a group of reactions that are fast, simple to use, easy to purify, versatile, region specific, and give high product yields.
- **Genesis-** Click name has been taken from the click sound that airline seat belts make when they are fastened.
- **Main theme-** Molecules that easily fit into each other or click with each other, make the resultant chemical reaction more efficient.
- **Bioorthogonal chemistry** is a field in which click reactions are used to carry out chemical transformations inside biological cells- It offers a new way to study the natural processes in a living cell.

Barry Sharpless, who is the originator of the concept of 'Click Chemistry', has now won the Nobel Prize for the second time, making him only the fifth scientist to achieve this distinction. His previous Nobel Prize had come in 2001 in recognition of a different kind of work.

### About Click Chemistry

- "Click Chemistry" is a term that was introduced by K. B. Sharpless in 2001 to describe reactions that are high yielding, wide in scope, create only by-products that can be removed without chromatography, are stereo specific, simple to perform, and can be conducted in easily removable or benign solvents.
- This concept was developed in parallel with the interest within the pharmaceutical, materials, and other industries in capabilities for generating large libraries of compounds for screening in discovery research.
- Several types of reaction have been identified that fulfil these criteria, thermodynamically-favored reactions that lead specifically to one product, such as nucleophilic ring-opening reactions of epoxides and aziridines, non-aldol type carbonyl reactions, such as the formation of hydrazones and heterocycles, additions to carbon-carbon multiple bonds, such as the oxidative formation of epoxides and Michael Additions, and cycloaddition reactions.
- For example, an examination of the azide-alkyne cycloaddition shows that it fulfils many of the prerequisites. Many of the starting mono-substituted alkynes and organic azides are available commercially, many others can easily be synthesized with a wide range of functional groups, and their cycloaddition reaction selectively gives 1,2,3-triazoles.

### Applications of Click chemistry

- ✓ The click reaction has proven to be very useful for modifying functional bio molecules because of its high chemoselectivity. Biologic oligomers and polymers, such as peptides, nucleic acids, and carbohydrates, have been modified by using the copper-catalyzed azide-alkyne cycloaddition click reaction.
- ✓ Biomedical science, Nano particle research, Targeted drug delivery, Natural product discovery, Biomaterials, Biopolymers, etc.
- ✓ Therapeutic applications in attacking certain cancer tumors (Under clinical trials).

## Noble prize in physics

Alain Aspect, John F Clauser, and Anton Zeilinger were the Nobel laureates in Physics (2022) "for experiments with entangled photons, establishing the violation of Bell inequalities and pioneering quantum information science".

Their results have cleared the way for new technology based upon quantum information.

- A Series of experiments were conducted on something called entangled quantum states, where two separate particles behave like a single unit.
- **Quantum entanglement-** Pair of particles (photons); that are allowed to exist in a shared state where they have complementary properties.
- **Main theme-** Experiments with entangled photons, establishing the violation of Bell inequalities and pioneering quantum information science.



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- **Role of Quantum mechanics-** It is the best tool we have to understand how the universe works on its smallest scales.
- **Difference between Classical & Quantum mechanics-** Classical mechanics follows Newton's law of motion but it cannot be applied to study subatomic particles.
- **Chief architects of quantum mechanics-** Max Planck, Albert Einstein, Erwin Schrodinger, Werner Heisenberg, and Niels Bohr.

**About Quantum Mechanics**

Alain Aspect, John Clauser and Anton Zeilinger have each conducted groundbreaking experiments using entangled quantum states, where two particles behave like a single unit even when they are separated. Their results have cleared the way for new technology based on quantum information.

- In the 1960s, John Stewart Bell developed the mathematical inequality that is named after him. This states that if there are hidden variables, the correlation between the results of a large number of measurements will never exceed a certain value.
- Quantum mechanics predicts that a certain type of experiment will violate Bell's inequality, thus resulting in a stronger correlation than would otherwise be possible.
- John Clauser developed John Bell's ideas, leading to a practical experiment. When he took the measurements, they supported quantum mechanics by clearly violating a Bell inequality. This means that quantum mechanics cannot be replaced by a theory that uses hidden variables.
- Some loopholes remained after John Clauser's experiment. Alain Aspect developed the setup, using it in a way that closed an important loophole. He was able to switch the measurement settings after an entangled pair had left its source, so the setting that existed when they were emitted could not affect the result.
- Using refined tools and long series of experiments, Anton Zeilinger started to use entangled quantum states. Among other things, his research group has demonstrated a phenomenon called quantum teleportation, which makes it possible to move a quantum state from one particle to one at a distance.

**Major Applications**

- ✓ Ultra-precise clocks, super powerful computers, improved microscopes, uncrackable codes, biological compasses, solar cells, etc.
- ✓ Electronic devices use transistors that apply quantum mechanical ideas. For example- A laser that applies quantum properties of light.
- ✓ **Futuristic aspect-** Quantum cryptography and precise timekeeping as it is done in atomic clocks.

## Noble prize in physiology or Medicine

Svante Pääbo received the Nobel Prize in Physiology for his discoveries concerning the genomes of extinct hominins and human evolution.

**Pre-Connect**

- The 2022 Nobel Prize for Physiology or Medicine has been awarded to Swedish geneticist Svante Pääbo for his research in the field of genomes of extinct hominins and human evolution
- Dr. Pääbo's research has resulted in the rise of a new scientific disciple called paleogenomics, which is the study and analysis of genes of ancient or extinct organisms
- Neanderthals, the closest relatives of the present-day human species, lived in Europe and West Asia as far as southern Siberia and the Middle East – before they disappeared around 30,000 years ago
- Sequencing the genome of Neanderthal (an extinct relative of present-day humans) to reveal the link between extinct and modern humans.
- **Implication:** To better understand human evolution and migration.
- **Concluding fact:** It demonstrated that the most recent common ancestor of Neanderthals and Homo sapiens lived around 800,000 years ago.
- **Major hurdles:** As genetic material is fragile, most of the DNA discovered in ancient bones is highly degraded, chemically modified, and tainted with contamination. Thus it was difficult to quantify the DNA.
- He pioneered the study of ancient DNA from archaeological samples and extinct species- Established a new scientific discipline called Paeleogenomics.



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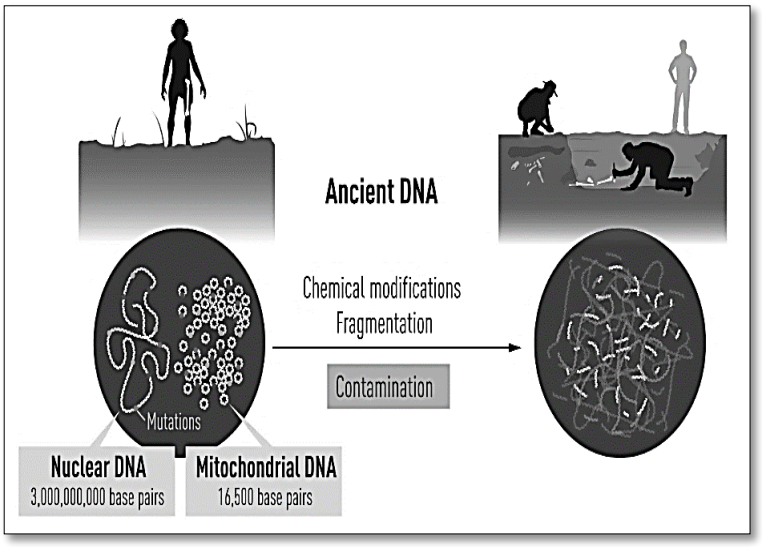
## About Svante Pääbo's work on evolution

- Through his pioneering research, Svante Pääbo accomplished something seemingly impossible: sequencing the genome of the Neanderthal, an extinct relative of present-day humans.
- He also made the sensational discovery of a previously unknown hominin, Denisova.
- Importantly, Pääbo also found that gene transfer had occurred from these now-extinct hominins to Homo sapiens following the migration out of Africa around 70,000 years ago.
- This ancient flow of genes to present-day humans has physiological relevance today, for example affecting how our immune system reacts to infections.
- Pääbo's seminal research gave rise to an entirely new scientific discipline; paleogenomics.
- By revealing genetic differences that distinguish all living humans from extinct hominins, his discoveries provide the basis for exploring what makes us uniquely human.




## 5G SERVICES LAUNCHED

Bringing a ***new era in technology***, Prime Minister launched the ***5G telecom services*** in India on 1 October 2022. The technology seeks ***to provide seamless coverage***, ***high data rate***, ***low latency*** and ***highly reliable communications system***. 5G services are also expected to play a major role to achieve the economic goal of making India a ***$5-trillion economy by 2024-25***.

### Ways that 5G could change your life

1. For consumers, ***5G promises higher data speeds over 4G***. At its peak, internet speeds on 5G could ***touch 10 Gbps***, compared to the 100 Mbps peak of 4G.
2. 5G technology offers ***latency as low as 1ms***. For the unversed, latency is the time taken by the device to send packets of data and get a response; ***Shorter the latency***, ***quicker the response***.
3. 5G technology will provide ***seamless coverage in remote areas across the country***. It will increase energy efficiency, spectrum efficiency and network efficiency.
   5G will also usher in the ear of technology advances in the country such as ***Virtual Reality (VR)***, ***Augmented Reality (AR)*** and more. These technologies will have end-to- end affect on multiple sectors - ***healthcare***, ***agriculture***, ***education***, ***disaster management*** and others.
4. 5G will enhance the fan experience at ***live music festivals and sports events*** like football matches. The ***low latency*** offered by 5G will offer immersive experience to sports lovers.
5. ***5G technology*** will give a boost to the ***Industrial Revolution 4.0***. The all-new 5G services will connect a variety of ***IoT (Internet of Things) sensors*** and devices to automate the scheduling of various processes.

## 'PRACHAND' INDUCTED INTO IAF

The first batch of indigenously-developed ***Light Combat Helicopter (LCH)*** named " ***Prachand***" was inducted into the ***Indian Air Force (IAF)*** at the Jodhpur air base on 3 October 2022. The indigenous ***Light Combat Helicopter (LCH)*** capable of ***destroying enemy air defence***, conducting ***counter insurgency strikes*** and much more.

### Features, significance of the LCH

1. LCH has the ***maximum take-off weight of 5.8 tonnes***, maximum speed of ***268 kilometers per hour***, range of 550 kilometers, endurance of over three hours and service ceiling — the ***maximum altitude*** to which it can fly — of ***6.5*** kilometres.



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2. The helicopter uses ***radar-absorbing material*** to lower radar signature and has a significantly ***crash-proof structure*** and landing gear.
3. A ***pressurised cabin*** offers protection from ***nuclear, biological and chemical (NBC)*** contingencies.
4. The ***helicopter*** is equipped with a ***countermeasure dispensing system*** that protects it from ***enemy radars*** or ***infrared seekers of the enemy missiles***.
5. As far as weapons systems are concerned, a ***20 mm turret gun***, ***70 mm rockets*** and ***air-to-air missile systems*** are onboard.
6. LCH is powered by two French-origin Shakti engines manufactured by the HAL. With these features, the LCH has the capabilities of combat roles such as destruction of enemy air defence, counter insurgency warfare, combat search and rescue, anti-tank, and ***counter surface force operations***.
7. ***The LCH is the only attack helicopter in the world*** which can ***land and take off at an altitude of 5,000 meters*** with a considerable load of weapons and fuel, meeting the specific requirements laid out by the Indian Armed Forces.

## CHINA LAUNCHES FIRST SOLAR OBSERVATORY (KUAFU-1)

***China*** launched the ***Advanced Space-based Solar Observatory (ASO-S)***, nicknamed ***Kuafu-1*** in Chinese on 9 October 2022. Since then, ***ASO-S***, which represents the country's ambitions to ***unravel the mysteries of the Sun***, has entered its planned orbit.

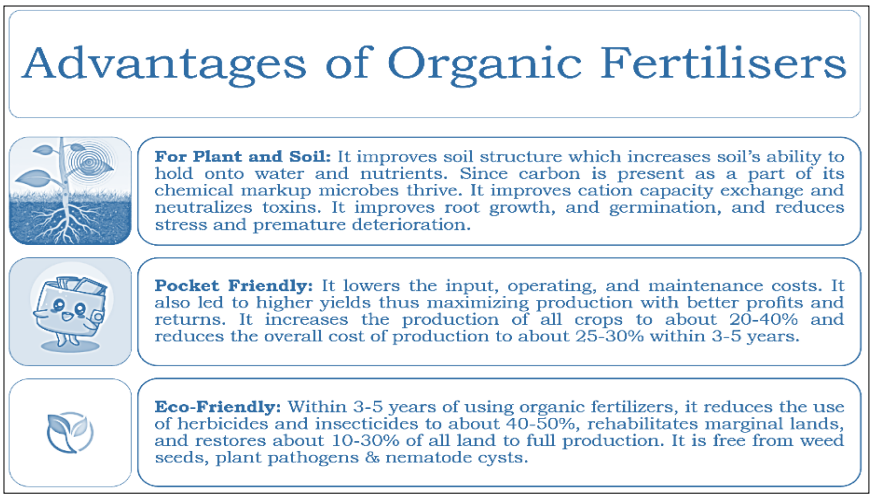
## IN A FIRST-IN-HUMAN TRIAL OF FLASH RADIATION

The **first-in-human research** on a small number of patients with **bone cancer** reveals that **FLASH radiation therapy**, which delivers therapeutic amounts of radiation in a fraction of a second, may hold promise as a potential treatment for **difficult-to-kill malignancies**. The method **was previously tested on animals** and proved to be equally safe and effective without producing any unanticipated adverse effects.

## Organic fertilizer

Organic Fertilisers are made from multiple organic sources such as organic compost, cattle manures, and domestic sewage.

- These are two types-
  - **Bio-Fertiliser**- They are the micro-organisms that aid in increasing the productivity of the soil. They are generally attached to solid or liquid carriers.
  - **Organic Manure**: These are partially decomposed organic matter for example compost or vermicompost which provides nutrients to the soil and improves yield.




- Organic Fertilizer performs the balancing act between soil health and production potential, thus it helps to reduce dependence on chemical inputs.
- It lowers the leaching losses by promoting higher water retention and also provides micro-nutrients in adequate and sufficient quantities.

### Potential of Organic Fertiliser in India

- Municipal Solid Waste (MSW): On average India produces 150,000 tonnes per day of municipal solid waste out of which it is estimated that organic waste hovers around 65000 tonnes per day.
- If it is diverted to the biogas industry it can help in reducing the import of fossils and fertilisers.



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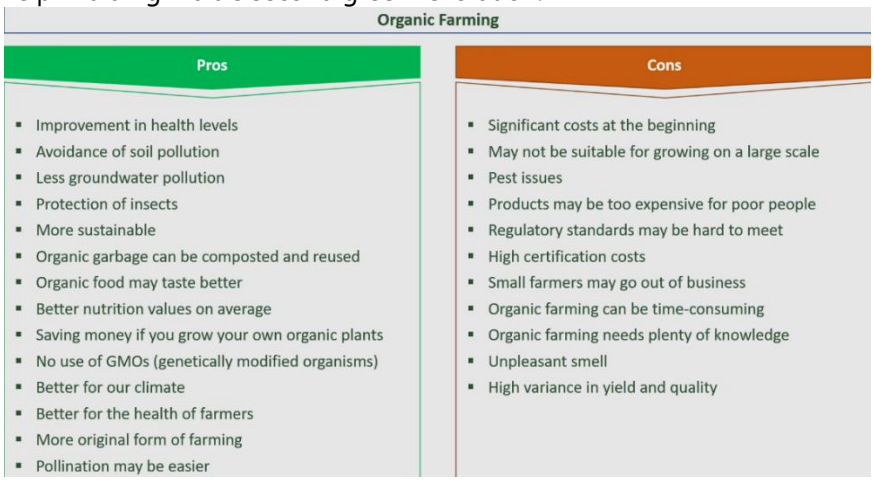
- Biogas Effluents- Effluent of biogas known as digestate has a huge potential in the generation of electricity and can also act as fuel for vehicles. Digestate can help in aiding India's second green revolution.
- The rising popularity of Organic Farming- Organic farming produce demand is growing in India. It is seeing an average growth of near about 17% per year.




**Limitations**

- ✓ Organic farming is monitored strictly to get certified.
- ✓ There is no separate market for organic produce, farmers must create their market to sell their produce at a higher rate- Expensive food items.
- ✓ Organic farming in larger fields is not practical hence yield is low.
- ✓ The problem of insufficient knowledge and skills is there in India at least.
- ✓ The penetration of organic fertilizers is low.

## Launch Vehicle Mark (LVM) 3

ISRO's heaviest rocket Launch Vehicle Mark 3 had successfully placed 36 satellites of UK-based one web into orbits.

- **Geosynchronous Satellite Launch Vehicle Mk III:** GSLV (Mark III) is a three-stage vehicle with two solid strap-on motors, one liquid core stage, and a high-thrust cryogenic upper stage. It is a heavy lift launch vehicle of ISRO for achieving a 4000 kg spacecraft launching capability to GTO (Geosynchronous Transfer Orbit) in a cost-effective manner. It was renamed LMV 3.

**LMV 3-M2 Mission**

- It is the biggest commercial mission of New Space India Limited (NSIL).
- It is the first multi-satellite mission of LVM 3 with the heaviest payload (near about 6 tonnes) in the LEO orbit.

## Pillar of creation: JWT (James Webb Telescope):

**About James Webb Telescope**

- A successor of the Hubble Telescope it was developed by an international collaboration between NASA, ESA, and the Canadian Space Agency.
- It is the largest and most **powerful infrared space telescope** which can see backward in time as it will examine every phase of cosmic history from the big bang to the evolution of the solar system.
- It will compare and understand how galaxies assemble over billions of years.
- It will also look at the origin from where stars and planetary systems are born.
- It will observe the atmospheres beyond our solar system.

**About Pillars of Creation**

- ➢ The Pillars creation are a small part of the Eagle Nebula, a part of space where dense gas and dust birth new stars.
- ➢ Pillars of Creation were first made famous when NASA's Hubble Space Telescope captured an image of them in 1995.
- ➢ The Hubble Space Telescope photographed the Pillars of Creation twice, once in 1995 and the next in April 2015.
- ➢ According to NASA, these pillars resemble buttes in the desert.
- ➢ These pillars appear like rock formations – three towers of interstellar gas and dust which are more permeable than they look.
- ➢ They are essentially very dense clouds of molecular hydrogen gas and dust that have survived longer than their surroundings while hot newborn stars in the vicinity throw ultraviolet light in their direction.

**About Photo evaporation**



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- ✓ The process by which high-energy radiation like ultraviolet light causes changes in substances it hits is called photo evaporation.
- ✓ This phenomenon causes the pillars to erode slowly, exposing small globules of even denser gas buried within them.
- ✓ These globules are called evaporating gaseous globules (EGGs) and the stars eventually emerge from the EGGs.

## Mission Prarambh

Skyroot's Vikram-S will be India's first privately developed rocket which was launched into space under the 'Prarambh' Mission.

**About IN-SPACe**

- ➢ The government approved the creation of a new organization named IN-SPACe to ensure greater private participation in India's space activities.
- ➢ IN-SPACe is supposed to be a facilitator, and also a regulator.
- ➢ It will act as an interface between ISRO and private parties and assess how best to utilize India's Space resources and increase space-based activities.

## C295 tactical transport aircraft

Prime Minister laid the foundation stone for the C-295 transport aircraft manufacturing facility in Vadodara to be set up by Airbus Defence and Space and Tata Advanced Systems Limited (TASL).

- C-295MW is a transport aircraft of 5-10 tonne capacity that will replace the ageing Avro aircraft of IAF.

## Shaped Antenna measurement of the background RAdio Spectrum-3 (SARAS-3) telescope:

**Raman Research Institute (RRI)** in Bengaluru said that in a **first-of-its-kind work**, using data from an **Indian telescope**, scientists have determined **properties of radio luminous galaxies** formed just **200 million years after the Big Bang**, a period known as the **Cosmic Dawn**.

**SARAS-3, indigenously designed and built at RRI**, was deployed over **Dandiganahalli Lake** and **Sharavathi backwaters**, located in Karnataka.

- Scientists study properties of **very early galaxies** by observing radiation from **hydrogen atoms** in and around galaxies, emitted at a frequency of approximately 1420 MHz.
- The radiation is stretched by the **expansion of the universe**, as it travels to us across space and time, and arrives at Earth in **lower frequency radio bands 50-200 MHz**, also used by FM and TV transmissions.

## National repository for life science data

**India's first national repository for life science data**, generated from publicly-funded research in the country, was unveiled by Science and Technology Minister Jitendra Singh. The '**Indian Biological Data Centre' (IBDC)**, established in Faridabad Haryana at the **Regional Centre of Biotechnology**, has data storage capacity of four petabytes and is also home to the '**Brahm**' High Performance Computing facility.

1. The **life sciences data** was till now stored in **data repositories in Europe and the US**, and a need were felt to house the data within the country.
2. The **computational infrastructure at IBDC** has also been made available for researchers interested in performing **computational-intensive analysis**.
3. **IBDC** has started **nucleotide data submission services** via two data portals viz. the '**Indian Nucleotide Data Archive (INDA)**' and '**Indian Nucleotide Data Archive - Controlled Access (INDA-CA)**' and has accumulated over 200 billion (one billion = 100 crore) bases from 2,08,055 submissions from more than 50 research labs across the country.
4. The Centre also hosts an online 'Dashboard' for the **genomic surveillance data** generated by the **INSACOG labs** that provides customised data submission, access, data analysis services, and **real-time SARS-CoV-2 variant monitoring across India**.



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## NASA'S CAPSTONE MISSION REACHED THE MOON

**NASA's CAPSTONE mission** reached the Moon on 13 November 2022, becoming the **first spacecraft** to enter into a **special elongate orbit** that **could support future space missions**. The microwave oven-sized satellite weighs just around **25 kilograms** and also become the **first CubeSat to fly and operate on the Moon**.

### What is the CAPSTONE mission?

1. **CAPSTONE** stands for **Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment**.
2. The **mission's CubeSat** was sent into space to test a **unique lunar orbit** called a **near rectilinear halo orbit, (NRHO)** which is very elongated and is located at a precise balance point between the **gravities of the Earth and the Moon**.

## Bluebugging

With a rise in the use of Bluetooth-enabled devices, our devices have become even more vulnerable to attacks from hackers. After bluejacking or bluesnarfing, hackers are using blue bugging to hijack devices and have access to sensitive data on phones and laptops.

### Bluetooth-based Cyber Security Threats

- **BlueJacking:** Under BlueJacking, one Bluetooth device hijacks another with spam advertising. Since Bluetooth usually has a broadcasting range of ten meters or about thirty feet, the attacker device is always placed nearby. It is used to do phishing attacks. A message sent by BlueJacking could contain a hyperlink to a website that has malware, or a website that grabs sensitive information from its victim.
- **BlueSmacking:** It is a way to execute a Denial-of-Service attack against a Bluetooth-enabled device. The device gets way more data packets or oversized data packets than it's designed to handle. The target gets overwhelmed, so it shuts down. The attack uses the L2CAP layer of Bluetooth's networking stack.
- **BlueSnarfing:** It is similar to BlueJacking however it is more dangerous than BlueJacking because it can take data. Data such as individual text messages, emails, photos, and unique identifying information that a person's phone or laptop uses with their cellular provider or ISP.

**BLURTOOTH**

**Bluetooth based on low energy protocol a**nd Basic Rate/Enhanced Data Rate (BR/EDR) transport methods **uses** Cross-Transport Key Derivation (CTKD) **for pairing. CTKD is** vulnerable to key overwrite, which enables an attacker to gain additional access to profiles or services that are not restricted by reducing the encryption key strength or overwriting an authenticated key with an unauthenticated key. **This is termed as BLURTOOTH.**

**Bluetooth Impersonation Attacks (BIAS)**

**The Bluetooth standard includes a legacy authentication procedure and a secure authentication procedure, allowing devices to authenticate to each other using a long term key. Those procedures are used during pairing and secure connection establishment to prevent impersonation attacks. However, system is prone to multiple** vulnerabilities **that includes** the lack of mandatory mutual authentication, overly permissive role switching, and an authentication procedure downgrade.

**These loopholes enable an attacker** to establish a secure connection with a victim, without possessing the long term key shared by the impersonated device and the victim. **Such attacks are called** Bluetooth Impersonation Attacks

### Understanding Blue Bugging

- It was first discovered by German researcher Martin Herfurt in 2004 and was initially used to target laptops with Bluetooth radios.
- Bluebugging is hacking technique hackers employ to worm their way easily into a device when its Bluetooth is on 'discovery mode'.
- A hacker can gain unauthorized access to these apps and devices and control them as per their wish through blue bugging.

## Lab Grown Meat

The U.S. Food and Drug Administration (FDA) has cleared Lab-grown meat for Human consumption. It was made by UPSIDE Foods, a company that makes cell-cultured chicken by harvesting cells from live animals.



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## Understanding Lab-Grown Meat

- It is cultivated meat grown from a test tube in a stainless-steel bioreactor. This meat is manufactured by a process borrowed from Regenerative medicine.
- There are four main technological elements to the cultivated meat: The development of cell lines, Cell culture media, Scaffolding, and Bioreactors.
- The cells are acquired from an animal. Then they are placed in a warm, sterile vessel with a solution called a growth medium which contains nutrients including salts, proteins, and carbohydrates, helping in the growth of cells.
- The flavor of this meat is like real meat.
- The nutrient profile of lab-grown meat is similar to that of real meat, we can even enhance its nutrient content.

**Bioprinting:** It is an **additive manufacturing process** where organic and biological materials such as living cells and nutrients are combined to create artificial structures that imitate natural human tissues.

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# Base editing

Recently, For the first time, a new gene editing technology called base editing was used to modify immune cells and successfully treated a teen with treatment-resistant leukemia.

### Understanding Bases in DNA

- Molecules called nucleotides, on opposite strands of the DNA double helix, form chemical bonds with one another. These chemical bonds act like rungs in a ladder and help hold the two strands of DNA together. There are four nucleotides, or bases, in DNA: **adenine (A), cytosine (C), guanine (G), and thymine (T)**. They function as the fundamental units of the genetic code.
- The information in DNA is stored as a code made up of these four chemical bases. The order, or sequence, of these bases, determines the information available for building and maintaining an organism, similar to how letters of the alphabet appear in a certain order to form words and sentences.

**T-CELLS and T-ALL**

- **T- cells** are a part of the immune system that **focuses on specific foreign particles**. Rather, then genetically attack on foreign element.
- T-cell acute lymphoblastic leukemia (T-ALL) is **an aggressive malignant neoplasm of the bone marrow**.

## Understanding Base Editing

Base editing is a method to allow scientists to zoom into a precise part of the genetic code and then alter the molecular structure of just one base, converting it into another and changing it according to the genetic instructions.

### Working on Base Editing

- Firstly, an individual's T-cells are removed, then modified and reintroduced to the individual. The problem with such an approach (besides the expense) is that very often when an individual is sick, it is simply impossible to obtain enough healthy T-cells to create CAR-T cells.
- If donors can provide healthy T-cells to an individual, these T-cells from a foreign body are going to attack every single cell in that patient's body, making the treatment counterproductive.



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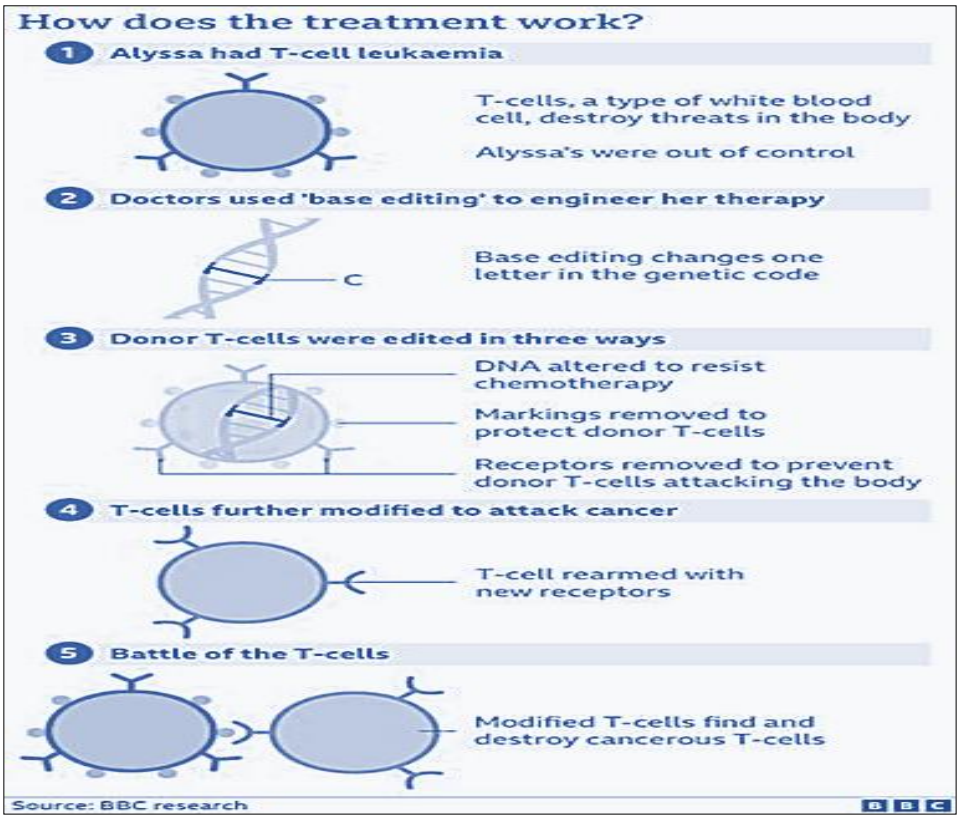
- Thus, scientists have resorted to the method of base editing, through this technique of genetic editing they make it possible for one donor to supply T-cells to multiple recipients, without the traditional risks associated with it.

**Base Editing vs Crisper**

- ✓ Conventional CRISPR-Cas9 gene editing introduces double-strand breaks, which can lead to off-target effects. Instead, Base editing avoids double-strand breaks, to minimize errors.
- ✓ Thus, Base editors **allow precise nucleotide substitutions in the DNA without having to break the same or force the cell machinery to repair it and in the process make mistakes**, which is the main mechanism of CRISPR-Cas9.




## Deep Fakes

### Understanding Deep Fakes

- A DeepFakes refers to a specific kind of synthetic media where a person in an image or video is swapped with another person's likeness.
- DeepFakes content is created by using two competing AI algorithms. Generator and the discriminator. Together, the generator and discriminator form a generative adversarial network (GAN).
- The generator creates phony multimedia content and a discriminator is used to determine whether the content is real or artificial.
- Each time the discriminator accurately identifies content as being fabricated, it provides the generator with valuable information about how to improve the next DeepFake.
- The first step in establishing a GAN is to identify the desired output and create a training dataset for the generator. Once the generator begins creating an acceptable level of output, video clips can be fed to the discriminator.
- As the generator gets better at creating fake video clips, the discriminator gets better at spotting them. Conversely, as the discriminator gets better at spotting fake videos, the generator gets better at creating them.
  - India does not have any law specifically for deep fake cybercrime, but various other laws can be combined to deal with it such as Section 66D of IT Act 2000, laws related to the misusing of the tech. which include Copyright Violation, Defamation and cyber felonies.

**Shallowfakes**

Coined by Sam Gregory, Shallow fakes are videos that are either presented out of context or are doctored with simple editing tools. They are crude but undoubtedly

## Lecanemab drug

A drug named Lecanemab has been successful in reducing cognitive decline in patients with Alzheimer's disease.

- **Alzheimer's disease –**It is a progressive neurologic disorder that causes the brain to shrink (atrophy) and brain cells to die.



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- It affects parts of the brain that control thought, memory, and language.
- It can seriously affect a person's ability to carry out their daily activities.

- Lecanemab has been jointly developed by pharma companies Biogen and Eisai and was tested on patients with early Alzheimer's.

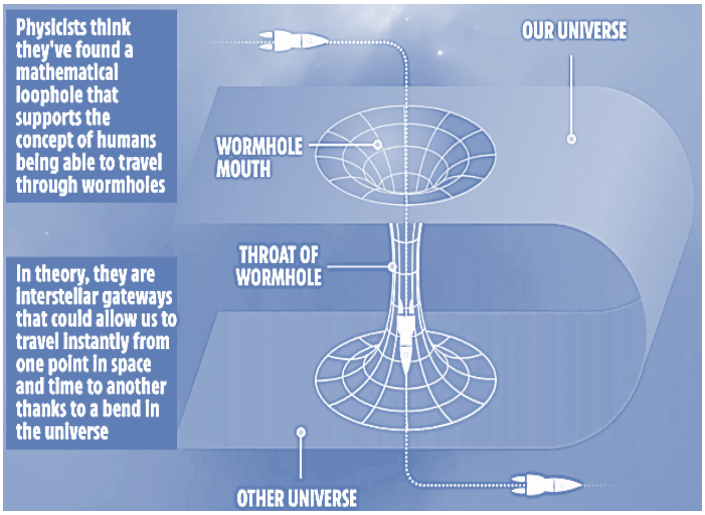
## Wormhole

Researchers have announced that they have created a "baby" wormhole. This is hailed as a theoretical achievement, though physical wormhole remains in the realm of science fiction.

**Theory of Relativity :** The theory of relativity encompasses two interrelated theories by Albert Einstein: special relativity and general relativity, proposed and published in 1905 and 1915, respectively.

**Special Relativity ($E = mc^2$)**

- The theory of special relativity explains how speed affects mass, time, and space. The theory includes a way for the speed of light to define the relationship between energy and matter.
- Special relativity is mostly used when discussing huge energies, ultra-fast speeds, and astronomical distances, all without the complications of gravity.
- The theory suggests that- As an object approaches the speed of light, the object's mass becomes infinite and so does the energy required to move it. That means it is impossible for any matter to go faster than light travels.
- An implication of the theory of Special Relativity is time dilation. In simpler terms, time dilation means that time moves relative to the observer. So, when an object is experiencing time dilation it means if it is moving very fast, it will experience time more slowly than when it is at rest. This explains the slower ageing of astronauts than people on earth.




- Time dilation also plays a crucial role in the effective functioning of the Global Position System (GPS).

**General Relativity**

- The theory of General Relativity adds the gravity factor to the space-time continuum. It asserts that massive objects caused a distortion in space-time.
- For Example, Imagine setting a large object in the center of a trampoline. The object would press down into the fabric, causing it to dimple. If we then attempt to roll a marble around the edge of the trampoline, the marble would spiral inward toward the body, pulled in much the same way that the gravity of a planet pulls at rocks in space.
- Scientists have observed countless phenomena matching the predictions of relativity-
  - **Gravitational Lensing**- Light bends around a massive object, such as a black hole, causing it to act as a lens for the things that lie behind it. Astronomers routinely use this method to study stars and galaxies behind massive objects.
  - **Gravitational Redshift**- The electromagnetic radiation of an object is stretched out slightly inside a gravitational field. It is the occurrence of the Doppler Effect with waves of light at all frequencies.
  - **Gravitational Waves**- Einstein predicted that violent events, such as the collision of two black holes, create ripples in space-time known as gravitational waves. And in 2016, the Laser Interferometer Gravitational-Wave Observatory (LIGO) announced that it had detected such a signal for the first time.

**Understanding Wormhole**

- A wormhole is a hypothetical tunnel-like structure connecting twodifferent points through space-time.
- Einstein's theory of general relativity predicted the existence of wormholes.
- The wormhole theory says that a passage through space-time could create shortcuts for long journeys across the universe.



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## Iknife

Intelligent surgical knife a.k.a iKnife can smell tumors thus detecting womb Cancer within seconds. With 89% accuracy, it can reliably diagnose endometrial cancer.

- Cancer is a group of diseases in which abnormal cell growth occurs with the ability to spread to parts of the body.
- It is a disease of the genes in the cells of the human body. Genes control the way human cells work. But, changes to these genes can cause cells to malfunction.
- There are two main categories of cancer:
  - Hematologic (blood) cancers are cancers of the blood cells, including leukemia, lymphoma, and multiple myeloma.
  - Solid tumor cancers are cancers of any of the other body organs or tissues. The most common solid tumors are breast, prostate, lung, and colorectal cancers.
- According to World Health Organisation, cancer is the second leading cause of death globally.
- Cancer causing viruses are called **oncovirus.**

**Working of iKnife**

- iKnife uses electro surgery method.
- It uses an electrical current to rapidly heat tissue cutting through it while minimizing blood loss.
- It vapourises the tissue thus creating smoke.
- The smoke is sucked away by extraction systems
- It uses electrical currents to analyze this smoke to differentiate between cancerous and healthy tissue.

**Government Programme**

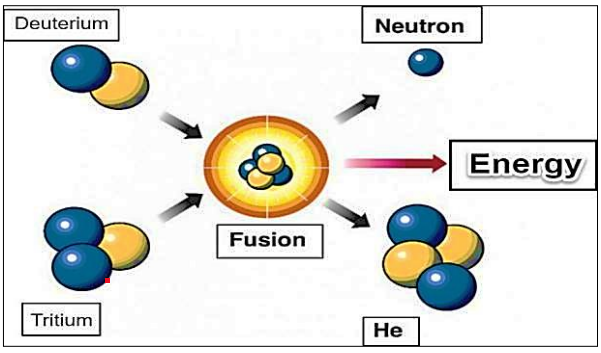
- National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS):-For cancer, the tertiary care cancer centers scheme aims at setting up cancer institutes for providing comprehensive cancer care in the country.
- Rashtriya Arogya Nidhi:- The Scheme provides financial assistance to patients, living below the poverty line and who are suffering from major life-threatening diseases, to receive medical treatment at any of the super specialty Government hospitals or institutes.
- National Cancer Grid:-It is a network of major cancer centers across India with the mandate of establishing uniform standards of patient care for prevention, diagnosis, and treatment of cancer.

**Significance**

- ✓ It minimizes damage to healthy tissue while ensuring the removal of all the Cancer cells.
- ✓ Womb cancer tests require almost two-week wait for the results. The ability to providea diagnostic test that provides results immediately benefits early detection, diagnosis and treatment.
- ✓ iKnife is already being used to treat breast and brain cancers and now it canalso accurately detect the presence ofendometrial cancer.

## Nuclear fusion and clean energy

Recently, scientists for the first time performed a reaction that produced more power than it was used generate. They used powerful lasers to focus energy that produced 1.5 times more energy.




**Nuclear Fusion**

**Working**

- When two light nuclei merge to form a single heavier nucleus, a fusion reaction takes place.
- The mass of a single nucleus formed during the reaction is less than the mass of two nuclei.
- The leftover mass is the energy that is released in the process.

**Methods Used**

- Laser beam is used in this experiment. A 192-beam laser is fired at a small capsule filled with deuterium-tritium fuel.
- Tokmak- a doughnut-shaped vacuum chamber that uses powerful magnets. This turns fuel into superheated plasma where fusion may occur.

**Advantages of Nuclear Fusion**



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- Abundant energy- It has the potential to provide the kind of minimum energy needed to provide energy electricity to our city and industries.
- Sustainability- Most fusion reactions use two elements i.e. deuterium and tritium and not fossil fuel thus ensuring long-term sustainability.
- No carbon dioxide- The by-product of the fusion reaction is helium which is an inert, non-toxic gas.
- Limited risk of proliferation- It doesn't use fissile materials like uranium that can be used to make nuclear weapons.

No risk of meltdown- In a tokamak fusion device a Fukushima or Chernobyl-type nuclear accident is not possible.

## Drdo developes UFRA for space Radar

In a key development, **Electronics and Radar Development Establishment (LRDE)**, a Bengaluru lab of the **Defence Research and Development Organisation (DRDO)**, has developed a **major subsystem for space radar**, which holds significant potential not only for the Indian Space Research Organisation (Isro), but also for the military.

**More about Space radar**

1. **LRDE** has been involved in the development of **space-borne imaging radar** — mainly consisting of **electronic radar subsystems** and **antenna deployment mechanisms** — for installation on satellites has completed the development of an **UnFurlable Reflector Antenna (UFRA)**.
2. **UFRA is one of the major subsystems of a radar**, LRDE said, adding that radars for space applications require an antenna to be stowed in compact volume during launch and then deployed in the required shape **once the satellite is in the required orbit**.
3. To meet this requirement, **LRDE has developed the UFRA system** which consists of a **rim truss-based deployable mechanism**, **primary arm**, **reflector mesh**, **tension ties**, nets, and motor. A cable is routed through the diagonal members of the rim truss elements.
4. The **UFRA** was realised and the deployment of the antenna to the required height was achieved successfully by an **unfurlable deployment mechanism**. The design can be adapted **to realise any size of UFRA**.
5. The antenna, is likely to be part of **space-based military radar**, which LRDE is working on. The specific details about the radar cannot be divulged at this moment, but **the development of UFRA is a key milestone** in the development of the radar.
6. **LRDE is a key DRDO lab with a mission** to design and develop state-of-the-art radar systems meeting current and futuristic requirements of the tri-services, paramilitary forces, intelligence and strategic missions.
7. It is also tasked with **establishing indigenous production capability** through industry partnership to achieve total self-reliance in the field radars besides promoting in-house research, engaging academia and industry to build competence towards creating a centre of excellence in the field of **radar technologies**.

## Bharos

An incubated startup of IIT Madras developed a mobile operating system named BharOS. It is being promoted by the government as India's answer to the Google-owned Android and Apple's iOS, the two most dominant mobile operating systems in the world.

**Understanding Mobile Operating System**

- An Operating System is software that provides a link between the user and the system hardware. Furthermore, it manages all interactions between software and hardware.
- A MobileOS is a software platform designed specifically for mobile devices such as smartphones, tablets, and other embedded devices. It allows mobile devices to run applications and other programmes.

## Hybrid immunity

A recent study published in the journal ''The Lancet Infectious diseases held that hybrid immunity" provides better protection against severe Covid-19 vis-à-vis other immunities which wanes against a re-infection within a few months.

**Understanding Immunity**



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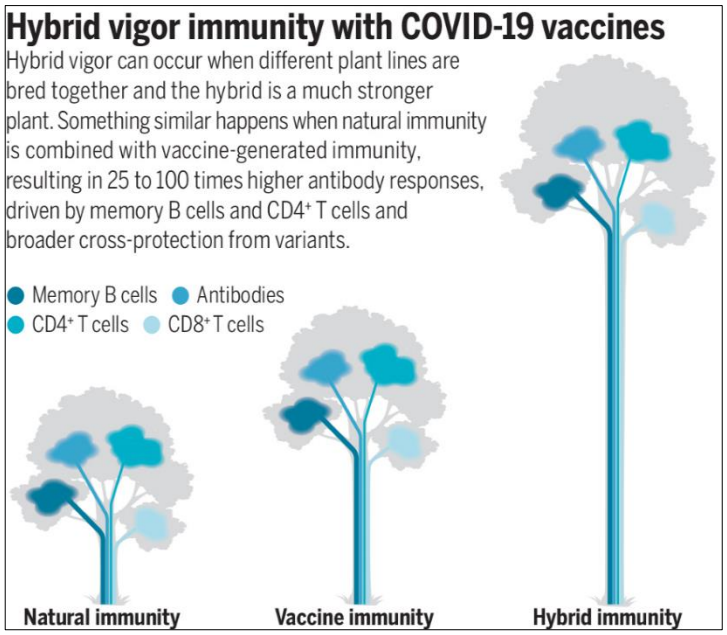
- Immunity to a disease is achieved through the presence of antibodies to that disease in a person's system.
- The immune system forms B cells (that make antibodies) and specialist T cells (that either aid B cells or kill infected cells), as well as memory cells, to prepare for any future attacks from the same pathogen.
- Antibodies are proteins produced by the body to neutralize or destroy toxins or disease-carrying organisms. Antibodies are disease-specific.
- There are two types of immunity
  - **Active Immunity**-It activates when a person is exposed to a disease triggering the immune system to produce antibodies to that disease. It can be acquired through:
    - **Natural immunity** is acquired from exposure to the disease organism through infection with the actual disease.
    - **Vaccine-induced immunity** is acquired through the introduction of a killed or weakened form of the disease organism through vaccination.
  - **Passive Immunity-** It activates when a person is given antibodies to a disease rather than producing them through his or her immune system. A new born baby acquires passive immunity from its mother through the placenta. One can also get passive immunity through antibody-containing blood products such as immune globulin.
- The major advantage of passive immunity is that protection is immediate, whereas active immunity takes time to develop. However, passive immunity lasts only for a few weeks or months. Only active immunity is long-lasting.
- **Hybrid immunity** is gained from a previous infection plus vaccines (primary or booster doses).




**Immune Imprinting**

- Immune imprinting is a tendency of the body to repeat its immune response based on the first variant it encountered either through infection or vaccination.
- Thus, the immune system, rather than generating new B cells, activates memory B cells, which in turn produce antibodies that bind to features found in both the old and new strains, known as cross-reactive antibodies.
- Although these cross-reactive antibodies do offer some protection against the new strain, they aren't as effective as the ones produced by the B cells when the body first came across the original virus.
- To counter Immune imprinting, scientist believe that nasal vaccines might be better at preventing infections than injected ones. They believe the mucous membranes would create stronger protection, despite carrying some imprint of past exposure.

**Implications of the Findings**

- It will help in reducing vaccine hesitancy.
- It will nudge countries to roll out booster vaccine drives in face of the ever-evolving covid virus.
- It will help people who are old or co-morbid in protection against the virus.

## ChatGpt

Recently, the independent research body OpenAI produced a conversational chatbot known as ChatGPT. The chatbot is trained to follow the instruction in a prompt and provide a detailed response. Users can simply feed in their query and the chatbot will reply to them.

**Generative AI**

**Chatbots**

These are form of Artificial Intelligence (AI) which operates either via machine learning or with set guidelines. A machine learning chatbot is based on artificial neural network inspired by the neural nodes of the human brain, as a chatbot receives new voice or textual dialogues, the number of inquiries that it can reply to and the accuracy of each response it gives increases.



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- In simple terms when Artificial Intelligence generates something on its own it is referred to as generative AI.
- It includes learning algorithms that make predictions as well as those that can use prompts to autonomously write articles and paint pictures.
- A generative AI requires:

  Generative Adversarial Networks (GANs): A Generative Adversarial Network (GAN) is a deep learning architecture that consists of two neural networks competing against each other in a zero-sum game framework. The goal of GANs is to generate new, synthetic data that resembles some known data distribution.

  - Variational Autoencoders (VAEs): It encodes data into a low-dimensional representation thereby capturing key features. Then the model decodes the low-dimensional representation back into the original data. This encoding and decoding produce a compact representation of the data distribution, which it can then use to generate new outputs.
- Generative AI also uses random noise as input to generate new outputs. This new data is used as additional, synthetic training data for creative applications in art, music, and text generation.

**Generative vs Discriminative AI**

Discriminative AI is one under which decisions are based on boundaries such as color, weight, etc. Then the algorithm compares the pattern and based on probability gives an answer. Generative AI on the other hand draws model in n-dimensional plane, therefore each object carries its own points and then the algorithm compares the probability curve to derive to a conclusion.

For e.g. If both AI are given apple and banana as data feed. Then Discriminative AI will decide based on the features, while Generative AI will draw an apple and banana and based on its drawing gives decision.

Generative AI is better than Discriminative AI as it requires less data feedback and produces more accurate result as it has less data outliers.

**Ethical Challenges due to Generative AI**

- **Accountability Issues**: Generative AI can produce outputs that are difficult to trace back to the responsible parties, make it challenging to hold individuals or organizations accountable for fake news or deepfake videos generated by AI.
- **High Risk of fraud:**The quick spread of misinformation and fraud is one more risk. It can be frequently be used for malicious or criminal purposes.
- **Envrionment Unfriendly:**Generative AI like ChatGPT are based on huge machine learning parameters which require huge data centers which uses a lot of energy resulting in carbon emissions.
- **Baiseness:**Generative AI will carry an inherent biasness as the sources it is based on are inherently bias.

## Generative Pre-Trained Transformer

- Generative Pre-trained Transformer, is a neural network machine learning model trained using internet data to generate any type of text. It uses deep learning to produce human-like text
- GPT-3 on which ChatGPT is based has over 175 billion machine-learning parameters. Before it was Microsoft's Turing Natural Language Generation (NLG) model, which had 10 billion parameters.
- It uses both ***natural language generation*** and ***natural language processing*** to understand and generate natural human language text.

## About ChatGPT

- ✓ It is trained using Reinforcement Learning from Human Feedback (RLHF). Under this model, human AI trainers provided conversations in which they played both sides viz. user and AI assistant
- ✓ This is known as supervised fine-tuning. As a result, it can answer follow-up questions, admit its mistakes, challenge incorrect premises, and reject inappropriate requests.
- ✓ However, it is not free from errors or limitations such as
  - It sometimes writes plausible-sounding but incorrect or nonsensical answers.
  - It is often excessively verbose and overuses certain phrases.
  - The chatbot is sensitive to how the input is phrased.
  - Facts and Logic is missing

It's unable to understand Abstract relation-based queries.



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# Environment

## BIODIVERSITY AND ITS CONSERVATION

### UN deal to save oceans

On 4 March 2023, in New York City, the United Nations reached a historic agreement to protect the world's oceans and ensure that people across the globe can benefit from the high seas while safeguarding the marine life.

**What is High Seas Treaty?**

1. The agreement on High Seas Treaty was reached on 4 March 2023 at UN headquarters in New York. It has been under discussion since 2004.
2. The "exclusive economic zone," an area extending 200 nautical miles from the coast, is under the legal jurisdiction of coastal nations, but the proposed treaty would only apply to the international waters that constitute two-thirds of the world's oceans.

**How is ownership proved?**

1. The UNESCO 1970 declaration stated that, "The requesting Party shall furnish, at its expense, the documentation and other evidence necessary to establish its claim for recovery and return."
2. The first thing in order to prove the ownership is the complaint (FIR) filed with the police. In India, the problem with missing antiquities is that in many cases, there is no FIR.
3. But other proof, like details mentioned by reputed scholars in research papers etc., also works. would only apply to the international waters that constitute two-thirds of the world's oceans.
4. The negotiations had been going on for decades, partly due to disagreements about funding, fishing, and mineral rights.
5. If ratified the treaty would put at least **30% of the world's seas into Marine Protected Areas.** It would also help in contributing more money to the conservation of marine life. Moreover, the agreement would create fresh rules for seafloor mining.
6. High Seas Treaty will replace the previous UN ocean treaty, named the UN Convention on the Law of the Sea which was signed in 1982.
7. At the time, the treaty had established the "high seas", which are the international waters that are open to fishing, shipping, and research by the world.

**Vermin**

- Since 1972, the WLPA has identified a few species like fruit bats, common crows and rats etc. as vermin or nuisance animals that spread diseases or destroy crops and are not protected under the act and theymay be hunted freely.
- **Vermin are** placed in **Schedule V and** animals which are placed in the **Schedule I and II** can not bedeclared as **Vermin.**
- Killing animals outside this list was allowed under two circumstances:
- Under Section 62 of WLPA- given sufficient reasons any species (other than liste schedule I and II) can be declared vermin at a certain place for a certain time.
- Under Section 11 of WLPA- the chief wildlife warden can allow the killing of an animal irrespective of its status in the Schedules if it becomes dangerous to human life.
- In recent years the Centre has started using its powers under Section 62 declaring species as verminat even state levels often without any credible scientific assessment.
- For example, Nilgais were declared as vermin across 20 districts in Bihar for a year in 2015.

### Wildlife protection amendment act

Recently The Wild Life (Protection) Amendment Bill, 2022 was passed in the parliament. India is a signatory to the CITES that required certain legislative actions.

**Pre-Connect**

- India is the first country in the world to make provisions for the protection and conservation of environment in its constitution.
- The provisions for environmental protection in the constitution were made through the 42nd amendment act which introduced-
  - **Article 48A**- The state shall endeavour to protect and improve the environment and to safeguard forest and wildlife of the country.
  - **Article 51A(g)**- It shall be duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife an to have compassion for living creatures.

## Wild Life (Protection) Act of 1972

- The WLPA provided the basic framework for ensuring the protection and management of wildlife.
- The passing of the act was an important landmark since forest (including wildlife) was then a State subject under Seventh Schedule and Parliament had no power to make law on the same except as provided in Articles 249,250 and 252 of the constitution.



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- The rating of the Schedules I to V is in accordance with the risk of survival and animals included in them are protected from hunting and their trade being strictly regulated.

**Features of New Amendments**

- ✓ Act seeks to strengthen the protection of endangered species and enhance punishment for illegal wildlife trade while increasing the species protected under the law and implementing the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) more effectively.
- ✓ Implement CITES provisions- Under CITES plant and animal specimens are classified into three categories based on the threat to their extinction and it seeks to regulate the trade of all listed specimens and possession of live animal specimens.
- ✓ Rationalising schedules- **The earlier act had six schedules and the amendment reduces the number to four by reducing schedules for specially protected animals and vermin species**. It inserted a new schedule for specimens listed in the Appendices under CITES.
- ✓ Obligations under CITES- The act provides for the central government to designate a
  - Management Authority- It will grant export or import permits for trade of specimens.
  - Scientific Authority- It will give advice on aspects related to impact on the survival of the specimens being traded.
- ✓ Invasive alien species (IAS)- IAS refers to plant or animal species which are not native to India and whose introduction may adversely impact wild life or its habitat. The act empowers the central government to regulate the trade, possession or reproduction etc. of IAS.

**Elephants**

- ❖ The legal dilemma over the elephant's status which is an endangered species and a domestic animal has persisted for long.
- ❖ In 1897, the Elephants' Preservation Act prohibited the killing or capture of wild elephants, in 1927, the Indian Forest Act listed the elephant as cattle. The WLPA identified the elephant as a vehicle.
- ❖ The elephant is the only animal in WLPA Schedule-I that can still be owned legally by means of inheritance or gift.
- ❖ In 2003, Section 43 of the WLPA prohibited trade in all captive wildlife and the WLPA (Amendment) Bill 2021 proposed an exception to Section 43 making it inapplicable to the transfer of any live elephant when permission is granted from the State Government.
- ❖ However, the government modified the exemption to allow the transfer of a captive elephant for a religious or any other purpose.
- ❖ Critics point out that scope of "any other purpose" will empower elephant traders and increase the risk of their capture.
- ❖ Allowing owners to transfer their elephants legally to those willing to and capable of looking after the animals is a welcome step.

- ✓ Control of sanctuaries- The Act entrusts the chief wild life warden who is appointed by the state government to control, manage and maintain all sanctuaries in a state. For sanctuaries falling under special areas (scheduled area) the management plan must be prepared after due consultation with the concerned Gram Sabha.
- ✓ Conservation reserves- Central and State governments and may declare areas next to national parks and sanctuaries as a conservation reserve.
- ✓ Surrender of captive animals- Any person can voluntarily surrender any captive animals or animal products to the Chief Wild Life Warden for which no compensation will be paid.
- ✓ Penalties- Act increases the fines-

| Type of Violation | 1972 Act | 2022 Act |
|---|---|---|
| General violation | Up to Rs 25,000 | Up to Rs 1,00,000 |
| Specially protected animals | At least Rs 10,000 | At least Rs 25,000 |

**Significance**

- The Act seeks to increase the species protected under the law and implement the CITES.
- Many captive elephants suffer when their owners fail to bear the expenses of their upkeep which increased in the post-Covid scenario. Thus allowing such owners to transfer their elephants legally to those willing to and capable of looking after the animals is a welcome step.
- **The Act regulates** the protection of wild animals, birds and plants while i**ncrease the species protected under the law.**
- The recent amendment has taken a progressive step to improve the participation of forest dwellers within national parks while determining the management plan.
- **It has mandated the need to consult the Gram Sabha** in protected areas falling under scheduled areas.



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## India first dark sky reserve

**INDIA'S FIRST 'DARK SKY RESERVE': India** will establish the **country's first Dark Sky Reserve** in the **cold desert regions of Ladakh**, Dr Jitendra Singh, Minister of State (Independent charge) for Science and Technology, announced on 3 September 2022. This facility will also **promote astronomy-tourism.**

**What is a Dark Sky Reserve?**

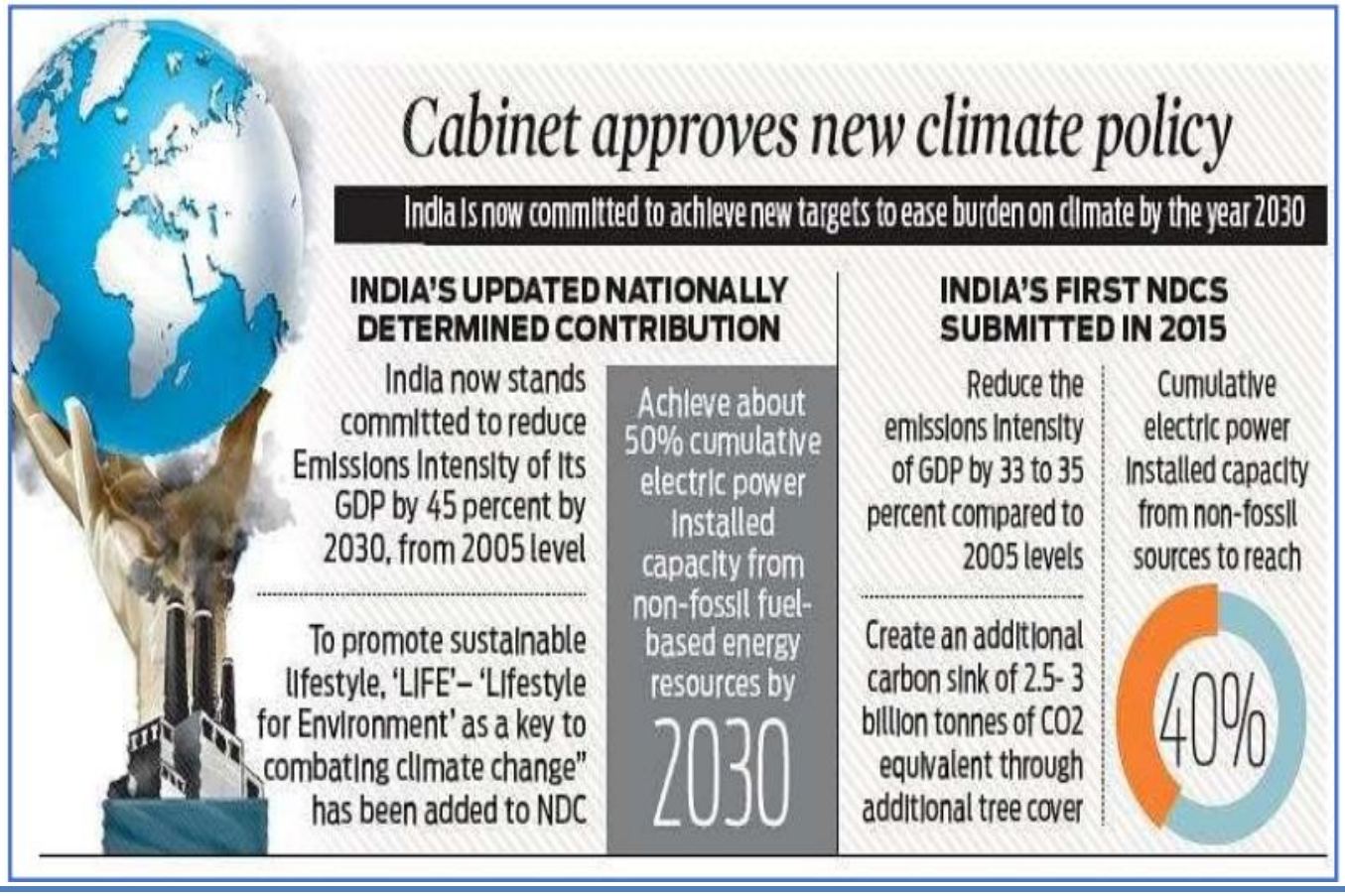
1. A **Dark Sky Reserve** is public or private land with a **distinguished nocturnal environment** and **starry nights** that has been developed responsibly to prevent **light pollution**.
2. According to the **International Dark Sky Association (IDSA)**, these reserves "consist of a **core area meeting minimum criteria for sky quality** and natural darkness, and a peripheral area that supports **dark sky preservation** in the core.
3. These reserves are formed through a "**partnership of multiple land managers** who have recognized the value of the natural night time environment through regulations and long term planning.
4. Individual groups can nominate a site for certification to the international dark sky association. There are five designated categories namely **international dark sky parks, communities, reserves, sanctuaries and urban night sky places**.
5. The certification process is similar to that of a site being awarded the **UNESCO World Heritage Site tag** or getting recognised as a **Biosphere Reserve**.
6. Between 2001 and January 2022, there have been **195 sites** recognised as **International Dark Sky Places** globally.

# CLIMATE CHANGE

## India Updated climate pledge

**India updates climate pledges**: India's updated climate pledge to the Paris Agreement has been ranked fifth in compliance and fourth in ambition by a new study. European Union (EU) took the lead while the United States was ranked last in compliance and second to last in ambition.

- To put forward and further propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation, including through a mass movement for **'LIFE'- 'Lifestyle for Environment'** as a key to combating climate change.
- To adopt a climate friendly and a cleaner path than the one followed hitherto by others at corresponding level of economic development.



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- To reduce Emissions Intensity of its **GDP by 45 percent by 2030, from 2005 level**.
- To achieve about recent cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030, with the help of transfer of technology and low-cost international finance including from Green Climate Fund (GCF).
- To create an **additional carbon sink of 2.5 to 3 billion tonnes of $CO_2$** equivalent through additional forest and tree cover by 2030.
- To better adapt to climate change by enhancing investments in development programmes in sectors vulnerable to climate change, particularly agriculture, water resources, Himalayan region, coastal regions, health and disaster management.
- To mobilize domestic and new & additional funds from developed countries to implement the above mitigation and adaptation actions in view of the resource required and the resource gap.
- To build capacities, create domestic framework and international architecture for quick diffusion of cutting edge climate technology in India and for joint collaborative R&D for such future technologies.

## Mangrove alliance for climate

**India** on 8 November 2022 joined the **Mangrove Alliance for Climate (MAC)** at the **27th Summit of the Conference of Parties (COP27)** at Sharm el-Sheikh in Egypt. UAE, Indonesia, Australia, Japan, Spain and Sri Lanka are the other MAC supporters. The **mangroves can absorb four to five times more carbon emissions** than the tropical forests and can help create new carbon sinks.

What are mangrove forests?

1. A **mangrove is a shrub or a small tree** that grows along the **coastlines** and has roots in **salty sediments**, often **underwater**.
2. They also grow in swamps. **Mangrove forests** can **survive extreme weather conditions** and require low oxygen levels to survive.
3. **The mangroves cannot survive freezing temperatures** and thus are found mainly in **tropical and subtropicallatitudes**. **Sundarbans in West Bengal in India** is the largest mangrove forest in the world.
4. UNESCO celebrates **26 July as the International Day for the Conservation of the Mangrove Ecosystem** to raise awareness about mangrove ecosystems and to promote their conservation.

What is the Mangrove Alliance for Climate (MAC)?

1. Spearheaded by the **United Arab Emirates (UAE)** in partnership with Indonesia, **MAC was launched at the COP27 Summit in Egypt** to scale up and accelerate the conservation and restoration of the mangrove forests.
2. The alliance will raise awareness about the role of mangroves as a "**nature-based solution to climate change**".

   The MAC seeks to **scale up**, **accelerate conservation**, **restoration and growing plantation efforts of mangrove ecosystems** for the benefit of communities globally, and **recognize the importance of these ecosystems** for climate change mitigation and adaptation," MAC's official website said about its aim.

## Bio energy program

**The Ministry of New & Renewable Energy** said it will continue **National Bio Energy Programme** till 2025-26 with a budget outlay of **Rs 858 crore for the first phase**. The programme will aid the use of **huge surplus biomass**, **cattle dung**, and industrial and **urban biowaste** available in the country for energy recovery.

What

1. The **Ministry of New and Renewable Energy (MNRE)** has notified the **National Bioenergy Programme** on 2 November 2022, an MNRE statement said.
2. The MNRE has continued the **National Bioenergy Programme** for **2021-22 to 2025-26**. The programme was recommended for implementation in **two Phases**. Phase-I has been approved with a **budget outlay of Rs 858 crore**.
3. The **National Bioenergy Programme** will include the **three Sub-schemes**: **Waste to Energy Programme**, **Biomass Programme** and **Biogas Programme**.
4. The **Waste to Energy Programme** (Programme on Energy from Urban, Industrial and Agricultural Wastes /Residues) will support the setting up of **large Biogas**, **BioCNG** and **Power plants** (excluding MSW (municipal solid waste) to power projects).
5. **Biomass Programme** (Scheme to Support Manufacturing of Briquettes & Pellets and Promotion of Biomass (non-bagasse) based cogeneration in Industries) will support the setting up of **pellets and briquettes** for use in power generation and non-bagasse-based power generation projects.
6. The **biogas programme** will also support the **setting up of family and medium size Biogas** in rural areas.
7. The MNRE has been **promoting bioenergy in India since the 1980s** to utilise huge **surplus biomass**, **cattle dung**, and industrial and urban biowaste available in the country for the recovery of energy.

   One major support extended by the MNRE has been **central financial assistance** provided for **setting up Bioenergy projects**, such as Biogas, BioCNG, power from urban, Industrial and Agricultural Waste / Residues for reducing their capital cost/ interest on loans, therefore, increasing project viability.



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## Arctic Fires

- The area above the Arctic circle heats four times faster than the rest of the planet and it is this climate amplification that causes abnormal fire activity.
- The annual mean temperature of the Arctic has increased by more than two degrees Celsius (°C) compared to that of the pre-industrial levels.
- The forest fire burned down around 4.7 million hectares (mha) of the Arctic in 2019 and 2020 and the carbon emissions from burning were estimated to be around 146 million tonnes of carbon in just two years (2019 and 2020).
- The rise in temperatures in the region may lead to the recurrence of large fires in the Arctic region.
- The fires triggered in Arctic forests by rising temperatures, in turn, caused by global warming can lead the world deeper into crisis. They can release large amounts of carbon dioxide and methane from thawing permafrost peat lands, thus defeating climate goals

**Arctic Indigenous People** Saami in circumpolar areas of Finland, Sweden, Norway, and Northwest Russia, Nenets, Khanty, Evenk, and Chukchi in Russia, Aleut, Yupik, and Inuit in Alaska, Inuit (Inuvialuit) in Canada and Inuit (Kalaallit) in Greenland.

**Reasons for forest fires in the Arctic region**

- Wildfires are common in the Arctic and Subarctic, their size, frequency, and intensity may increase as the climate warms, giving rise to more extreme weather.
- The researchers have investigated around 10 factors associated with the likelihood of fire. **They are- air and surface temperature, total precipitation, wind speed and direction, vapor-pressure deficit, length of the growing season, mean normalized difference vegetation index, climatic water deficit, and the number of ignitions**, a direct factor associated with the likelihood of fires.
  - Also, there is a relationship between higher temperatures, longer growing seasons, and greener vegetation leading to fires. The higher temperatures account for the earlier snowmelt, permitting vegetation growth and increased green biomass, which increases fuel availability.
- Lightning is infrequent at high latitudes; it is expected to increase as the climate warms. Hence Global warming poses a dual threat in the Arctic increasing the susceptibility of peatlands and vegetation to fires and increase in the number of lightning-caused ignitions.

## Food waste and climate change

Every year, the world throws away around 931 million tons of food, most of it ending up in landfills this is creating a big Climate problem.

- Food waste is a waste of resources, time, and money. Food waste means
  all of the environmental impacts of food production without any of the benefits of people being fed.
- A throwaway food when it
  Decomposes and produces
  around a tenth of the world's climate-warming gases, according to the United Nations.
- Estimates suggest that 8-10% of global greenhouse gas emissions are associated with food that is not consumed.
- Nations around the globe pledged in 2015 to halve food waste by 2030, but few are on track to do so.
- Among the top five biggest food wasters per capita, at least three of the United States, Australia, and New Zealand have increased their food waste since 2015.
- The average American wastes more than 700 calories of food per day – about a third of recommended daily intake according to a 2020 study.
- 7% of all food available at consumer levels was wasted in 2019 according to the report by the Food Waste Index.
- In India, an average person wastes 137 grams of food every single day. According to estimates, food wastage cost around Rs

**Food Waste Index**

- It is produced jointly by the United Nations Environment Programme (UNEP) and WRAP. It seeks to support efforts to halve food waste by 2030. It aims at supporting the goals of SDG 12.3.
- Key Highlights of 2021 Report are:
  - The report estimates that around 931 million tonnes of food waste was generated in 2019, 61 per cent of which came from households, 26 per cent from food service and 13 per cent from retail.
  - Household per capita food waste generation is found to be broadly similar across country income groups, suggesting that action on food waste is equally relevant in high, upper-middle and lower-middle income countries.
  - Previous estimates of consumer food waste significantly underestimated its scale. While data doesn't permit a robust comparison across time, food waste at consumer level (household and food service) appears to be more than twice the previous FAO estimate.



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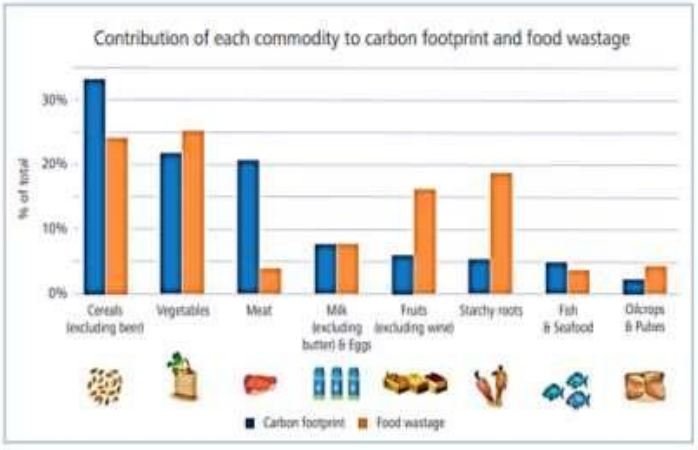
92,000 crores a year. How Food Waste Impacts Climate Change

- According to UN, Globally, around 14 percent of food produced is lost between harvest and retail, while an estimated 17 percent of total global food production is wasted (11 percent in households, 5 percent in the food service and 2 percent in retail).
- The greenhouse gases (GHG) from the food industry account for 25 to 30% of the total emissions that have led to today's climate crisis.
- According to a report by the intergovernmental Panel on Climate Change (IPCC) the loss and waste of food caused between 8 and 10% of emissions of the gases responsible for global warming in the period 2010- 2016.




**Effects of Food Waste**

- ✓ **Biodiversity loss:** To maximize agricultural yields, farmers have increasingly invaded wild areas in search of more fertile lands which has led to the loss of biodiversity.
- ✓ **Blue water footprint:** If 30 percent of all the food produced goes to waste, then it means that more than 30 percent of freshwater used in the production and processing of food also goes to waste.
- ✓ **Increased carbon footprint and the acceleration of climate change:** The food produced and then later goes to waste is estimated to be equivalent to 3.3 billion tons of greenhouse gas emission, accelerating the impacts of climate change. Food waste is the third biggest emitter of greenhouse gases.
- ✓ **Economic consequences:** According to FAO's report estimates, the economic losses associated with food wastage are about $750 billion per annum.

## Bill to mandate clean energy passed

**Lok Sabha** passed the **amendments to the Energy Conservation Act** aimed at putting in place provisions to make the **use of clean energy mandatory** and paves way for **setting of carbon markets** in the country. **The Energy Conservation (Amendment) Bill, 2022**, seeks to mandate use of **non-fossil sources**, including **biomass** and **ethanol** for energy and feedstock along with the use of **green hydrogen** and **green ammonia**.

### More about the bill

1. It also proposes to **enhance the scope of Energy Conservation Building Code** and bring large residential buildings within the ambit of energy conservation regime.
2. The **Energy Conservation Act, 2001** was last amended in the year 2010 to address various new factors which emerged with the development of the energy market over a period of time and to provide for **more efficient and effective use of energy** and its conservation.
3. The **context of energy transition** with special focus

**What are carbon markets?**

1. The **creation of a domestic carbon market** is one of the most significant provisions of the proposed amendment Bill. **Carbon markets** allow the **trade of carbon credits** with the overall objective of bringing down emissions.
2. **Under the Kyoto Protocol**, the **predecessor to the Paris Agreement**, carbon markets have worked at the international level as well. The **Kyoto Protocol** had prescribed emission reduction targets for a group of developed countries.
3. Globally, **68 carbon pricing instruments (CPIs)**, covering 23% of the GHG emission, are operational.
4. The roll-out in India is expected to happen in **three phases**, leveraging the existing infrastructure and building on the learning from the **Perform Achieve and Trade (PAT)** scheme and the global experience in this sphere.



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on promotion of new and renewable energy and **National Green Hydrogen Mission**, a need has arisen to further amend the said Act to facilitate climate targets committed at **COP26 summit**, promote renewable energy and **development of domestic carbon market** to battle climate change.

4. It mandates **use of non-fossil sources** to ensure **faster decarbonization** of Indian economy and help in **achieving sustainable development goals** in line with the **Paris Agreement**.

The bill would also **empower state governments** to make rules regarding fees to be levied for the services rendered by the designated agency for promoting **efficient use of energy** and its conservation along with the preparation of the budget of the designated agency.

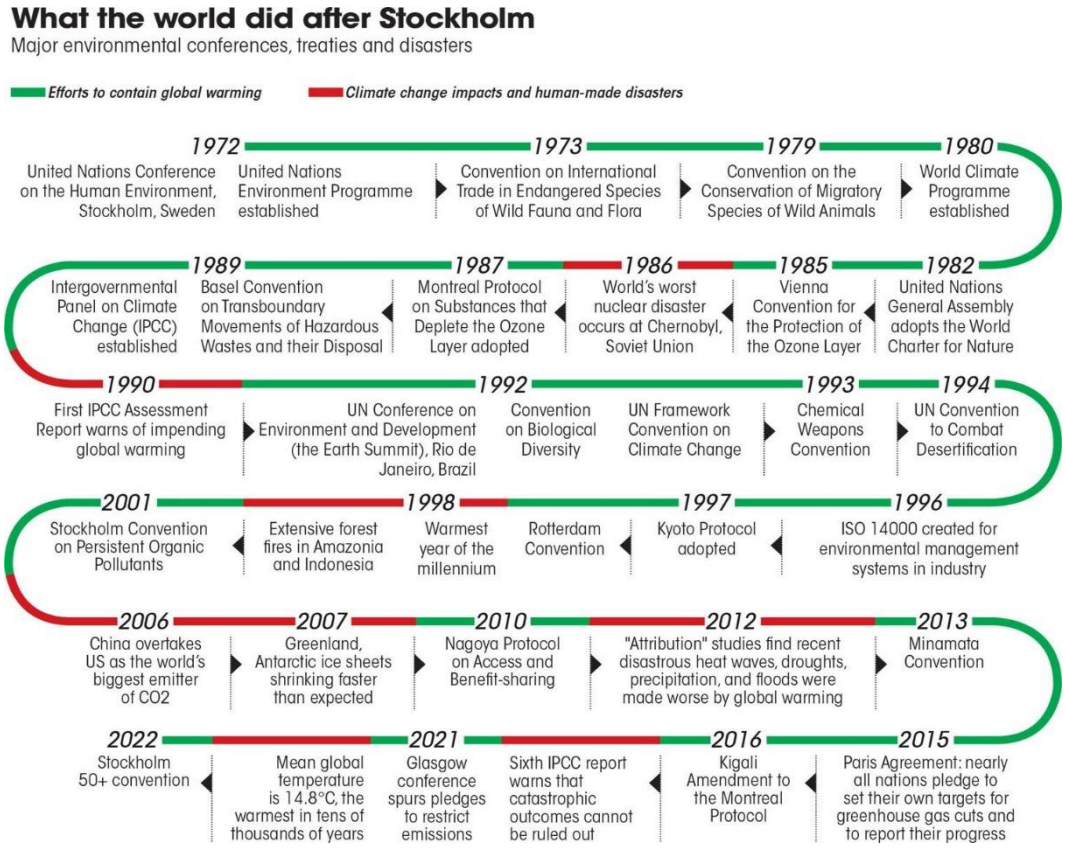
# INTERNATIONAL CONFERENCE AND MEETINGS

## Stockholm +50 meeting

Recently, The two-day Stockholm+50 meet is convened by the United Nations General Assembly in Stockholm to commemorate 50 years since 1972. The Stockholm conference made the environment a pressing global issue.

**Pre-Connect**

- Sweden will host Stockholm+50, with the support of Kenya. It will be during the same week as World Environment Day, which is held on 5 June each year and is also a result of the 1972 event.
- To commemorate the 50 years since the 1972 United Nations Conference on the Human Environment, which made the environment a pressing global issue for the first time, around 122 countries attended, and participants adopted a series of principles on the environment, including the Stockholm Declaration and Action Plan for the Human Environment.




- The United Nations Environment Programme was created as a result of this conference, UNEP is a global body that has been working for environmental protection across the world and the UN Framework Convention on Climate Change (UNFCCC).
- The then Indian Prime Minister Indira Gandhi had attended the 1972 conference and called for global collective action to save the environment.

**About Stockholm+50**

- Stockholm+50 will be collaborative and multi-stakeholder in nature, open to all participants who will be invited to share experiences and initiatives to protect the planet and contribute to sustainable and inclusive development, including a sustainable recovery from the COVID

-19 pandemic.

- Firstly, the open architecture of engagement at Stockholm+50 was unique and allowed the global community to make their voices and views known.
- his response to a demand for action and co-created outcomes allowed for truly inclusive multi-stakeholder engagement and a sense of partnership.



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**India and Stockholm+50**

- India pitches for circularity as Stockholm+50 opens with calls to accelerate action for healthy planet and prosperity for all.
- India advocated the concept of LIFE, that is, lifestyle for the environment, as an approach to combating climate change.
- It promotes mindful consumption, reduction of waste and promotion of resource efficiency and circular economy

# Centre NDC climate target

## UNFCCC cop 27

At the Sharm el-Sheikh Climate Change Conference (COP 27), countries came together to take action towards achieving the world's collective climate goals as agreed under the Paris Agreement and the Convention. The conference took place from 6-20 November 2022 in Sharm el-Sheikh, Egypt.

**Climate finance**

**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 and adaptation actions that will address climate change.
- Climate finance is needed for mitigation, because large-scale investments are required to significantly reduce emissions.
- Climate finance is equally important for adaptation, as significant financial resources are needed to adapt to the adverse effects and reduce the impacts of a changing climate.

**Financial mechanism**

To facilitate the provision of climate finance, the UNFCCC established a financial mechanism to provide financial resources to developing country Parties. The financial mechanism also serves the Kyoto Protocol and the Paris Agreement.

- The Convention states that the operation of the financial mechanism can be entrusted to one or more existing international entities.
- The Global Environment Facility (GEF) has served as an operating entity of the financial mechanism since the Convention's entry into force in 1994.
- At COP 16, in 2010, Parties established the **Green Climate Fund (GCF**) and in 2011 also designated it as an operating entity of the financial mechanism.
- Parties have established two special funds-the **Special Climate Change Fund** (SCCF) and the **Least Developed Countries Fund (LDCF**), both managed by the GEF-and the **Adaptation Fund (AF)** established under the Kyoto Protocol in 2001.

**Finance at COP 27**

- **Loss and damage fund:** The UN climate summit has decided to establish fund for loss and damage, which was proposed by G77 and China (India is a part of this group), least developed countries and small island states.
- **Carbon border Tax :** The Carbon Border Adjustment Mechanism is a plan from the European Union (EU) to tax carbon-intensive products **which was opposed by the BASIC group**, comprising India, China, Brazil and South Africa at COP 27.

**Key institutions and technology mechanism**

In 2010 the COP established the Technology Mechanism with the objective of accelerating and enhancing climate technology development and transfer. It consists of two complementary bodies that work together, - the Technology Executive Committee (TEC) and the Climate Technology Centre and Network (CTCN). The mechanism will also serve the Paris Agreement.

- **TEC:** It is the Technology Mechanism's policy arm and analyses policy issues and provides recommendations to support countries in enhancing climate technology efforts.
- **CTCN:** It is the mechanism's implementation arm and it supports countries to enhance the implementation of climate technology projects and programmes. It has three core services:
    - Providing technical assistance to developing countries.
    - Creating access to knowledge on climate technologies.
    - Fostering collaboration among climate technology stakeholders.

**Action for climate empowerment (ACE) and gender**

**About ACE**

- COP27 and CMA4 (Parties to the Paris Agreement) adopted a four-year ACE action plan under the Glasgow work programme, which sets out short-term, clear and time- bound activities in the four priority areas of the work programme.
- It is the term adopted by the UN Framework Convention on Climate Change to denote work under Article 6 of the Convention and Article 12 of the Paris Agreement.

The over-arching goal of ACE is to empower all members of society to engage in climate action, through the six ACE elements.



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## Cites Cop 19

Recently, the Conference of Parties (COP-19) to The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was held in Panama.

**Key Highlights of the Conference**

- In total 52 proposals were put forward and these proposals dealt with the international trade of- sharks, hippos, 200 tree species, etc.
- Parties were asked to remove the references to pangolins from **'official pharmacopeia'** (It is a book containing a list of medicinal drugs with their uses, preparation, dosages, and formulas) to help save the species.
- The conference listed **sea cucumbers as 'threatened' (to include in Appendix II)**. Sea cucumbers perform the same role on the seabed that earthworms perform on land. As per the Wildlife Conservation Society report, sea cucumbers were the most frequently trafficked marine species in India from 2015-2021.
- The conference decided to regulate **Shark Fin.** Shark fin soup is very popular in China and other South-East Asian countries. The countries have voted to include 54 species of requiem sharks, six species of hammerheads, and 37 guitarfish in CITES Appendix II.
- Parties agreed to work together to support Mexico in its fight to save the world's most endangered marine mammal, **the vaquita porpoise.**

**Indian Pangolin**

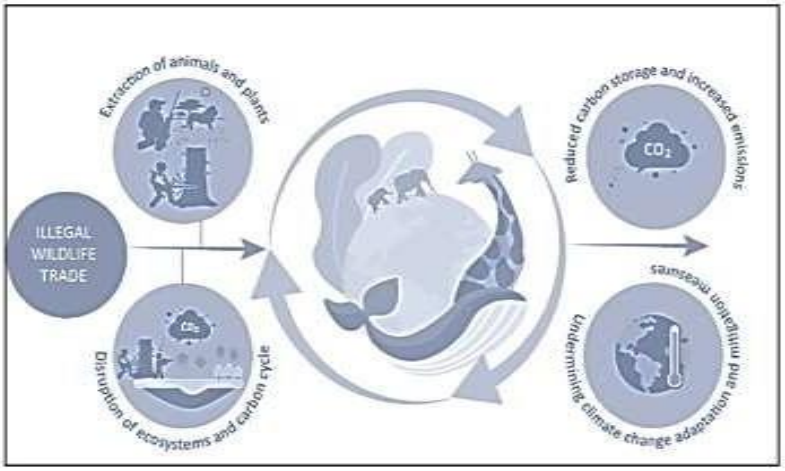
It is widely distributed in India, except the arid region, high Himalayas and the North-East. The species also occurs in Bangladesh, Pakistan, Nepal and Sri Lanka. Major threats to pangolins in India are hunting and poaching for local consumptive use. It is listed in Schedule I of Wildlife (Protection) Act, 1972 and as Endangered on IUCN Red List.

**Big Cat Task Force**

The CITES COP19 has proposed budget of $150,000 for Big Cat Task Force: It will curb illegal trade in big cats like lions, tigers, leopards, cheetahs etc. The Task force will include China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, Thailand, USA and Vietnam as the key Parties to tackle the illegaltrade in illegal trade in Asian big cat specimens.

### Illegal Wildlife Trade and Climate Change

- Illegal wildlife trade (IWT) is a leading threat to global biodiversity, endangering many thousands of species of terrestrial and marine flora, fauna, and fungi all over the world.
- IWT undermines the functioning of ecosystems, with significant potential to harm related natural processes, including those affecting climate.
- IWT reduces populations of species such as hardwood trees, which directly and indirectly sequester and store carbon.
- IWT impacts the role of "ecosystem engineers", species that shape fundamental physical processes that are especially important to the long-term storage and persistence of carbon stocks.




- IWT affects species that have unique functional traits, such as pangolins and some predators, meaning that they serve roles in their ecosystems that few other species provide. This uniqueness means that, when populations of these species are impacted, related ecosystem services are likely to be undermined.
- IWT targets species that are often geographically co-located in habitats that provide multiple ecosystem goods and services, including carbon stocks. Moreover, sites affected by IWT are often also impacted by other human activities such as habitat degradation that harm carbon stocks.



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- Parties resolved to work on **building gender equality** into the international trade in wildlife, recognizing that women are often guardians of wildlife and biodiversity but, just as often, are not recognized or benefit from this trade.
- Parties resolved to **recognize and investigate ways in which CITES** can contribute to mitigating the risk of zoonotic pathogen spillover and transmission from wildlife trade and associated wildlife supply chains, including markets.
- **World Wildlife Trade Report** was launched at the conference. According to the report, international wildlife trade is worth more than **$200 billion annually to the world economy**. It highlighted the fact that Humans use the resources that come from nature for food, fuel, medicine, and shelter. Therefore all stakeholders should invest in wildlife conservation.

**India at the Conference**

- India is a CITES Party since 1976.
- At India's behest, rules for the export of Shisham (Dalbergia sissoo) based products eased. Shisham (Dalbergia sissoo) is included in Appendix II of the convention. Therefore, as per CITES regulations, every consignment of weight above 10 kg requires a CITES permit. This resulted in a loss of export earnings for Indian handicrafts. Now in the 10kg consideration, weight of the log will be calculated and the weight of the metal will be ignored.
- The two Indian turtles **red-crowned roofed turtle (Batagur Kachuga) & Leith's soft- shell turtle** which are facing a high risk of extinction added to the list of threatened species. They are threatened due to habitat loss, illegal trade, and poaching.
- India's **Operation Turtshield** got appreciation and India also highlighted that it has included many species of turtle under its **Wildlife Protection Act 1972** and they were given a high degree of protection.
- India decided not to vote against a proposal to re-open the international trade in ivory at the ongoing conference.
- In India, a large number of marine wildlife seizures happen in the following states Tamil Nadu>Maharashtra>Lakshdweep>Karnataka

## UN biodiversity Conference (Cop 15)

The 15th Conference of the Parties (COP15) to the Convention on Biological Diversity took place in Montreal Canada. The UN biodiversity conference aims to lay out a plan to tackle the 'unsustainable rate' of global biodiversity loss.

**The Living Planet Report:** It's a flagship publication of the **World Wildlife Fund.** It is a comprehensive study of trends in global biodiversity and the healthof the planet. It revealed an average decline of 69% in species populations since 1970.

**Convention on Biological Diversity (CBD)**

- It was signed at the United Nations Conference on Environment and Development (the Rio "Earth Summit").
- It is the international legal instrument for the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.
- It has been ratified by 196 nations.
- The Secretariat of the Convention on Biological Diversity (SCBD) is based in Montreal, Canada.

**Biodiversity and Its Importance**

- It refers to the variety of life on Earth at all its levels, from genes to ecosystems, and can encompass the evolutionary, ecological, and cultural processes that sustain life.
- **Effect of Climate Change:** Climate change is playing an increasingly important role in the decline of biodiversity. In 2019, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services estimated that three-quarters of the world's land surface and 66 percent of its oceans had been significantly altered.

**The 15th Conference of the Parties (COP15)**

- ✓ The meeting was relocated to Montreal from Kunming China due to COVID-19 restrictions but it is still being presided over by China.
- ✓ The goal of the meeting is to help guide countries on how to protect biodiversity using the best methods.
- ✓ A draft of a new biodiversity framework released last year included around 21 targets to meet by 2030.
- ✓ It included reducing pesticide use, increasing funding to $200bn per year, and protecting at least 30 percent of land and sea globally.



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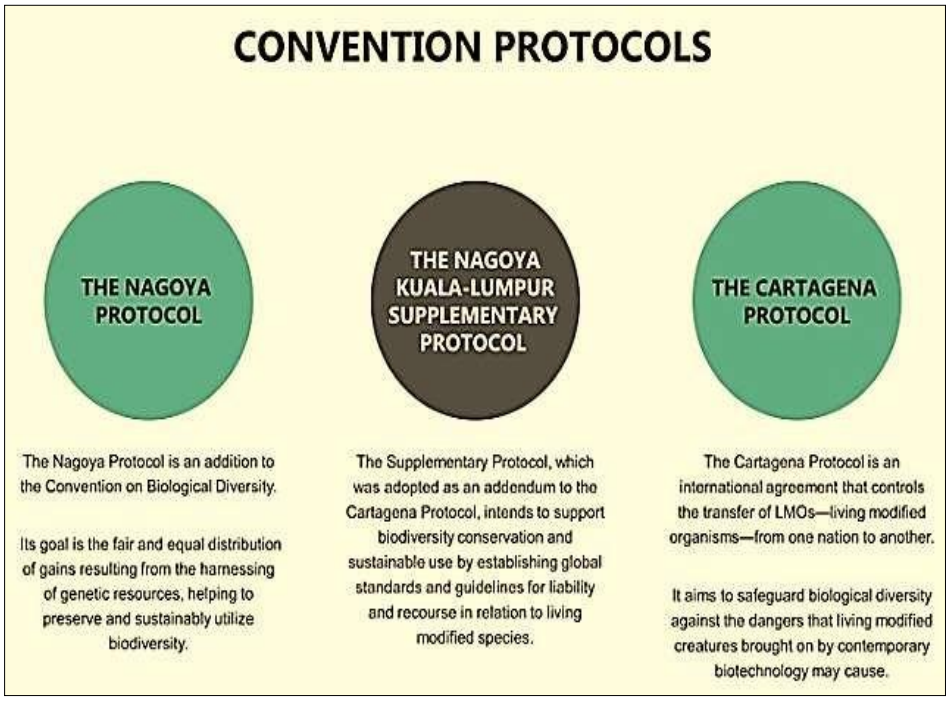
✓ It also included the 30×30 proposal which aims to protect and conserve at least 30 percent of land and ocean biodiversity by 2030 to avoid a crisis.

**Challenges**

- The major challenge will be getting a strong and ambitious document together.
- None of the Aichi Biodiversity Targets have been fully achieved. The implementation of targets is a matter of concern.
- **Funding:** Securing funding commitments and establishing implementation mechanisms for the agreed targets is a major concern. Greenpeace has urged richer countries to take a fair financial burden and help the Global South's areas at risk of destruction.
- More focus should be on the rights and sovereignty of Indigenous peoples, who live in the world's remaining biodiversity.
- Amnesty International urged caution about the 30×30 idea because such efforts in the past "have led to widespread evictions, hunger, ill-health, and human rights violations.




**India's Stand**

- India has participated in the Open-Ended Working Group (OEWG) on the Post-2020 Global Biodiversity Framework.
- According to India, this framework should help address the current biodiversity-related challenges and promote the three CBD objectives in an integrated manner.
- India wants to live in harmony with nature to be the overriding theme of the framework. India promotes restoration and the wise use of biodiversity which can conserve as well as deliver benefits to the people.
- India is advocating for other effective area-based conservation measures (OECM) instead of Protected Areas (PA) to meet 30x30.

# REPORTS AND RANKINGS

## Environment Performance Index

India has been placed at the bottom on a list of 180 countries, judged for their environmental performances by Yale and Columbia universities.

**Key Points**

- The EPI provides a data-driven summary of the state of sustainability around the world.
- Using 40 performance indicators across 11 issue categories, the EPI ranks 180 countries on climate change performance, environmental health, and ecosystem vitality.
- EPI indicators provide a way to spot problems, set targets, track trends, understand outcomes, and identify best policy practices.
- Overall EPI rankings indicate which countries are best addressing the environmental challenges that every nation faces.
- The lowest scores go to India (18.9), Myanmar (19.4), Vietnam (20.1), Bangladesh (23.1) and Pakistan (24.6).
- Most low-scoring countries are those that have prioritised economic growth over sustainability, or those that are struggling with civil unrest and other crises



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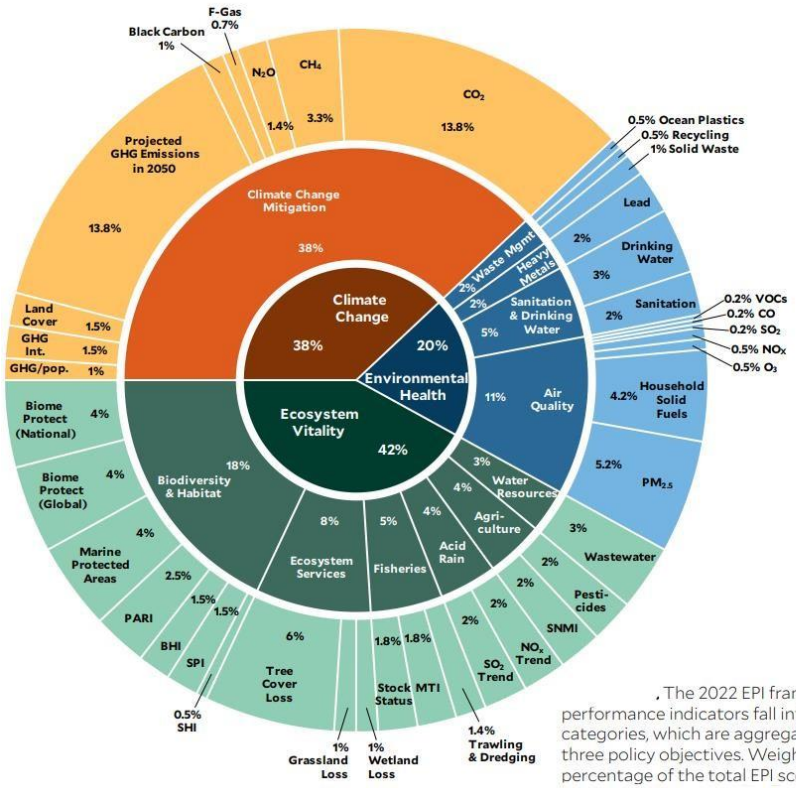
- EPI projections indicate that just four countries -- China, India, the US and Russia -- will account for over 50 per cent of residual global greenhouse gas emissions in 2050 if current trends hold.

**Report and India**

- India, with increasingly dangerous air quality and rapidly rising greenhouse gas emissions, falls to the bottom of rankings for the first time.
- The report stated that Many other nations are headed in the wrong direction, with rapidly rising greenhouse gas emissions in major countries like China, India and Russia.




, The 2022 EPI framework. 40 performance indicators fall into 11 issue categories, which are aggregated into three policy objectives. Weights show the percentage of the total EPI score.

**Significance**

- Good data and fact-based analysis can also help government officials refine their policy agendas, facilitate communications with key stakeholders, and maximize the return on environmental investments.
- The EPI offers a powerful policy tool in support of efforts to meet the targets of the UN Sustainable Development Goals and to move society toward a sustainable future.

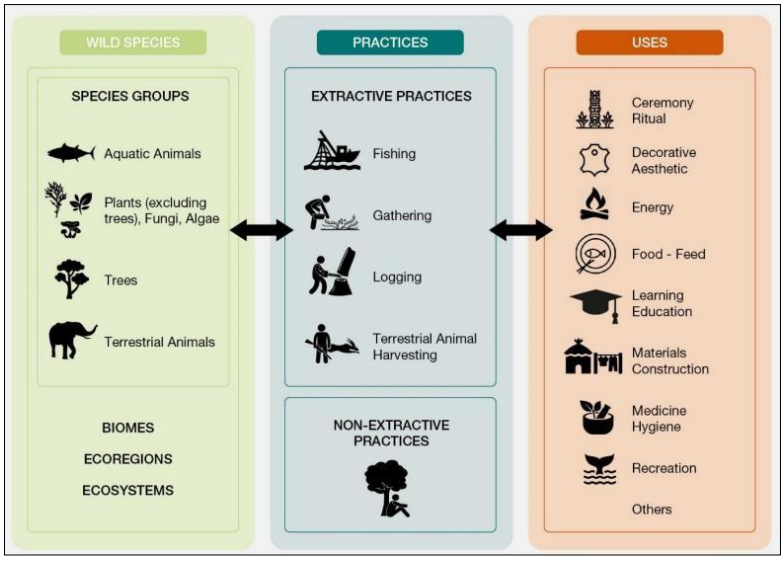
## IPBES report

A report released by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has stated that the sustainable use of wild species can meet the requirements of billions of people.

- The IPBES is an independent intergovernmental body, established by member States in 2012.
- Its secretariat is based in Bonn, Germany. All States Members of the United Nations are eligible for IPBES membership.
- India is a member of IPBES since 2012, and IPBES is not a UN body.
- The work of IPBES can be broadly grouped into four complementary areas:
  - Assessments, Policy Support, Building Capacity & Knowledge and Communications & Outreach

**Key Points of the report**

- The report mentioned that Global trade in wild species has expanded substantially in volume, value and trade networks over the past four decades.
- The report asserted that one in five people rely on wild plants, algae and fungi for their food and income; 2.4 billion rely on fuel wood for cooking and about 90% of the 120 million people working in capture fisheries are supported by small-scale fishing.
- Billions of people get benefits from the use of wild species for food, energy, materials, medicine, recreation, inspiration and many other vital contributions to human well-being.



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- The Report identifies five broad categories of 'practices' in the use of wild species: fishing; gathering; logging; terrestrial animal harvesting (including hunting); and non-extractive practices, such as observing.
- The report states that illegal trade in wild species represents the third largest class of all illegal trade – with estimated annual values of up to US$199 billion.
- The use of wild species defines identities and livelihoods and also holds cultural significance. Around 70% of the world's poor are directly dependent on wild species and businesses fostered by them.
- Many species have cultural importance as they offer multiple benefits that define tangible and intangible features of people's cultural heritage.
- The use of wild species by indigenous peoples and local communities, as well as their extensive knowledge, practices and beliefs about such uses, are also explored in the Report. Indigenous stewardship of biodiversity is often embedded in local knowledge, practices and spirituality.

## Groundwater distress in India

The Central Ground Water Board (CGWB)'s Monitored wells registered a decline in groundwater levels in the range of 0 – 2 m.

**Pre-Connect**

- CGWA is constituted under Section 3 of the Environment (Protection) Act, 1986.
- The Body is formed to regulate and control of groundwater development and management in the country.
- Presently, the Easement Act of 1882 provides every landowner with the right to collect and use groundwater or water under the land and on the surface.
- Water is mentioned under the State List of the Constitution. Therefore, the state legislative assemblies can make laws on the subject.

**State of Water in India**

- CGWB statistics show that the contribution of groundwater is nearly 62 per cent in irrigation, 85 percent in rural water supply and 50 percent in the urban water supply.
- According to government data,Five states -- Uttar Pradesh, R ajasthan, Bihar, Madhya Pradesh, and Kerala -- account for 49 percent of the overall extraction of groundwater in the entire country.
- The stage of groundwater extraction is very high in Delhi, Haryana, Punjab and Rajasthan. In these states, the annual groundwater consumption is more than annual extractable groundwater resources.
- In States like Himachal Pradesh, Tamil Nadu, Uttar Pradesh and UTs of
- Chandigarh and Puducherry, the stage of groundwater Extraction is between 70-100 percent.
- In 2021, As per CGWB ,Nearly one-sixth of India's 6,965 groundwater assessment units are 'over-exploited' and this along with two other categories of concern — 'critical' and 'semi-critical' — account for 35% of total assessed units.

**Major central level water institutions responsible for ground water management**

| Institution | Role |
|---|---|
| Central Water Commission | Initiating and coordinating schemes for the conservation and utilisation of water resources in the country in collaboration with state governments; and monitoring water quality |
| Central Ground Water Board | Developing and disseminating technology related to sustainable use of ground water; monitoring and implementing policies for the sustainable management of ground water resources; estimating ground water resources |
| Central Ground Water Authority | Constituted under Section 3(3) of the Environment (Protection) Act, 1986 to regulate and control development and management of ground water resources; can resort to penal actions and issue necessary regulatory directives |
| Central Pollution Control Board | Implementation of the Water (Prevention and Control of Pollution) Act, 1974 which seeks to restore water quality |

**Atal Bhujal Yojana**

- The Government is implementing Atal Bhujal Yojana (Atal Jal), a Rs. 6000 crore Central Sector Scheme with World Bank assistance.
- Government of India launched Jal Shakti Abhiyan (JSA) in 2019 in 256 water stressed districts in the country.
- 'Mukhyamantri Jal Abhiyan' in Swavlamban JalyuktShibar' in Rajasthan, Maharashtra,
- 'SujalamS ufalam Abhiyan' in Gujarat, 'Mission Kakatiya' in Telangana, NeeruChettu' in Andhra Pradesh, Jal Jeevan Hariyali in Bihar, 'Jal Hi Jeevan' in Haryana, and Kudimaramath scheme in Tamil Nadu etc.



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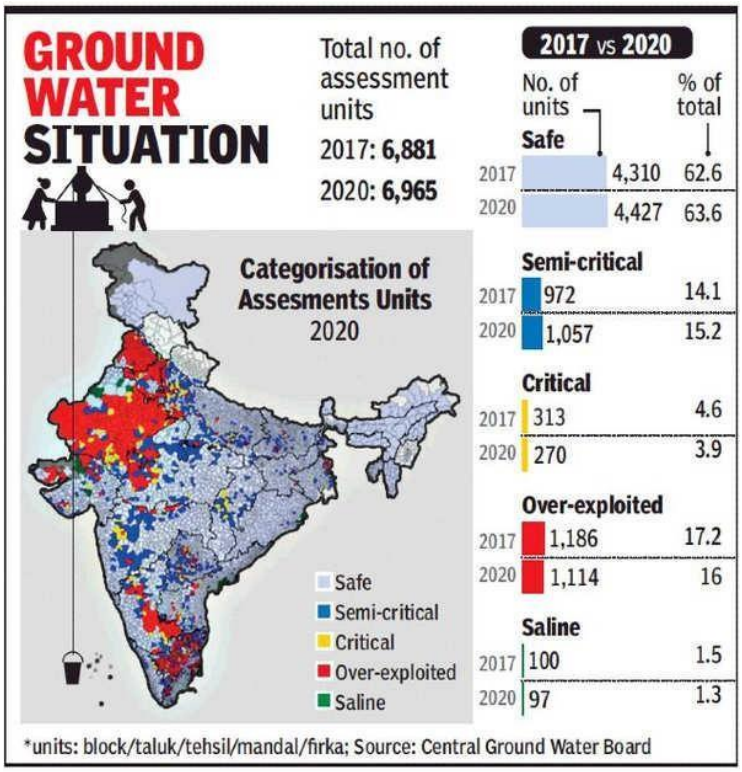
- According to the NITI Aayog's Composite Water Management Index (CWMI) 2018, 21 Indian cities could face Day Zero in the coming years.
- Day Zero refers to the day when a place is likely to have no drinking water of its own. Bengaluru, Chennai, Delhi and Hyderabad are among the most susceptible.




**Reasons for depleting groundwater**

- ✓ **Increased demand for freshwater:** The warmer temperatures, scorching summer and climate change encourage the use of groundwater. An increase in frequency affected the groundwater table adversely.
- ✓ **Industrialization:** Continuous pumping of water, discharge of industrial effluents, domestic sewage, use of fertilizers and pesticides, waste dump and over- exploitation of the resources have bad impact on groundwater sustainability.
- ✓ **Agricultural Subsidies:** Power subsidies encourage the farmer to exploit more volume of groundwater. Freebies in electricity also contribute to the depletion of groundwater. Moreover, the cultivation of water-intensive crops further makes the level of water on an alarming level.
- ✓ **Lack of replenishment:** Construction of hard surfaces on the earth retard percolation in the ground, erratic rainfall, and climate change are other factors that delay the replenishment of aquifers.
- ✓ **Urbanisation:** It is often believed that with the urban growth, the impermeabilization and ground sealing effect might contribute to a decrease in groundwater.

**Implications**

- **Food Security**: Groundwater is a critical resource for food security, groundwater depletion could result in a reduction in food crops.
- **Land Subsidence**: As underground water disappears from aquifers, drawn out excessively, the matter underneath becomes the sole entity for managing the load, and the land may suddenly or gradually sink, leading to a phenomenon known as land subsidence.
- **Water Distress:** lack of enough groundwater will promote drought-like conditions, as agricultural productivity will be undermined due to inadequate availability of water.
- **SDGs:** Groundwater is most explicitly linked to ensuring availability and sustainable management of water and sanitation for all' (Goal 6), Groundwater also contributes to poverty eradication (Goal 1); food security (Goal 2); gender equality (Goal 5); sustainability of cities and human settlement (Goal 11); combating climate change (Goal 13) and protecting terrestrial ecosystems (Goal 15). The progress on such goals will be derailed.

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## Report in air quality and health

According to the Global Air report on air quality and health in cities, New Delhi and Kolkata are the most polluted cities in the world.

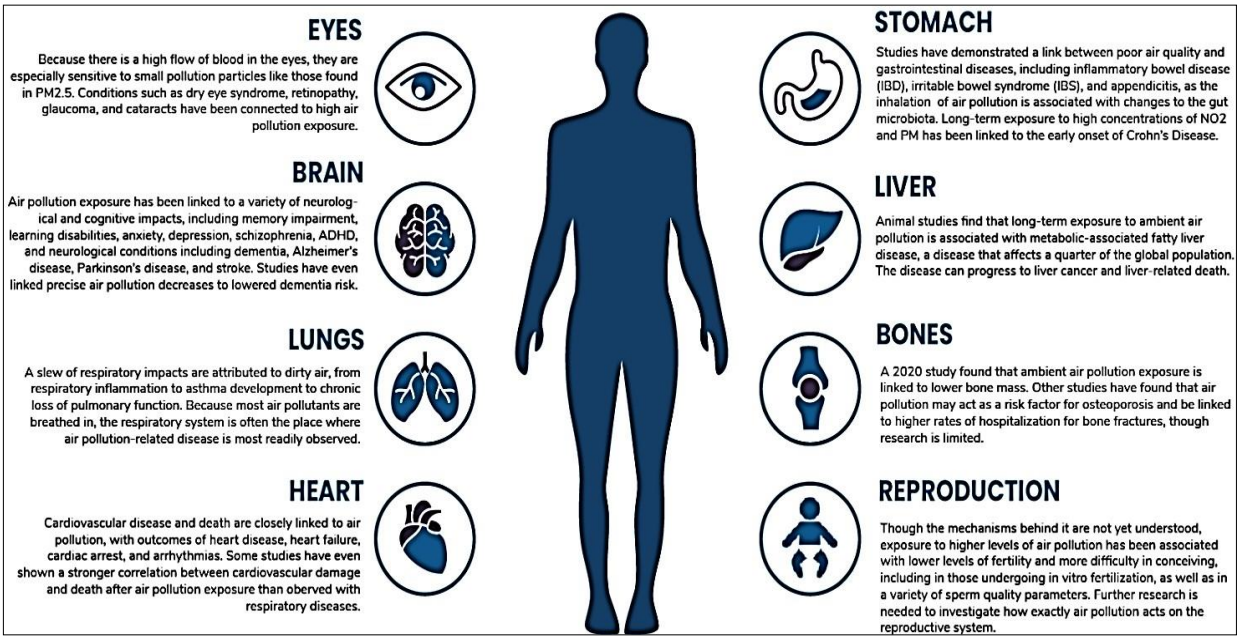
WHO's AQG

| Pollutant | Averaging time | 2005 AQGs | 2021 AQG level |
|---|---|---|---|
| $PM_{2.5}$, μg/m³ | Annual | 10 | 5 |
| | 24-hour[a] | 25 | 15 |
| $PM_{10}$, μg/m³ | Annual | 20 | 15 |
| | 24-hour[a] | 50 | 45 |
| $O_3$, μg/m³ | Peak season[b] | – | 60 |
| | 8-hour[a] | 100 | 100 |
| $NO_2$, μg/m³ | Annual | 40 | 10 |
| | 24-hour[a] | – | 25 |
| $SO_2$, μg/m³ | 24-hour[a] | 20 | 40 |
| CO, mg/m³ | 24-hour[a] | – | 4 |

**Pre-Connect**

- According to the report, Air pollution was the 4th leading risk factor for early death worldwide in 2019, around 6.67 million death have occurred.
- The main source contributing to air pollution are vehicle exhaust, heavy industry including power generation, small-scale industries including brick kilns, and resuspended dust on the roads due to vehicle movement and construction activities.
- Earlier this year, a global report – the World Air Quality Report 2021 – listed New Delhi as the capital city with the most polluted air for the fourth consecutive year.

### Impacts of Polluted Air




- Particulate matter is released in the atmosphere as air pollutants-
  - PM10 : inhalable particles, with diameters that are generally 10 micrometers and smaller.
  - PM2.5 : fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller.

**Key Points of the Reports**

- New Delhi and Kolkata are the most polluted cities in the world.These cities rank the highest,based onlevels of fine particulate matter.
- PM2.5 levels in Delhi averaged 110 μg/m3, making it the world's most polluted city in this respect.
- Kolkata came second in the list, with average PM2.5 levels of 84 μg/m3. Mumbai too found a place here, ranking 14th with average PM2.5 levels of 45.1 μg/m3.
- The cities in South Asia, West Sub-Saharan Africa and East Asia reported exposures to PM2.5 higher than 35 μg/m3 (the least stringent WHO limit).
- India is home to 18 of the 20 cities with the most severe increase in PM2.5 pollution (more than 30 μg/m3) from 2010 to 2019.
- With respect to NO2, the global average was 15.5 μg/m3 – higher than the WHO limit of 10 μg/m3. Out of the 103 most populous cities across all 21 regions, 81 reported higher NO2 exposures than the global average.
- Exposure to pollutants can cause a range of illnesses, from respiratory and heart diseases to cancers and strokes.
- Fine particulate matter (PM2.5) and nitrogen dioxide (NO2) are two major air pollutants in cities and urban areas worldwide.



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## Living Planet report

According to the WWF's Living Planet Report (LPR) 2022, Wildlife populations of mammals, birds, amphibians, reptiles and fish have seen a devastating 69% drop on average since 1970. The report highlights the stark outlook of the state of nature and urgently warns governments, businesses and the public to take transformative action to reverse the destruction of biodiversity.

***Biodiversity***

- Biodiversity refers to the various life forms that exist on earth, including animals, plants, microorganisms, and the entire ecosystem they live in.
- Biodiversity is in the form of biological resources, including genes, species, organisms, and ecosystems. Thus, there are three main levels of biodiversity are species, genetic, and ecosystem biodiversity.

***Levels of biodiversity***

- **Genetic diversity** is the variety of genes within a species. Each species is made up of individuals that have their own particular genetic composition. This means a species may have different populations, each having different genetic compositions. To conserve genetic diversity, different populations of a species must be conserved.
- **Species diversity** is the variety of species within a habitat or a region. Some habitats, such as rainforests and coral reefs, have many species. Others, such as salt flats or a polluted stream, have fewer.
- **Ecosystem diversity** is the variety of ecosystems in a given place. An ecosystem is a community of organisms and their physical environment interacting together. An ecosystem can cover a large area, such as a whole forest, or a small area, such as a **Biodiversity hotspots**

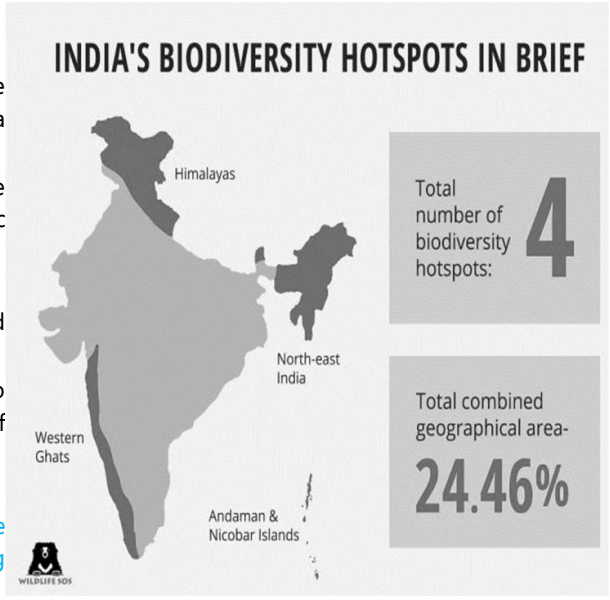
  There are currently 36 recognized biodiversity hotspots. These are Earth's most biologically rich—yet threatened—terrestrial regions. To qualify as a biodiversity hotspot, an area must meet two strict criteria:
  - Contain at least 1,500 species of vascular plants found nowhere else on Earth (known as "endemic" species).
  - Have lost at least 70 percent of its primary native vegetation.

  Many of the biodiversity hotspots exceed the two criteria. For example, both the Sundaland Hotspot in Southeast Asia and the Tropical Andes Hotspot in South America have about **15,000** endemic plant species. The loss of vegetation in some hotspots has reached a startling **95** percent.

**Biodiversity cold-spots**
A "biodiversity cold spot" is an area with a limited variety of living things, like plants, animals, fungi, and bacteria.

**Key Points of the Report**

- ***Decline in wildlife population***
  - Report highlighted that there is highest decline in the wildlife populations (94%) was in the Latin America and the Caribbean region.
  - Whereas, Africa recorded a 66% fall in its wildlife populations from 1970-2018 whereas the Asia-Pacific recorded a decline of 55%.
- ***Reduction in freshwater species***
  - The Freshwater Species populations globally reduced by 83%.
  - The threat such as habitat loss and barriers to migration routes were responsible for about half of the threats to monitored migratory fish species.
- ***Decline in vertebrate wildlife species***
  - Report highlighted that vertebrate wildlife populations are collapsing at a particularly staggering rate in tropical regions of the world.




- ***Degradation of Mangroves region***
  - The report highlighted that the mangroves continue to be lost to aquaculture, agriculture and coastal development at a rate of 0.13% per year.
  - Many mangroves are degrading because of overexploitation and pollution, alongside natural stressors such as storms and coastal erosion.

Threats to biodiversity

- **Habitat loss:** This occurs when a particular area is converted from usable to unusable habitat. Industrial activities, agriculture, aquaculture, mining, deforestation, and water extraction are all central causes of habitat loss. .



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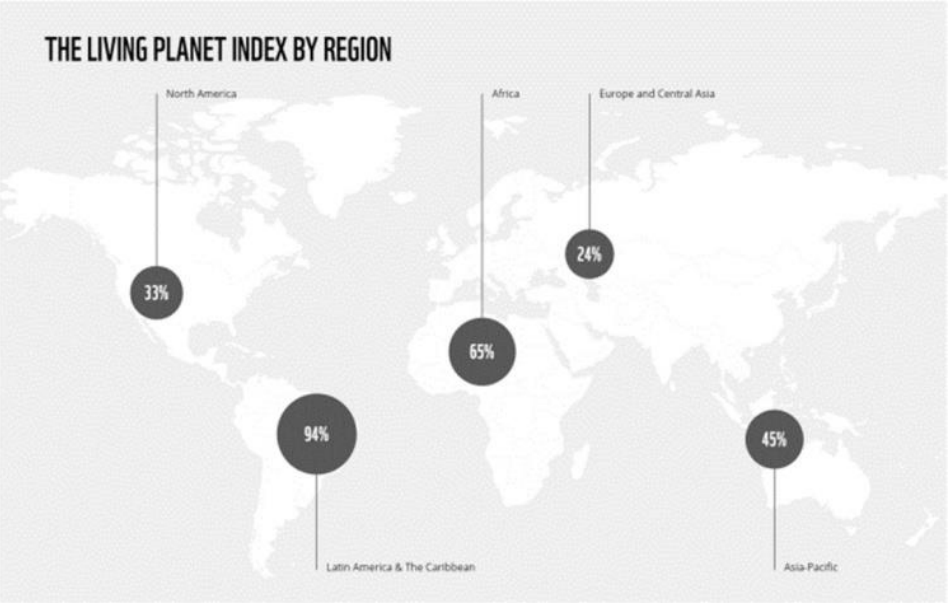
- **Invasive species:** When an animal, plant, or microbe moves into a new area, it can affect the resident species in several different ways. New species can parasitize or predate upon residents, hybridize with them, compete with them for food, bring unfamiliar diseases, modify habitats, or disrupt important interactions.
- **Pollution:** The discharge of toxic synthetic chemicals and heavy metals into the environment has a huge impact on species abundance and can lead to extinctions. It's important to remember that substances that are "natural" can become pollution when they are too abundant in a certain area.




- **Human population:** In the year 1800, there were fewer than 1 billion people on earth, and today there are about 6.8 billion. Even without the vast increases in per capita resource use that have occurred during this period, the pressures on biodiversity would have increased during this time period simply based on population growth. Thus increasing populations have lead to increasing threats to biodiversity.
- **Overharvesting:** This includes targeted hunting, gathering, or fishing for a particular species as well as incidental harvesting such as bycatch in ocean fisheries. The mega fauna extinction example earlier was an example of overharvesting causing biodiversity loss.

**Impacts**

***Impacts of climate change on biodiversity:***

- The present global biota has been affected by fluctuating concentrations of temperature, precipitation, and greenhouse gases like carbon dioxide and has coped through evolutionary changes through the adoption of natural adaptive strategies.
- Habitat fragmentation is one of the effects of climate change on biodiversity and has already confined many species to relatively small areas, decreasing their population and their roles and contribution in the ecosystem. It also leads to reduced genetic variability.
- Human activities have already resulted in the loss of biodiversity and thus may have affected goods and services crucial for human well-being. For example, the dodo bird, native to Mauritius was hunted to extinction within a century.
- With the current rising level of greenhouse gases emissions, its magnitude and effects will continue to diminish biodiversity and its related aspects.

***Links between biodiversity and climate change***

- Climate change affects biodiversity through shifting habitat, changing life cycles, as well as the development of new physical traits.
- Conserving and sustainably managing biodiversity can help to control climate change. Conserving natural habitat like freshwater, marine and terrestrial ecosystems and at the same time restoring degraded ecosystems is essential for achieving global goals and controlling climate change.
- The habitat of biodiversity is a major carbon sink contributing to climate change mitigation. For instance, mangrove forests provide habitat to tigers and at the same time reduce the disastrous impacts of climate change such as flooding and storm surges.
- Henceforth, ecosystem-based adaptation integrates the use of biodiversity and ecosystem services, acting as an adaptation strategy. It is cost-effective and stabilizes the social, economic and cultural co-benefits and contributes to the conservation of biodiversity.



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## Unicef report on heatwave

Nearly all the world's children will be exposed t o more frequent and severe heat waves by 2050, according to a new United Nations Children's Fund (UNICEF) report "the Coldest Year of the Rest of Their Lives".

**Global adaptation initiative country index**

- It is developed by university ofNotre Dames
- The index measures of climate readiness, which consists of economic, governance and socialcomponents.

**Children climate risk index**

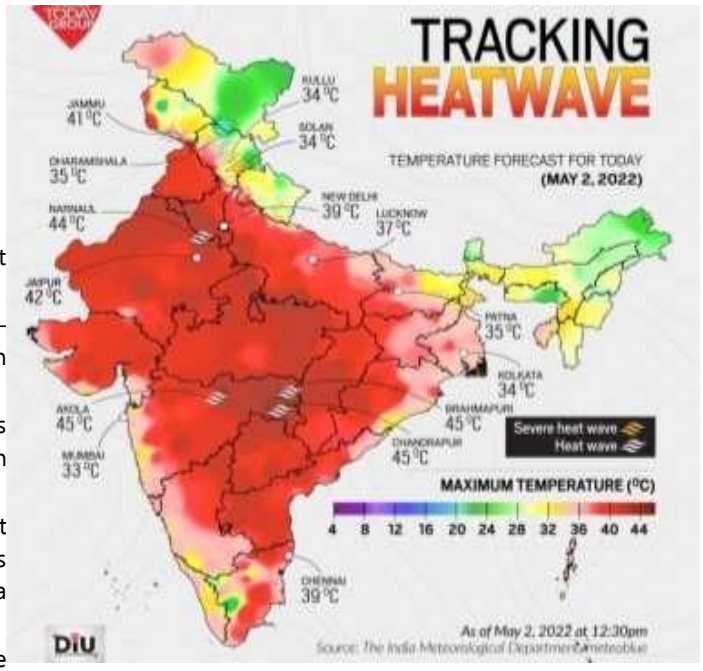
- It provides the comprehensive view of children's exposure and vulnerability to the impacts of climate change.
- It ranks countries based on children's exposure to climate and environmental shocks, such as cyclones and heatwaves, as well as their vulnerability to those shocks, based on their access to essential services.

**Pre-Connect**

- Favourable conditions for heat waves:
  - Transportation / Prevalence of hot dry air over a region (There should be a region of warm dry air and appropriate flow pattern for transporting hot air over the region).
  - Absence of moisture in the upper atmosphere (As the presence of moisture restricts the temperature rise).
  - The sky should be practically cloudless (To allow maximum insulation over the region).
  - Large amplitude anti-cyclonic flow over the area.
  - Heat waves generally develop over Northwest India and spread gradually eastwards & southwards but not westwards (since the prevailing winds during the season are westerly to north-westerly).
  - But on some occasions, heat wave may also develop over any region in situ under the favourable

**Reasons for occurrence of heat waves:**

- ✓ Development of urban heat islands
- ✓ Global warming
- ✓ Extreme local weather events
- ✓ Increasing desertification




**Key findings of the report**

- Currently, around 559 million children are exposed to at least four to five hazardous heat waves annually.
- The number will quadruple to over two billion by 2050 — up from 24 per cent of children in 2020. This amounts to an increase of about 1.5 billion children.
- "Virtually every child on earth" will face severe heat waves even under a low greenhouse gas emission scenario — with an estimated 1.7 degrees Celsius of warming in 2050.
- One in four children lives in areas where the average heat wave event lasts 4.7 days or longer as of 2020. This percentage will rise to over three in four children under a low-emission scenario by 2050.
- At "2.4 degrees of warming, 94 per cent of children will be exposed with only small areas of southern America, central Africa, Australasia and Asia not exposed to high heatwave duration."

**Risks associated with heat waves**

- Heat wave risks to health include — heat stroke, heat stress, allergy, chronic respiratory conditions, asthma, mosquito-borne disease, cardiovascular disease, under-nutrition and diarrhoea.
- High temperatures are linked to increased mental health problems in children and adolescents, including post-traumatic stress disorder and depression.
- Extreme heat affects children's education and future livelihoods like poor health and decrement in attendance.

**Mitigation measures**

**The report said the countries must:**

- o Protecting children from climate devastation by encouraging social services
- o Preparing children to live in a climate-changed world
- o Prioritising children and youth in climate finance and resources
- o Preventing a climate catastrophe by reducing greenhouse gas emissions.



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## Emission Gap Report

The UNEP released report, titled 'Emissions Gap Report 2022: The Closing Window — Climate Crisis Calls for Rapid Transformation of Societies', has found that in India and six other top emitters, emissions have rebounded and increased after the pandemic.

The United Nations Environment Programme (UNEP) is the global authority that sets the environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the UN system and serves as an authoritative advocate for the global environment.

Key findings of the report

- For most major emitters, including China, India, the Russian Federation, Brazil and Indonesia, GHG emissions (excluding land use and forestry sectors) rebounded in 2021, exceeding pre-pandemic 2019 levels.
- The G20 countries have just started to work on meeting their new targets, and collectively, are expected to fall short of their promises for 2030.
- Unconditional and conditional NDCs are estimated to reduce global emissions in 2030 by five and 10 per cent respectively, compared with emissions based on policies currently in place.
- To get on a least-cost pathway to limiting global warming to 2°C or 1.5°C, these percentages must reach 30 per cent and 45 per cent respectively.
- Updated pledges since COP26 in Glasgow take less than one per cent off projected 2030 greenhouse gas emissions; 45 per cent is needed for limiting global warming to 1.5°C
- The full implementation of unconditional NDCs and additional net-zero emissions commitments point to only a 1.8°C increase. However, it is not currently credible based on the discrepancy between current emissions, short-term NDC targets and long-term net-zero targets.

**India's Initiatives**

- **Bharat stage (BS) emission standards** It is to regulate the output of air pollutants from internal combustion engine and spark- ignition engine equipment, including motorvehicles.
- **UJALA (Unnat Jyoti by AffordableLEDs for All) scheme**

It is also known as the LED-based Domestic Efficient Lighting Programme (DELP), to promote energy efficiency in all households.

- **International Solar Alliance (ISA)**

It is a treaty based inter-governmental organization working to create a global market system to tap the benefits of solar power and promote clean energy applications.

- **National Action Plan on Climate Change (NAPCC)**

It outlines a national strategy that aims to enable the country to adapt to climate change and enhance the ecological sustainability of India's development path.

- **The Ethanol Blending Programme (EBP)**

It seeks to achieve blending of Ethanol with motor sprit with a view to reducing pollution

**Recommendations**

- Introduce carbon pricing, such as taxes or cap-nd- trade systems.
- Create markets for low-carbon technology, through shifting financial flows, stimulating innovation and helping to set standards.
- To advance the transformation, all sectors need to avoid lock in of new fossil fuel-intensive infrastructure, advance zero-carbon technology and apply it, and pursue behavioural changes.

Setting up the foundations of a net-zero future: one that will allow us to bring down temperature overshoots and deliver many other social and environmental benefits, like clean air, green jobs and universal energy access.

## Global carbon atlas

Release of Global Carbon Budget 2022-Major Carbon Emitters are- China>USA>India>Russia>Japan>Iran>Germany>Saudi Arabia>Canada>Brazil.

- Established in 2013, in the Global Carbon Project and helps in visualizing data related to the global carbon cycle.

**Global Carbon Project (GCP)**

- It was set up in 2001 to fully understand the carbon cycle.
- It is the partnership between International Geosphere-Biosphere Programme (IGBP)- International NGO for International Council for Science, the International Human Dimensions Programme on Global Environmental Change (IHDP), the World Climate Research Programme (WCRP)-Formed by the World Meteorological Organisation+ International Council for Science and Oceanographic Commission, and Diversitas.
- It includes the global budgets for three dominant greenhouse gases which are carbon dioxide ($CO_2$), Methane ($CH_4$), and Nitrous Oxide ($N_2O$).

**Diversitas**

- It was an international research program aimed to integrate biodiversity science for human well-being. In December 2014, its work was transferred to the program called Future Earth.

Future Earth



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- It was launched in 2012 at the UN Conference on Sustainable Development (Rio+20)

  It is an international research program that aims to build knowledge about the environmental and human aspects of global change and to find solutions for sustainable development.

## State of finance for nature report

Recently the second edition of the State of Finance for Nature report is published by the United Nation Environment Programme (UNEP) and the Economics of Land Degradation (ELD).

**About the report**

- The State of Finance of Nature tracks global trends in public and private investment in nature-based solutions, aiming to improve data quality and identify opportunities for governments, businesses and financiers.
- The first "State of Finance for Nature" report was published in 2021. Its theme was "Tripling investments in nature-based solutions by 2030." It is published by UNEP, WEF and ELD.
- The State of Finance for Nature report analyzes the investment flow in nature- based solutions (NbS) and identifies the future investment needed to meet the climate change, biodiversity and land degradation targets.
- The first edition of the report indicated that annual investments in nature-based solutions will have to triple by 2030 and increase four-fold by 2050 from the current investments into nature-based

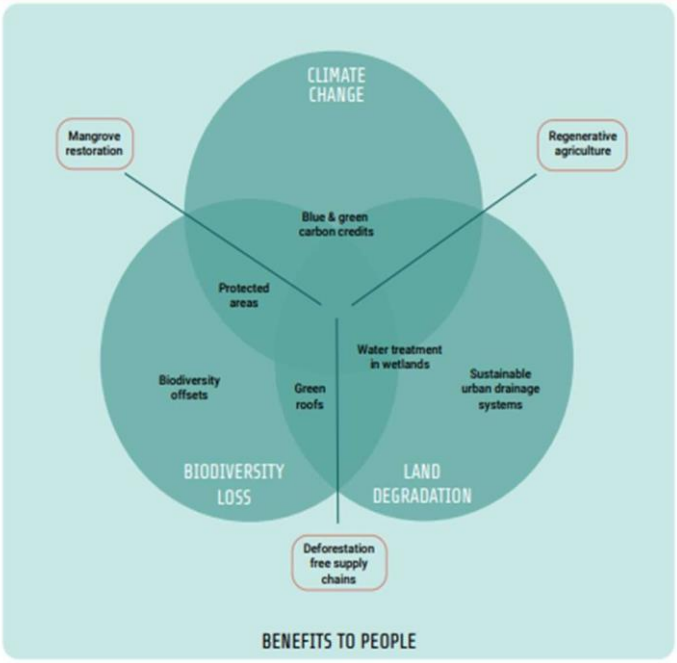
solutions of USD 133 billion (using 2020 as the base year).

**Important points of the report**

- If the world wants to halt biodiversity loss, limit climate change to below 1.5 degree celcius and achieve land degradation neutrality by 2030, current finance flows to NbS must urgently double by 2025 and triple by 2030.
- The current global investments in NbS are around $154 billion (Rs 12,49.44 crore) per year, which needs to be increased to $384 billion by 2025.
- Investments in economic activities that release GHGs into the atmosphere are currently three to seven times larger than investments in NbS.
- Harmful subsidies are highest in the energy sector, estimated to range from $340 billion/ year to $530 billion/year and in the agriculture sector, estimated around $500 billion/year.
- The other highlight of the report was the need for private investments in nature-based solutions, which currently stands at only 17 per cent. Private actors can combine Net Zero with naturepositive solutions.
- Tackling climate change, biodiversity loss and land degradation with immediate action requires that current global investments need to increase by USD 230 billion each year to 2025.
- Limiting global warming to 1.5°C, rather than 2°C, is achievable only if action is immediate and with additional cumulative investments of USD 1.5 trillion to a total of USD 11 trillion between 2022 – 2050.
- This additional investment will focus on sustainable agriculture and peatland restoration.

### Nature-based Solutions (NbS)

- Nature-based Solutions are actions to protect, sustainably manage, and restore natural and modified ecosystems that address societal challenges effectively and adaptively, simultaneously benefiting people and nature.
- Nature-based Solutions address societal challenges through the protection, sustainable management and restoration of both natural and modified ecosystems, benefiting both biodiversity and human well-being.
- Nature-based Solutions are underpinned bybenefits that flow from healthy ecosystems.
- They target major challenges like climate change, disaster risk reduction, food and water security, biodiversity loss and human health, and are critical to sustainable economic development.



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**United Nations Environment Programme (UNEP)**

- UNEP was established in 1972 in Nairobi, Kenya.
- The United Nations Environment Programme (UNEP) is the leading environmental authority in the United Nations system.
- UNEP's mission is to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.
- UNEP concentrates in six areas like climate change, post-conflict and disaster management, ecosystem management, environmental governance, harmful substances and Resource efficiency/sustainable consumption and production.

**UNEP Reports**: Emissions Gap Report, Adaptation Gap Report, An Eye on Methane: International Methane Emissions Observatory Report, etc.

# Pollution and its Management

## Forever chemical contaminated water

**Forever chemicals:** A recent study published in Environment Science and Technology has found that rainwater from many places across the globe is contaminated with "per- and poly fluoro alkyl substances," (PFAS), which are called "forever chemicals" because they tend to remain in the environment for a longer period of time.

- **Concerns related to PFAS Human Health Risk:** PFAS may cause decreased fertility rate, as it interferes with the reproductive system and the development of the fetus.
- Developmental effects and birth defects in children.
- Interference with body hormones (so they are called endocrine disruptors).
- Increased cholesterol levels and increased risk of some cancers (e.g.-kidney and testicular cancer).
- Recent research has also revealed that long-term low-level exposure to certain PFAS can make it difficult for humans to build antibodies after being vaccinated against various diseases.

## Battery waste management rules notified

**Battery waste management rules:** New rules will replace the Batteries (Management and Handling) Rules, 2001,

**Guidelines are**- The rules cover all types of batteries, viz. Electric Vehicle batteries, portable batteries, automotive batteries and industrial batteries.

**EPR**: The rules function based on the concept of Extended Producer Responsibility (EPR) where the producers (including importers) of batteries are responsible for the collection and recycling/refurbishment of waste batteries and use of recovered materials from wastes into new batteries.

- EPR mandates that all waste batteries be collected and sent for recycling/refurbishment, and its prohibits disposal in landfills and incineration.
- **Digital backbone:** The rules will enable the setting up a mechanism and centralized online portal for the exchange of EPR certificates between producers and recyclers/refurbishers to fulfill the obligations of producers.

- **Industrial development:** The rules promote the setting up of new industries and entrepreneurship in the collection and recycling/refurbishment of waste batteries.
- **Recovery from waste:** Mandating the minimum percentage of recovery of materials from waste batteries under the rules will bring new technologies and investment in the recycling and refurbishment industry and create new business opportunities.



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- **Recycling:** Recommending the use of a certain amount of recycled materials in the making of new batteries will reduce the dependency on new raw materials and save natural resources.
- **Polluters pay principle:** Environmental compensation will be levied for non-fulfillment of Extended Producer Responsibility targets and commitment, responsibilities and obligations set out in the rules.
- **Compensation fund:** The funds collected under environmental compensation shall be utilised in the collection and refurbishing or recycling of uncollected and non-recycled waste batteries.

## Glyphosate

Recently, the government has restricted the sale of glyphosate as it has increased cultivation of "illegal" herbicide-tolerant GM cotton.

**About Glyphosate:**

- It is an herbicide used to kill weeds, i.e, an undesirable plant that compete with crops for nutrients, water and sunlight.
- It is a broad-spectrum herbicide that can control a wide ra nge of weeds, whether broadleaf or grassy.
- It is also non-selective, killing most plants.
- When applied to their leaves, it inhibits the production of a protein '5-enolpyruvylshikimate- 3-phosphate synthase (EPSPS)'.

**Glyphosate in India**

- There are nine glyphosate-based formulations containing different concentrations of the chemical registered for use under the Insecticides Act, 1968.
- These are approved largely for weed control in tea gardens and non-crop areas such as railway tracks or playgrounds.
- Farmers also apply glyphosate on irrigation channels and bunds to clear these weeds, making it easier for water to flow and to walk through them.
- Weeds growing on bunds are hosts for fungi, such as those causing sheath blight disease in rice.
- It can be used in tea or rubber plantations, but not in fields where the crops and weeds are at almost the same level.

### DMH-11

The Genetic Engineering Appraisal Committee (GEAC) hasrecommended the "environmental release" of the **transgenic hybrid mustard** DMH-11 for seed production and commercial cultivation

**About DMH-11 in India**

- The original version containing a single insect pest-resistant gene was released in 2002 and an improved double-gene product in 2006.
- It incorporates three alien bacterial genes that enable hybridisation.

**Reasons for restriction of glyphosate by the government**

- **Increase in application:** With the advent of genetic modification (GM) or transgenic technology, Glyphosate application has been increased.
- **GM crop tolerance:** It has involved incorporating a 'cp4-epsps' gene, isolated from a soil bacterium Agrobacterium tumefaciens, into crop plants such as cotton, maize and soyabean. This alien gene codes for a protein that does not allow glyphosate to bind with the EPSPS enzyme. Thus, GM crop can "tolerate" the spraying of the herbicide, which then kills only the weeds.
- **Illegal sales:** There has been sale of an additional 5 million packets of "illegal" GM cotton seeds as these seeds harbour both insect-resistance and HT traits, coming from the two Bt genes and the glyphosate-tolerant 'cp4-epsps' gene.

**International organizations on Glyphosate**

- **World health organizations:** The International Agency for Research on Cancer (IARC), classified glyphosate as "probably carcinogenic to humans". However, this was based on evidence for cancer in experimental animals from "pure" glyphosate, as opposed to that in humans from real-world exposures through diluted formulations.
- **The US Environmental Protection Agency:** It suggested that there are "no risks of concern to human health from current uses of glyphosate" and "no evidence" of it causing cancer.
- **The European Chemicals Agency:** It suggested that "classifying glyphosate as a carcinogenic, mutagenic (causing DNA changes) or reprotoxic substance is not justified

## World bank report on air pollution

World Bank has released a **report titled with 'Striving for Clean Air: Air Pollution and Public Health in South Asia'.** The report shows that there are economically feasible, cost-effective solutions to achieve clean air in the region, but this requires countries to coordinate policies and investments.

**Airsheds:**

- A geographical area within which the air frequently is confined or channeled, with all parts of the area, thus being subject to similar conditions of air pollution.



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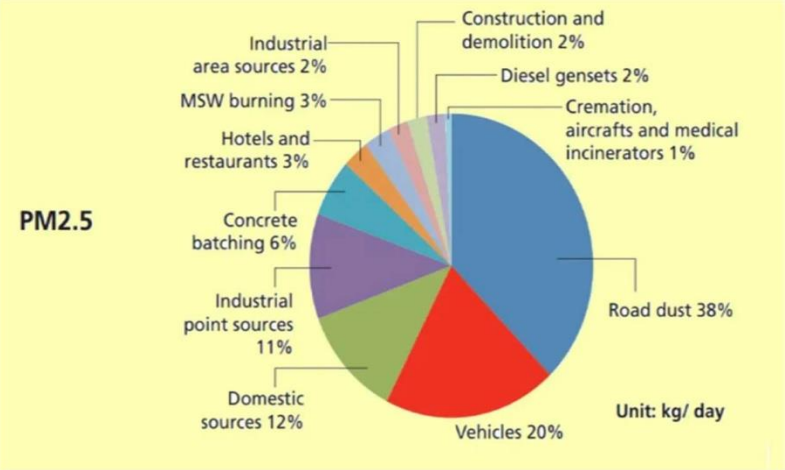
- There are six large airsheds in South Asia, where the air quality in one can affect the air quality in another. They are-
  - West/Central Indo-Gangetic Plain (IGP) that included Pakistan, Punjab (India), Haryana, part of Rajasthan, Chandigarh, Delhi, Uttar Pradesh.
  - Northern/Central Indus River Plain: Pakistan, part of Afghanistan;
  - Southern Indus Plain and further west: South Pakistan, Western Afghanistan extending into Eastern Iran.
  - Central/Eastern IGP: Bihar, West Bengal, Jharkhand, Bangladesh
  - Middle India: Odisha/Chhattisgarh and
  - Middle India: Eastern Gujarat/Western Maharashtra
- When the wind direction was predominantly northwest to the southeast, 30% of the air pollution in Indian Punjab came from the Punjab Province in Pakistan and, on average, 30% of the air pollution in the largest cities of Bangladesh (Dhaka, Chittagong, and Khulna) originated in India.




**Key Points of the Report**

- Concentrations of fine particulate matter such as soot and small dust (PM 2.5) in some of the region's most densely populated and poor areas are up to 20 times higher than what WHO considers healthy (5 µg/m$^3$).
- Exposure to such extreme air pollution has impacts ranging from stunting and reduced cognitive development in children, to respiratory infections and chronic and debilitating diseases. This drives up healthcare costs, lowers a country's productive capacity, and leads to lost days worked.
- Large industries, powerplants and vehicles are dominant sources of air pollution around the world, but in South Asia, other sources make substantial additional contributions. These include combustion of solid fuels for cooking and heating, emissions from small industries such as brick kilns, burning of municipal and agricultural waste, and cremation.
- Air pollution travels long distances— crossing municipal, state, and national boundaries—and gets trapped in large "airsheds" that are shaped by climatology and geography. The report identifies six major airsheds in South Asia where spatial interdependence in air quality is high.
- Currently, over 60% of South Asians are exposed to an average 35 µg/m3 of PM2.5 annually. In some parts of the Indo-Gangetic Plain (IGP) it spiked to as much as 100 µg/m3 – nearly 20 times the upper limit of 5 µg/m3 recommended by the World Health Organisation.
- The report shows that current policy measures will only be partially successful in reducing PM 2.5 concentrations across South Asia even if fully implemented.

**National Clean Air Programme**

- It was launched by the Ministry of Environment, Forest and Climate Change in January 2019.
- It is the first-ever effort in the country to frame a national framework for air quality management with a time-bound reduction target.
- It seeks to cut the concentration of coarse (particulate matter of diameter 10 micrometer or less, or PM10) and fine particles (particulate matter of diameter 2.5 micrometer or less, or PM2.5) by at least 20% in the next five years, with 2017 as the base year for comparison.

# SUSTAINABLE LIVING

## Lifestyle for environment movement

Lifestyle for Environment (LiFE) is an India-led global mass movement to nudge individual and community action to protect and preserve the environment.

**About LiFE**

- LiFE was introduced by the Indian Prime Minister at COP26 in Glasgow on 1 November 2021 as a mass movement for "mindful and deliberate utilization, instead of mindless and destructive consumption "to protect and preserve the environment.
- It aims to nudge individuals and communities to practice a lifestyle that is synchronous with nature and does not harm it.
- It is designed to mobilize at least one billion Indians and other global citizens to take individual and collective action for protecting and conserving the environment in the period 2022–28.
- Those who practice such a lifestyle are recognized as **Pro Planet People.**



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- India is the first country to include LiFE in its Nationally Determined Contributions.
- The mission will be incubated, curated, and piloted by NITI Aayog and subsequently implemented by the Union Ministry of Environment, Forest and Climate Change.
- According to the **United Nations Environment Programme (UNEP)**, if 1 out of 8 billion people worldwide adopts environment-friendly behaviors in their daily lives, global carbon emissions could drop upto 20 percent.

**The approach of the LiFE Campaign**

- **It focuses on Individual Behaviours:**It aims to make life a mass movement (Jan Andolan) by focusing on the behaviors and attitudes of individuals and communities.
- **It Co-creates Globally:** Crowdsourcing of empirical and scalable ideas from the best minds of the world, from top universities, think tanks, and international organizations.
- **Leverage Local Cultures:** Leverage climate-friendly social norms, beliefs, and daily household practices of different cultures worldwide to drive the campaign.

**India and Mission LiFE:**

- ✓ India has rich experience in implementing large-scale behavioral change programs like:
- ✓ **Swachh Sagar Surakshit Sagar campaign**: It aimed to remove approximately 15,000 tonnes of waste from 75 beaches in 75 days.
- ✓ **The Swachh Bharat Mission (SBM):** It led to the construction and use of over 100 million toilets in rural India within 7 years.
- ✓ India's initiative with the International Solar Alliance proves that the country is pursuing environmentally sound policies.
- ✓ India has been ranked among the top 5 countries in the world, and the best among the G20 countries, based on its Climate Change performance.
- ✓ India could attract close to $10 bn in renewable energy investment in 2023.

**Indian Traditional Methods for Mission LiFE**

- Several unique water harvesting techniques, contextual to local conditions, are practiced across India. These include the step wells of Gujarat and Rajasthan, the underground tanks (tankaa) of Tamil Nadu, the check dams (johads) of Rajasthan, and the Zabo system of Nagaland that deposit the water in pond-like structures on terraced hillsides.
- Clayware, for example, is commonly used for cooking and serving purposes across the country (sal tree leaves) and tea in clay pots (kulhad).
- Several traditional Indian practices such as adaptive architectural forms that minimize electricity consumption and hand-washing and sun-drying of clothes, as well as a dietary preference for plant-based foods and millet, can serve as foundations for LiFE.
- Through this India will put forward and propagate a healthy and sustainable way of living based on its traditions and the values of conservation and moderation, including through a mass movement.

**LiFE as a Global Programme**

**It envisions three core shifts in our collective approach toward sustainability they are:**

- **Change in Demand (Phase I):** Nudging individuals across the world to practice simple yet effective environment-friendly actions in their daily lives.
- **Change in Supply (Phase II):** Changes in large-scale individual demand are expected to gradually nudge industries and markets to respond and tailor supply and procurement as per the revised demands.
- **Change in Policy (Phase III):** By influencing the demand and supply dynamics of India and the world, the long-term vision of Mission LiFE is to trigger shifts in large-scale industrial and government policies that can support both sustainable consumption and production.
- Given the global commitment to achieving the SDGs by 2030, it is important to note that Mission LiFE contributes directly and indirectly to almost all the SDGs.
- The SDGs focused on sustainable cities and communities (SDG 11), responsible production and consumption (SDG 12), climate change (SDG 13), life on land (SDG 15), and life under water (SDG 14) are addressed by the mission.
- **LiFE Global Call for Ideas:** NITI Aayog (Behavioural Insights Unit) and the Ministry of Environment, Forest and Climate Change (MOEFCC), in partnership with the United Nations, World Resources Institute, Centre for Social and Behaviour Change (CSBC) and Bill and Melinda Gates Foundation (BMGF), are inviting ideas from across the world for one of the following, or related, areas **like** Water, Transport, Food, Electricity, Waste Management, Sustainability. Recycle, Reuse.



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## Community forest resource rights

**Community forest rights and Forests Rights Act:**

- The Community Forest Resource rights under Section 3(1)(i) of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act (commonly referred to as the Forest Rights Act or the FRA) provide for recognition of the right to "protect, regenerate or conserve or manage" the community forest resource.
- These rights allow the community to formulate rules for forest use by itself and others and thereby discharge its responsibilities under Section 5 of the FRA.
- CFR rights, along with Community Rights (CRs), which include nistar rights and rights over non-timber forest products, ensure sustainable livelihoods of the community.
- These rights give the authority to the Gram Sabha to adopt local traditional practices of forest conservation and management within the community forest resource boundary.

## Shoonya campaign

**Shoonya Campaign About**- Anniversary of India's zero pollution e-mobility campaign.

- Urban freight and mobility demand is expected to grow at a CAGR of 8% through 2030.
- Evs are way out for India to meet this demand as do not emit PM or NOx emissions at the tailpipe and they release 60% less CO2 and have 75% lower operating costs.
- Shoonya supplements existing national and sub-national EV policies as well as corporate efforts in India by creating consumer awareness and demand for zero pollution rides and deliveries in Indian cities.
- The electrification of the ride-hailing and delivery sector in India could mitigate close to 54 MT of CO2 emissions, 16,800 tonnes of PM emissions, and 537,000 tonnes of NOx pollution, saving roughly 5.7 lakh crore in expenditures over a year.
- Shoonya can lead to dramatic emission reductions in the transport sector, supporting India's five-point agenda (Panchamrit), announced at COP 26, to reduce carbon emissions and secure its 2070 climate goals

## Digital decarbonation

In 2020, digitisation was purported to generate 4% of global greenhouse gas emissions. The "dark data" is anchored to the real world by the energy it requires. Even data that is stored and never used again takes up space on servers - typically huge banks of computers in warehouses. Those computers and those warehouses all use lots of electricity at the cost of environment. Thus data de- carbonization can be the solution.

Dark data

- Dark data is all of the unused, unknown and untapped data across an organization, generated as a result of users' daily interactions online with countless devices and systems
  — everything from machine data to server log files to unstructured data derived from social media.
- Organizations may consider this data too old to provide value, incomplete or redundant, or limited by a format that can't be accessed with available tools.



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**Digital carbon footprint**

A carbon footprint is the total amount of greenhouse gases (including carbon dioxide and methane) that are generated by our actions. However, the production, use and data transfer of digital devices causes more CO2 emissions than one might expect. These emissions are summarized under the terms "digital CO2 footprint" or "digital carbon footprint".

**Current scenario**

While most climate change activists are focused on limiting emissions from the automotive, aviation and energy industries, the processing of digital data is already comparable to these sectors and is still growing.

- In 2020, digitisation was purported to generate 4% of global greenhouse gas emissions.
- Production of digital data is increasing fast- this year the world is expected to generate 97 zetta-bytes (that is: 97 trillion gigabytes) of data.
- By 2025, it could almost double to 181 zettabytes. It is therefore surprising that little policy attention has been placed on reducing the digital carbon footprint of organisations.
- The lion's share of the digital footprint is caused by video streaming due to large data sizes of videos. By comparison, using a search engine or sending text-only emails has a negligible impact.

**Environmental impacts of digitisation:**

- **Increase in Energy Demand:** Digitisation has led to high global energy demand and has increased GHG's emission. global trends such as cryptocurrency mining, cloud usage, artificial intelligence, virtual and augmented reality, autonomous driving, the "Internet of Things" and the foreseen implementation of 5G will drive further increases in energy demand.
- **Impacts from mineral and metal supply chains needed for digital products and energy technologies:** The extraction process, as well as the production process to turn the minerals into cell phones, computers and servers, comes with its own environmental footprint across the lifecycle. Similarly, the increasing level of green energy technologies that power digital technologies also have supply chains based on extensive use of metals and rare earth minerals.
- **Increase of E-waste:** E-wastes are the world's fastest-growing domestic waste stream, fuelled mainly by higher consumption rates of electrical and electronic equipments, short life cycles, and fewer options for repair. Thus affecting the soil and environment.

**Digital De-carbonization:**

- There is a need to act now to decarbonise data centres, and there are three key areas to address.
- **Less heat, less energy use:** Data centres should technologically reduce the heat dissipation such as including passive cooling. As data centre growth continues, becoming a source of heat for nearby homes and businesses is one way the centres can be integrated into communities and contribute to wider decarbonisation efforts.
- **Greening the power supply:** Using renewable energy as the source of supply can be another option available for data centres to de-carbonize. One promising option is to use tidal power, which offers completely reliable power, predictable centuries in advance.
- **Clean energy storage and backup:** Flow batteries store their energy in tanks of electrolytes and can hold their charge indefinitely, making them potentially more effective. The emerging hydrogen economy may also provide an alternative. It can be produced using surplus renewable energy and carbon emissions from industrial facilities.



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## Mission life

Prime Minister and United Nations Secretary General **Antonio Guterres** on 20 October 2022 launched **Mission LiFE**, a global plan of action aimed at **saving the planet from the disastrous consequences of climate change**. The launch of the mission, aimed at **encouraging people towards sustainable living**, comes ahead of next month's mega **UN climate meet in Egypt**.

What are the action plans?

1. The **action plan** - a list of ideas on lifestyle changes that can be taken up as **climate- friendly behaviour** - along with the logo and tagline for **Mission LiFE (Lifestyle for Environment)** were jointly launched by PM and Guterres at Kevadia in Gujarat.
2. PM asked people to adopt the concept of '**reduce, reuse and recycle**' and **circular economy** and said India is committed to tackling the menace of climate change.
3. Mission LiFE will strengthen the concept of a pro-people planet. The mission signifies "lifestyle of the planet, for the planet and by the planet".
4. **Mission LiFE** aims at following a **three-pronged strategy** for changing people's collective approach towards sustainability.
5. This includes **nudging individuals to practice simple yet effective environment- friendly actions** in their daily lives (demand), **enabling industries and markets** to respond swiftly to the changing demand (supply), and to **influence government and industrial policy** to support both sustainable consumption and production (policy).
6. People are **experiencing the effects of climate change in their surroundings**, and in the last few decades **unexpected calamities were witnessed**. This makes it amply clear that climate change goes beyond just policy-making," he said.
7. The PM said the mantra of Mission LiFE is 'Lifestyle For Environment'. The mission will connect the **people's power for the protection of the earth**, and teach them to utilise its resources in a better way.

## Green washing

UN Secretary General **Antonio Guterres** on 8 November 2022 warned companies and other non-state entities **pursing net-zero goals** for themselves against **indulging in 'greenwashing'**, and said there **would be zero tolerance for 'greenwashing'**. An expert- group constituted by him last year submitted its report on 8 November 2022, recommending a **range of measures to prevent greenwashing**.

**What is greenwashing**

1. It refers to the **growing tendency of companies, organisations** and even countries to

   **mark all kinds of activities as climate-friendly**, often with dubious, unverifiable or misleading claims.
2. In their bid **to showcase their concern for the environment** and nature, they often resort to short-cuts, obtain untrustworthy certifications, or indulge in **plain intentional misinformation**.
3. While the UN Secretary General spoke about **greenwashing in the context of net-zero targets** being taken by companies, **greenwashing is prevalent across the whole range of environmental activities**.

**Why does it happen?**

1. **Greenwashing is relatively easy** in the **absence of universal or rigorous regulations and standards**.
2. The processes, methodologies and institutions to measure, report, create standards, verify claims, and grant certifications are still being created.
3. In the meanwhile, **large number of organisations** has sprung up claiming to offer these services.
4. Many of these **lack integrity and robustness**, but their services are availed by corporations, because it makes them look good.

4. Developed countries, for example, are often accused of greenwashing their investments in developing countries, by highlighting **climate co-benefits of the financial flows**, often with little justification.
5. Companies are accused of **greenwashing their image by sponsoring a green award** or con ference, while carrying on with their environment-damaging business activities elsewhere.

**Double counting** — when two or more entities claim the climate benefits of the same action — is also considered **greenwashing**. The generation, certification and trade of carbon credits in voluntary settings often leads to lot of greenwashing.

## Combating future pandemics

**About the Report**

- The Report titled Covid-19 Pandemic: Global Response, India's Contributions and the Way Forward.
- It stressed the need for mechanisms other than the Crisis Management Plan put in place by the Union health ministry and the Guidelines on Management of Biological Disasters disseminated by the National Disaster Management Authority of India.
- This would ensure that health issues are accorded the desired priority with a whole of government approach towards prevention,



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containment and management of viral and other diseases.

**Pandemics**

- Pandemics are large-scale outbreaks of infectious disease that can greatly increase morbidity and mortality over a wide geographic area and cause significant economic, social, and political disruption.
- Evidence suggests that the likelihood of pandemics has increased over the past century because of increased global travel and integration, urbanization, changes in land use, and greater exploitation of the natural environment. These trends likely will continue and will intensify.
- Significant policy attention has focused on the need to identify and limit emerging outbreaks that might lead to pandemics and to expand and sustain investment to build preparedness and health capacity.

**Challenges in combatting Pandemics**

- ✓ Pandemics have occurred throughout history and appear to be increasing in frequency, particularly because of the increasing emergence of viral disease from animals.
- ✓ Pandemic risk is driven by the combined effects of spark risk (where a pandemic is likely to arise) and spread risk (how likely it is to diffuse broadly through human populations).
- ✓ Some geographic regions with high spark risk, including Central and West Africa, lag behind the rest of the globe in pandemic preparedness.
- ✓ Influenza is the most likely pathogen to cause a severe pandemic. According to a study, in any given year, a 1 percent probability exists of an influenza pandemic that causes nearly 6 million pneumonia and influenza deaths or more globally.

**Global Impacts of Pandemics**

- Pandemics can cause significant, widespread increases in morbidity and mortality and have disproportionately higher mortality impacts on Low Middle-Income Countries (LMICs) and developing countries like India.
- Pandemics can cause economic damage through multiple channels, including short-term fiscal shocks and longer-term negative shocks to economic growth.
- Individual behavioural changes, such as fear-induced aversion to workplaces and other public gathering places, are a primary cause of negative shocks to economic growth during pandemics.
- Some pandemic mitigation measures can cause significant social and economic disruption.
- In countries with weak institutions and legacies of political instability, pandemics can increase political stresses and tensions.
- E.g., outbreak response measures such as quarantines have sparked violence and tension between states and citizens.

**Mitigation Measures: A Way Forward**

Pathogens with pandemic potential vary widely in the resources, capacities, and strategies required for mitigation. However, there are also common prerequisites for effective preparedness and response.

The most cost-effective strategies for increasing pandemic preparedness, especially in resource-constrained settings, consist of

- Investing to strengthen core public health infrastructure, including water and sanitation systems;
- Increasing situational awareness;
- rapidly extinguishing sparks that could lead to pandemics.

Once a pandemic has started, a coordinated response should be implemented focusing on

- Maintenance of situational awareness,
- Public health messaging,
- Reduction of transmission, and care for and treatment of the ill.
- Successful contingency planning and response require surge capacity—the ability to scale up the delivery of health interventions proportionately for the severity of the event, the pathogen, and the population at risk.



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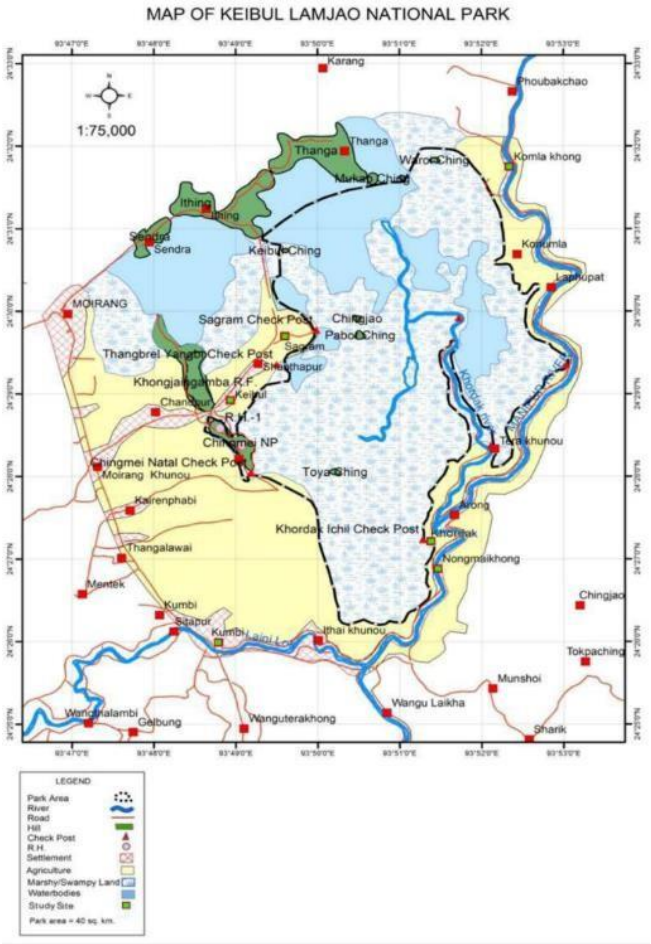
# WILDLIFE AND NATIONAL PARKS

## Keibul lamjao national parks

The State government of Manipur has announced that a heritage park would come up near the Keibul Lamjao National Park in Bishnupur district.




**Pre-Connect**

- The park is located in the south western part of the Loktak lake.
- The park is the natural habitat of the brow-antlered deer(Sangai) the dancing deer of Manipur.
- The Park is the only floating park in the world.
- The Keibul Lamjao Conservation Area represents an extraordinary story of natural antiquity, diversity, beauty and human attachment.
- The Keibul Lamjao Conservation Area (KLCA) comprises of a core area of Keibul Lamjao National Park and a buffer of Loktak Lake and Pumlen Pat.

**Issue**

- The Manipur government has set aside ₹46 crore for the construction of the heritage park. However, the villagers took out a demonstration near the KLNP.
- The government had taken up steps to shift the site to a place six km away from the KLNP.
- The proposed site has no connection with efforts to save the endangered deer. On the other hand, the people in surrounding villages have been doing everything possible to protect the deer.
- The people of the proposed site are not associated with steps for the protection of the endangered brow-antlered deer (Sangai) in the KLNP.

**Reason for shifting a site**

- It was expected that the museum of the Indian National Army where the first Indian flag of Independence was hoisted near the Loktak lake and the heritage park will attract tourists from the country and abroad.
- There will be traditional thatched houses of the different communities in this heritage park.

## Cheetah translocation project

**WORLD'S FIRST CHEETAH TRANSLOCATION PROJECT**

Madhya Pradesh's ***Kuno National Park*** have been asked to prepare for the ***relocation of about 12-14 cheetahs*** in what is going to be the ***world's first intercontinental cheetah translocation project.*** There are ***three or four leopards*** in the area that have to be brought out before the cheetahs can move in.

**What**

1. The plan to ***reintroduce cheetahs*** — a species that went extinct in the 1950s — to India has been decades in the making.
2. The Indian government had initially ***approached Iran***, where the ***Asiatic cheetah***, the same subspecies that went extinct in India, exists, and was even keen on ***cloning the species***.
3. The ***Kuno National Park*** had once been the chosen site for ***translocation of the endangered Asiatic lion*** from Gir in Gujarat: In 2013 the Supreme Court had said relocation of the Asiatic lion was of "***utmost importance***" and ordered the Ministry of Environment and Forests to complete the process within six months of the judgment.
4. ***In 2012***, the Supreme Court had stayed the government's plans to import cheetahs
   — an order it ***upheld in 2013***. At the time, the court had said that the government needed to produce a detailed study before the introduction of ***African cheetahs*** could be considered.
5. ***In 2017***, the ***National Tiger Conservation Authority (NCTA)*** appealed to the Supreme Court to reconsider its decision. Three years later — in 2020 — the Supreme Court allowed cheetahs to be reintroduced on "***an experimental basis***" even



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though a court-appointed panel rejected the project.

In January this year, the central government released an '***Action Plan For Introduction of Cheetah in India***' laying down its relocation plans.

## Indian pangolin

### Indian Pangolin

**Pangolin types**

- Eight species of pangolins are found on two continents. They range from Vulnerable to Critically Endangered.
- Four species live in Africa: Black-bellied pangolin (Phataginus tetradactyla), White-bellied pangolin (Phataginus tricuspis), Giant Ground pangolin (Smutsia gigantea) and Temminck's Ground pangolin (Smutsia temminckii).
- The four species found in Asia: Indian pangolin (Manis crassicaudata), Philippine pangolin (Manis culionensis), Sunda pangolin (Manis javanica) and the Chinese pangolin (Manis pentadactyla).

**About pangolin**

- Of the eight extant species of pangolin, the Indian Pangolin Manis crassicaudata and Chinese Pangolin M. pentadactyla occur in India.
- Indian Pangolin is a large anteater covered dorsally by 11-13 rows of scales.
- The adult male is about one-third larger than the female.
- A terminal scale is also present on the ventral side of the tail of the Indian Pangolin, which is absent in the Chinese Pangolin.
- Its sticky tongue, which is longer than its body, is specially adapted for reaching and lapping up insects in deep crevices.
- To tear open the anthills or termite mounds, it uses the powerful forelimbs that are armed with three disproportionately long claws.
- In sharp contrast, the hind legs have tough soles and short, blunt nails on the five toes.

**Habitat and Distribution in India**

- The species is understood to occur in various types of tropical forests as well as open land, grasslands and degraded habitats, including in close proximity to villages.
- The species can adapt well to modified habitats, provided its ant and termite prey remains abundant.
- Indian Pangolin is widely distributed in India, except the arid region, high Himalayas and the North-East. It can be found at elevation up to 2500 m.
- The species also occurs in Bangladesh, Pakistan, Nepal and Sri Lanka.

**Threats to Indian pangolin**

- Major threats to pangolins in India are hunting and poaching for local consumptive use (e.g. as a protein source and traditional medicine)
- International trade, for its meat and scales in East and South East Asian countries, particularly China and Vietnam.
- Its leathery skin, used to make boots, shoes and other goods.
- Other threats include the expansion of agriculture, habitat loss and deterioration, which opens up previously inaccessible areas to hunting and poaching, pesticide use and road kill.

**Conservation Status**

- Schedule : Listed in Schedule I of Wildlife (Protection) Act, 1972.
- IUCN : Endangered on IUCN Red List.
- CITES : Pangolins gained the highest levels of protection under CITES and comes under APPENDIX 1.

**Conservation Efforts**

TRAFFIC is mapping pangolin trade hubs, conduits, transportation, high poaching areas and drivers in relation to poaching and illegal trafficking of pangolins.

TRAFFIC, in partnership with WWF-India and Wildlife Crime Control Bureau (WCCB) launched a social media campaign to create awareness.

Maharashtra becomes first state in India to get dedicated action plan to protect pangolins.

The Applied Environmental Research Foundation (AERF) has been promoting conservation with strong collaboration and partnership with the local communities with a geographical focus in the North-Western Ghats (NWG) for pangolin which is part global Biodiversity Hotspot

## Rhino horn

About Rhino

- There are five species of rhino which are Sumatran Rhino, Black Rhino, Javan Rhino, Greater one horned rhino, and White Rhino.
- The Great one horned rhino is found in India and Nepal. It is confined to the tall grasslands and forests in the foothills of the Himalayas.
- Conservation status is vulnerable. Current status of Rhino in India
- The Indian Rhinoceros (Rhinoceros unicornis), is primarily found in the north-eastern parts of India.
- Formerly the animal dwelled along the Gangetic plains but now more than 70% of the Indian Rhino population is mainly confined to Assam.
- Kaziranga National Park, being the largest protected site and home for Indian Rhino in Assam.
- Now Assam counts for 2645 Rhinos, with Kaziranga National Park holding highest number of the animal followed by Manas National Park, Pobitora Wildlife Sanctuary and Orang National Park.

**Key findings of the study**

- There is evidence for declining horn length over time across species, perhaps related to selective pressure of hunting, and indicating a utility for image-based approaches in understanding societal perceptions of large vertebrates and trait evolution.



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- The rate of decline in horn length was highest in the critically-endangered Sumatran rhino and lowest in the white rhino of Africa, which is the most commonly found species both in the wild and in captivity.
- The observation follows patterns seen in other animals, such as tusk size in elephants and horn length in wild sheep, which have been driven down by directional selection due to trophy hunting.
- During the age of European imperialism (between the 16th and 20th centuries), rhinos were commonly portrayed as hunting trophies, but since the mid-20th century, they have been increasingly portrayed in a conservation context, reflecting a change in emphasis from a more to less consumptive relationship between humans and rhinos.

**International conservation efforts on Rhino**

**CITES:** The five rhinoceros species are all categorized in Appendix I. Thus, the species that are or may be affected by trade are included in Appendix I of CITES for protection.

**Ramsar convention:** The general importance of the Ramsar Convention for rhinoceroses lies in the protection of their habitat. Thus, for the Indian or greater one-horned rhinoceros the Ramsar Convention carries a significant value, due its exclusive habituation of wetlands.

**The World heritage convention:** The Committee in 2015 directed at India which expresses its concern about the high risk of the extinction of the Indian rhino in the Manas Wildlife Sanctuary and encourages India to increase its efforts to combat poaching.

**The Convention on Biological Diversity (CBD):** CBD lay down certain obligations for Contracting Parties like the obligation to create protected areas or the obligation to restore degraded ecosystems, which are likely to benefit the rhinoceros.

**India's efforts on conservation of Rhino**

- **Indian Rhino Vision 2020 (IRV2020**): The program established in 2005 for the purpose of increasing the rhino population in Assam to 3,000 by establishing populations in seven protected areas.
- **The New Delhi Declaration on Asian Rhinos 2019:** The five rhino range nations signed this declaration for the conservation and protection of the species at the Second Asian Rhino Range Countries meeting.

**National rhino conservation strategy:** To conserve one-horned Rhino a conservation strategy was developed.

## Great nicobar

The Ministry of Environment, Forest and Climate Change gave environmental clearance for the ambitious Rs 72,000 crore development project on the strategically important Great Nicobar Island.

**Great Nicobar**

- It is the southernmost island of the Nicobar Islands Archipelago.
- The Nicobar group includes the islandsof Car Nicobar (north), Camerota (Kamorta) and Nancowry (central group), and Great Nicobar (south).
- The highest peak is Mount Thullier, rising to 2,106 feet (642 meters) on Great Nicobar.
- The population consists mostly of two ethnic groups, the Nicobarese and the Mongoloid Shompens.
- Indira Point on the southern tip of Great Nicobar Island is India's southernmost point.

**Great Nicobar Biosphere Reserve**

- It has a wide spectrum of ecosystems comprising tropical wet evergreen forests, mountain ranges, and coastal plains.
- It houses 650 species of angiosperms, ferns, gymnosperms, bryophytes, and lichens.
- It has the well-known endemic and/or endangered Crab-eating Macaque, Nicobar Tree Shrew, Dugong, Nicobar Megapode, Serpent Eagle, saltwater crocodile, marine turtles, and Reticulated Python.



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**Governments Developmental Proposal**

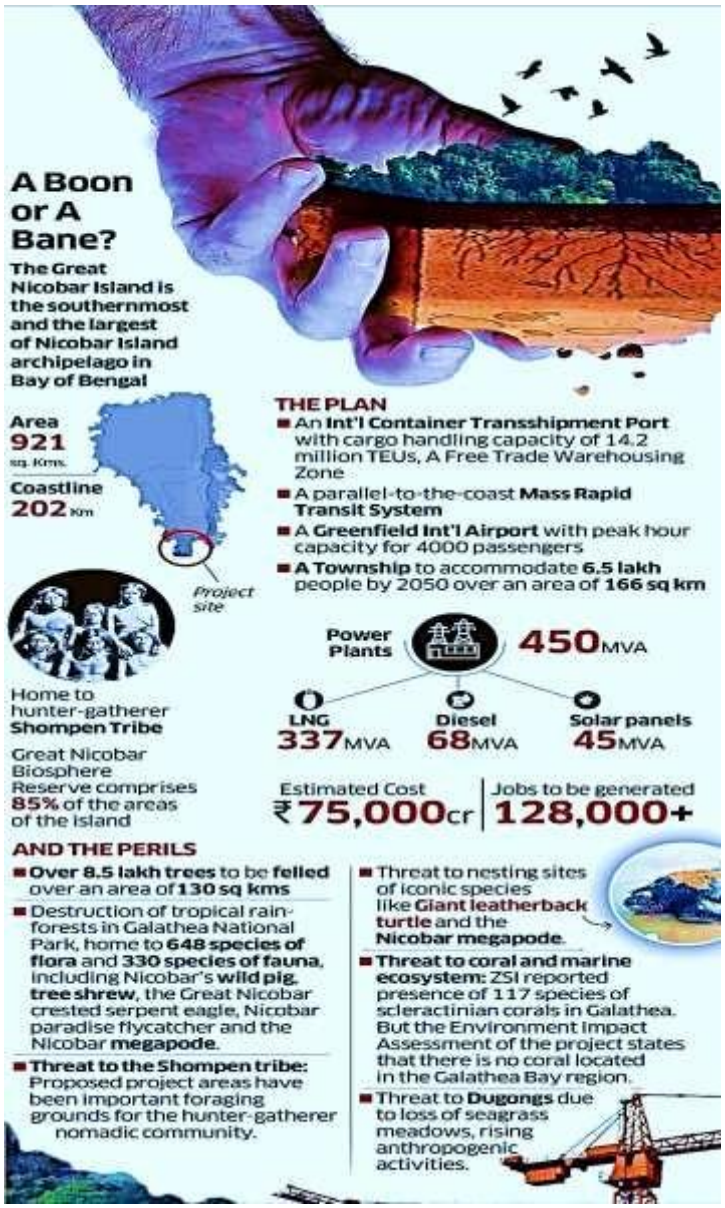
- ✓ A greenfield city has been proposed, including an International Container Transhipment Terminal (ICTT), a greenfield international airport, a power plant, and a township for the personnel who will implement the project.
- ✓ According to the NITI Aayog report, the proposed port will allow Great Nicobar to participate in the regional and global maritime economy by becoming a major player in cargo transshipment.
- ✓ The port will be controlled by the Indian Navy, while the airport will have dual military-civilian functions.
- ✓ It has planned roads, public transport, water supply, waste management facilities, and several hotels to cater to tourists.
- ✓ About 130 sq km of forests have been sanctioned for diversion, and 9.64 lakh trees are likely to be felled.

**Government's Purpose**

- The government's greater goal is to leverage the locational advantage of the island for economic and strategic reasons apart from its tourism potential.
- Great Nicobar is equidistant from Colombo to the southwest and Port Klang and Singapore to the southeast and positioned close to the East-West international shipping corridor, through which a very large part of the world's shipping trade passes. The proposed ICTT can potentially become a hub for cargo ships traveling on this route.

**Concerns regarding the Project**

- ✓ The proposed massive infrastructure development in an ecologically important and fragile region, including the feeling of almost a million trees is detrimental to the sensitive ecosystem.
- ✓ This can impact the Coral reefs in the area due to increased runoff and sediment deposits in the ocean.
- ✓ It can cause a loss of mangroves on the island as a result of the development project.



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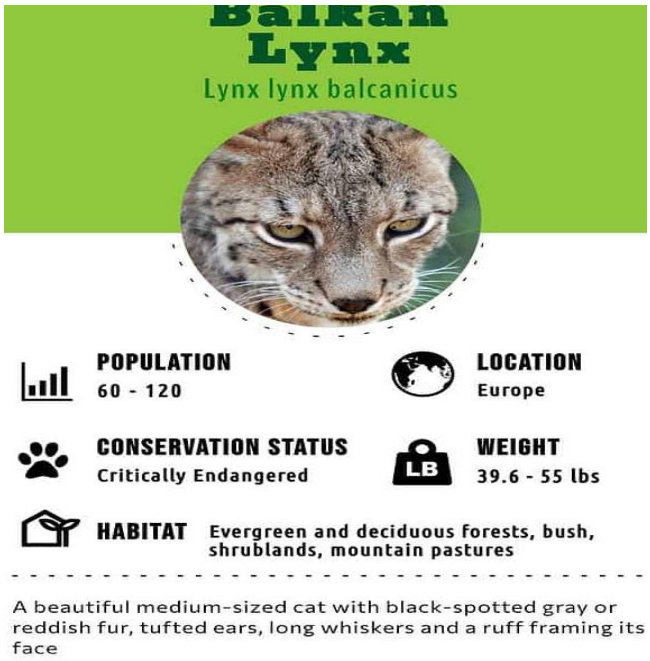
## Balkan Lynx

It's considered a critically endangered species by IUCN.

The 'forest ghost' lives in tree-covered mountains straddling Albania, Kosovo, and North Macedonia, and is now among the world's most endangered mammals.

Victims of deforestation and poaching have left less than 40 in number.

They are timid and elusive carnivore that sleeps during the day and hunts at night for deer, hare, chamois, and rabbit.




## Bar headed goose

The bar-headed goose (Anser indicus) belongs to the family, Anatidae.

- The bar-headed goose breeds in Central Asia, mainly Mongolia and China. They are migratory birds. They winter in South Asia, including Pakistan, India and Myanmar.

The IUCN (International Union for Conservation of Nature) has categorized and evaluated this goose species and has listed it as of "least concern".

These birds are fairly large in size, measuring 70 to 75 cm in length and weighing 2,000 to 3,000 grams. They have a wingspan of 140 to 160 cm.

They are pale grey in color with whitish head with distinguishing black bars on the head. The legs of the goose are orange in color. They mainly feed on grasses, roots, stems and other plant matter.

## Chestnut winged cuckoo

The chestnut-winged cuckoo (Clamator coromandus) belongs to the family of cuckoos, Cuculidae. These cuckoo species are distributed in India, Nepal, Bhutan, Bangladesh, Myanmar, southeast China, Laos, Thailand, Vietnam, Sri Lanka, Andaman Islands (India), Malaysia, Indonesia and Philippines. They are monotypic species. The chestnut-winged cuckoo species are brood parasites, laying their eggs in the nests of other birds.

**Conservation status and concerns**

The global population size of these chestnut-winged cuckoo species has not been quantified. The overall population trend is considered to be stable. It has extremely large range and does not approach the thresholds for population trend criterion and the population size criterion. Hence considered not "Vulnerable" to extinction. The loss of habitats due to human activities is the main threat to the survival of these cuckoo species.

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The IUCN (International Union for Conservation of Nature) has categorized and evaluated these chestnut-winged cuckoo species and has listed them as of "Least Concern".

## Neelakurinji sanctuary

- Though the Union government has included Neelakurinji (Strobilantheskunthiana) on the list of protected plants from the State, the proposal for a Neelakurinji sanctuary in Idukki still remains a distant dream.
- The sanctuary was announced in Idukki in 2006, but its demarcation is yet to begin.

**Neelakurinji:**

- These flowers belong to a shrub that is particularly found in the **Shola forests of the Western Ghats in Karnataka, Kerala, and Tamil Nadu.**
- Most of these species have a unique flowering cycle, **resulting from an annual to a 16-year blooming cycle**. The Kurinji Flowers at Kodagu have grown after **12 years.**

## Slender loris

**About:** India's First Slender Loris Sanctuary.

- Located in Kadavur Wildlife Sanctuary in the Dindigul district of Tamil Nadu.
- 11806 hectares of forest area will be covered. It will be notified under the Wildlife Protection Act (1972) section 26A (1)(B)
- Native to India and Sri Lanka
- Red Slender Loris is found only in Sri Lanka. While Grey Slender Loris is found both in India & Sri Lanka
- Tropical Rain Forest, Semi deciduous forests, and swampy areas are their habitat
- They live on trees predominately and eat plant shoots and fruits.

IUCN States of Red Slender- Endangered, Grey Slender- Near Threatened.

## Monarch butterfly

- Monarchs are the most recognisable species of butterfly, are important pollinators and provide various ecosystem services such as maintaining the global food web.

**Reasons for population reduction**:

- Habitat destruction and climate change are mainly responsible for pushing the insect towards extinction.
- One of main drivers in the decline of the migratory monarch's population is the use of herbicides in the U.S., resulting in a loss of milkweeds, essential for monarchs reproduction

**Present status:**

- Their population in the continent has declined 23-72 per cent over the last decade.
- The population of the eastern monarchs that migrate from **eastern United States and Canada** — the bigger group — also shrunk 84 per cent from 1996-2014.
- Known for its bright orange colors and its incredible annual migration, the migratory monarch butterfly is now classified as **"Endangered"** by the International Union for Conservation of Nature (IUCN).

## Asian Giant Tortoise

The Asian Giant Tortoise is the largest land tortoise in mainland Asia

- They comprised two subspecies: Manouria emys phayrei and Manouria emys emys.
- The former is generally darker in color with a dark brown, olive, or black domed upper shell, in contrast to the latter, which is characterized by a flattened, lighter yellowish-brown upper shell.
- The Asian Giant Tortoise is native to South Asia, in particular, the countries Bangladesh, India, Indonesia, Malaysia, Myanmar, and Thailand
- Conservation Status:
  - IUCN: Critically endangered
  - CITES: Appendix II



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- WPA, 1972: Schedule I

- They inhabit the evergreen forest, including bamboo forest, dry evergreen forest mixed with bamboo, dry evergreen forest, stream courses, and swampy stream edges.
- The Asian Giant Tortoise is a highly social species that exhibit complex social behavior.

  The threat of over-exploitation is due to the increasing demand for consumption in East Asia for meat, for use in traditional Chinese medicine and the global pet trade.

## Indian Skimmer

- They are endangered species on the IUCN list, it's a water bird species.
- In India, the species can be sighted near the Chambal river in Central India, in a few parts of Odisha, and Andhra Pradesh.
- According to studies, this bird has always shown up alone.
- During November and early December, birding hits a low ebb due to the rains. There could be fewer pairs of eyes to catch the Indian skimmer.
- Indian skimmers on the Indian coast have almost been restricted to Pulicat. In the south, there is a record from Odiyur lake (Mudraliyarkuppam backwaters).

  Inland eBird records of the Indian skimmer are restricted to the south, coming largely from the Thiruporur belt: Sightings at Illalur lake, Kattur lake, and Siruthavur lake

## New tiger reserve in Uttar Pradesh

The Uttar Pradesh government has approved the notification of the State's fourth tiger reserve. It will come up in Chitrakoot district's Ranipur Wildlife Sanctuary (RWS).

Pre-connect

***National Tiger Conservation Authority (NTCA)***

- The National Tiger Conservation Authority (NTCA) is a statutory body under the Ministry of Environment, Forests and Climate Change constituted under enabling provisions of the Wildlife (Protection) Act, 1972, as amended in 2006, for strengthening tiger conservation, as per powers and functions assigned to it under the said Act.
- NTCA has been fulfilling its mandate within the ambit of the Wildlife (Protection) Act, 1972 for strengthening tiger conservation in the country.
- The objectives of NTCA are:
  - Providing statutory authority to Project Tiger so that compliance of its directives become legal.
  - Fostering accountability of Center-State in management of Tiger Reserves, by providing a basis for MoU with States within our federal structure.
  - Providing for an oversight by Parliament.
  - Addressing livelihood interests of local people in areas surrounding Tiger Reserves.

**Project Tiger**

- The Government of India has taken a pioneering initiative for conserving its national animal, the tiger, by launching the "Project Tiger" in 1973.
- From 9 tiger reserves since its formative years, the Project Tiger coverage has increased to 51 at present, spread out in 18 of our tiger range states.
- This amounts to around 2.23% of the geographical area of our country.

***Core-buffer strategy in Project tiger***

- **Core area:** A particular expanse of land is identified and marked as the 'core area of the reserve. These areas are kept free of all human activities. It usually has the legal status of National Park or Wildlife Sanctuary. No human activity is allowed inside the core

**Ranipur wildlife sanctuary**

- Founded in 1977, Ranipur Wildlife Sanctuary is home to dry deciduous forest of Bamboo, Palash, Khair, Mahua, Dhau, Saal, Tendu, etc.
- According to the report, "Status of tigers, co-predators & prey in India" by the National Tiger Conservation Authority (NTCA), RWS is an important corridor for the movement of tigers.

**Wildlife (Protection) Act 1972**

- The Government enacted Wildlife (Protection) Act 1972 with the objective of effectively protecting the wildlife of this country and to control poaching, smuggling and illegal trade in wildlife and its derivatives.
- The Act was amended in January 2003 and punishment and penalty for offences under the Acthave been made more stringent.
- The Ministry has proposed further amendments in the law by introducing more rigid measures to strengthen the Act.
- The objective is to provide protection to the listed endangered flora and fauna and ecologically important protected areas.



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area, including tourism. Even everyday tasks such as grazing and wood collection are banned.

- **Buffer area:** The buffer areas usually surround the core area and are comparatively less frequented by the resident wildlife. Hence, limited human interaction here will not harm their habitat. Hence, it is subjected to 'conservation-oriented land use'. Certain everyday activities necessary for daily life and living of surrounding villages are allowed.
- The buffer area serves twin purposes. One, it serves as a habitat supplement to the spillover population of wild animals from the core area. Two, it becomes a livelihood source for surrounding villages and relieves their impact on the core zone.

**Plan of actions for tiger reserves in India**

- To counter poaching, wireless communication systems and outstation patrol camps have been deployed within the tiger reserves.
- Fire protection is ensured through preventive and control measures. Compensatory developmental works have improved water availability which in turn betters vegetation. Lush vegetation cover helps in increasing the tiger prey base.
- Village relocation is one of the significant steps as well as a hurdle to reserve management in core zones. While some villages relocate voluntarily, most others resist giving up their ancestral dwellings. The issue gets even more sensitive in the case of tribal communities.
- The Indian Government passed the Forest Rights Act in 2006 which recognized the right of some forest communities to their native forest area.

**Global initiatives**

- **The Global Tiger Initiative (GTI)** was launched in 2008 as a global alliance of governments, international organizations, civil society, the conservation and scientific communities and the private sector, with the aim of working together to save wild tigers from extinction.
  - The GTI's founding partners included the World Bank, the Global Environment Facility (GEF), the Smithsonian Institution, Save the Tiger Fund, and International Tiger Coalition. The initiative is led by the 13 tiger range countries (TRCs).
- **CITES:** Tigers have been included in Appendix of CITES since 1975, which means all international trade in tigers, including parts and derivatives, for commercial purposes is generally prohibited under the Convention.
- **Global tiger forum:** Global Tiger Forum is an international intergovernmental body exclusively set up for the conservation of tigers in the wild in the range countries.
  - Out of the 13 tiger range countries, seven are currently members of GTF: Bangladesh, Bhutan, Cambodia, India, Myanmar, Nepal and Vietnam besides non-tiger range country U.K.

## Kangar valley national parks

**Kanger Valley National Park**

- Kanger Ghati National Park (also called Kanger Valley National Park) was declared a national park in 1982 by the Government of India. Near Jagdalpur in the Bastar region of Chhattisgarh, it is one of India's densest national parks, and is known for its biodiversity, landscape, waterfalls, and subterranean geomorphologic limestone caves, and as the home of the **Bastar hill myna,** the state bird of Chhattisgarh.
- It covers an approximately consisting mainly of hilly terrain. **It derives its name from the Kanger River, which flows throughout it.**
- The national park has remarkable geological diversity.
- The national park has mainly Cuddapah group of rock formation and at some places Vindhyan group of rock formation, shales are the common rock formation of Cuddapah group, which are horizontally bedded, at many places calcareous, the other rock formation is slate.
- Poor and rocky soil is found on the hill tops and slopes. Recent deposits are alluvial soils, high and low level laterites, and ferruginous conglomerates.
- The park is Valley of Kanger River. The river flows from NW to SE direction centrally through deep gorges. Both sides of the valley are very steep and are associated with hill ranges. The entire park area is hilly.

**Kanger River**

Kanger River is among one of very few perennial rivers of Bastar and herein lies the importance of the river and the park. Kanger River is a lifeline and hills are its recharging reservoir; the whole national park is the catchment of Godavari River.

**Ramsar Convention and Wetlands in India**

- Ramsar Convention on Wetlands of international importance is an international treaty for the conservation and sustainable use of wetlands.
- It was signed in 1971 and named after Ramsar city of Iran.
- Every three years, representatives of the contracting parties meet at the **Conference of Contracting Parties (COP).** Last COP was held at China as COP14 in 2021.
- 2nd Feb is celebrated as World Wetland Day.



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- There are over 2300 Ramsar sites in 171 Ramsar countries. UK with 175 and Mexico with 142 sites respectively have highest number of sites.
- Bolivia has the largest area under Ramsar Sites
- India has 49 Ramsar sites spread across 20 states and these are:

| State | Site Name | Important Fact |
|---|---|---|
| **Andhra Pradesh** | Koellru Lake | It supports 200 species ofbirds including critically endangered Spoon Billed Sandpiper. |
| **Assam** | Deepor Beel | Associated with Pabitra WLS. Famous for Mandarin duck and Maguri-Motapung beel. |
| **Bihar** | Kabartal Wetland | Added in 2020, an Ox bow lake and a dolphin observatory. Known for Redheaded White rumped Indianvulture. |
| **Gujarat** | 1. Khijadia Wildlife Sanctuary (WLS)<br>2. Nalsarover Bird Sanctuary<br>3. Thol Lake Wildlife Sanctuary<br>4. Wadvana Wetland | 1, 3, and 4 were added in 202. Khijadia WLS is fresh water lake and have salt and fresh water marshlands. |
| | 1. Bhindwas Wildlife Sanctuary | Both were added to list in 2021. associated with Egyptian Vulture and Sahibi river and Khaparwas WLS |
| **Rajasthan** | 4. Keshopur-Miani Community Reserve<br>5. Nangal Wildlife Sanctuary<br>6. Ropar Lake<br>1. Keoladeo Ghana National Park (NP)<br>2. Sambhar Lake | Keoladeo Ghana NP is the oldest Ramsar Site in India |
| **Tamil Nadu** | Point Calimere Wildlife and Bird Sanctuary | Famous for Spoon billed Sandpiper a critically endangered bird. |
| **Tripura** | Rudrasagar Lake | It is known for critically endangered three stripped roof turtle. |
| **Uttar Pradesh** | 1. Bakhira Wildlife Sanctuary<br>2. Haiderpur Wetland<br>3. Nawabganj Bird Sanctuary<br>4. Parvati Arga Bird Sanctuar<br>5. Saman Bird Sanctuary<br>6. Samaspur Bird Sanctuary<br>7. Sandi Bird Sanctuary | Parbati Arga is a ox-bow lake associated with Saryu river a tributaroy of river Ganga.<br>Haider[ur wetland is a human made wetland formed in 1984 located in Hastinapur WLS.<br>Bakhira WLS is the largest natural flood plain wetland in India. |



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| | | |
|---|---|---|
| | 8. Sarsai Nawar Jheel<br>9. Sur Sarovar<br>10. Upper Ganga River (Brijghat to Narora Stretch) | |
| **Uttrakhand** | Asan Conservation Reserve | Located on Asan River and Yamuna River barrage. |
| **West Bengal** | 1. East Kolkata Wetlands<br>2. Sunderbans Wetland | Sundarbans is the largest wetland in India. |
| **Himachal Pradesh** | **1. Chandertal Wetland**<br>**2. Pong Dam/Maharana Pratap Lake**<br>**3. Renuka Wetland** | Renuka is the smallest while Chandertal is the second smallest wetland in India |
| **Jammu & Kashmir** | **1. Wular Lake**<br>**2. Hokera Wetland**<br>**3. Surinsar-Mansar Lakes**<br>**4. Tsomoriri Lake** | Surinsar-Mansar lakes were added in 2020. |
| **Kerala** | **1. Asthamudi Wetland**<br>**2. Sasthamkotta Lake**<br>**3. Vembanad Kol Wetland** | Ashtamudi Lake is associated with Neendakara port and Muroe Island. Vembanad Lake is associated with Kochi Port and Nehru boat race. It is also second largest wetland |
| **Ladakh** | Tso Kar Wetland Complex | Made up of two water bodies Startsapuk Tso (fresh-water) and Tso Kar lake (Saline). Situated on Rupshu Plateau and categorized as A1 in Bird Life International. |
| **Madhya Pradesh** | Bhoj Wetlands | Known for Sarus Crane |
| **Maharashtra** | 1. Lonar Lake<br>2. Nandur Madhameshwar | Lonar Lake turned pink in color in 2020 due to haloarcaea bacteria culture. It is a crater lake. |
| **Manipur** | Loktak Lake | Famous for phumdis floating over it. Keibul Lamjao National Park the only floating national park (NP) in the world is located on loktak lake. The NP is last natural refuge of Sangai. |
| **Odisha** | 1. Bhitarkanika Mangroves<br>2. Chilka Lake | Bhitrakanika Mangroves are associated with AbdulKalam Island and Gahirmatha Wildlife sanctuary.<br>On south of Chilka lake Rushikulya rivers flows which is associated witl olive ridley turtle. Chilka is also third largest wetland in India. |
| **Punjab** | 1. Beas Conservation Reserve<br>2. Harike Lake<br>3. Kanjli Lake | Beas Conservation reserve is associated with Indus river Dolphin and recently Ghariyal were also realsed into Beas river. |



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# Geography and Agriculture

## One nation one fertilizer

The Ministry of Chemicals and Fertilisers announced that it has been decided to implement One Nation One Fertiliser by introducing a "Single Brand for Fertilisers and Logo" under the fertiliser subsidy scheme named **"Pradhan Mantri Bhartiya Janurvarak Pariyojna" (PMBJP).**

Under the new "One Nation One Fertiliser" scheme, companies are allowed to display their name, brand, logo and other relevant product information only on one-third space of their bags. On the remaining two-thirds space, the "Bharat" brand and Pradhan Mantri Bharatiya Jan Urvarak Pariyojana logo will have to be shown.

Following the order, all fertiliser bags, whether containing urea or di-ammonium phosphate (DAP) or muriate of potash (MOP) or NPK will sport the brand name as 'Bharat Urea', 'Bharat DAP', 'Bharat MOP' and 'Bharat NPK' irrespective of the company that manufacturers it, whether in the public or the private sector.

1. **KRITAGYA 3.0: About**- A National level Hackathon on crop improvement by ICAR
   - KRI-Krishi (Agriculture), TA-Taknik (Technology), GYA-Gyan (Knowledge)
   - It is organised under National Agricultural Higher Education Project (NAHEP)
   - NAHEP is an ICAR project funded by World Bank
   - He overall objective of NAHEP is to support participating Agricultural Universities (AUs) and ICAR in providing more relevant and higher quality education to the student.
2. **Eleventh Agricultural Census (2021-22)**: The Union Minister for Agriculture and Farmers Welfare has launched the Eleventh Agricultural Census (2021-22) stating that this computation will bring huge benefits in a vast and agricultural country like India.

**About 11th agricultural census**: This is the first time that data collection for the agricultural census will be conducted on smart phones and tablets so that data is available in time.

- Most of the States have digitized their land records and surveys, which will further accelerate the collection of agricultural census data.
- The use of digitized land records and the use of mobile apps for data collection will enable the creation of a database of operational holdings in the country.
- Thus, it will bring a major thrust towards **digital agriculture in India.**

**Digital Agriculture**

Digital technologies, such as artificial intelligence (AI) and machine learning (ML), remote sensing, big data, block chain and IoT, are transforming agricultural value chains and modernizing operations.

**Initiatives taken to promote digital agriculture-**

- **Digital Agriculture Mission 2021–2025**: Government signed five memorandum of understandings (MoUs) with CISCO, Ninja cart, Jio Platforms Limited, ITC Limited and NCDEX e-Markets Limited (NeML), to forward digital agriculture through pilot projects.
- **The Jio Agri (Jio Krishi) platform:** launched in February 2020, digitises the agricultural ecosystem along the entire value chain to empower farmers.
- **National Agriculture Market (eNAM):** - pan-India electronic trading portal that links the existing Agricultural Produce Market Committee (APMC) mandis, to create a unified national market for agricultural commodities.
- **Direct Benefit Transfer (DBT) Central Agri Portal:** - Launched in January 2013, the DBT Agri Portal is a unified central portal for agricultural schemes across the country. The portal helps farmers adopt modern farm machineries through government subsidies
- **Unified Farmer Service Platform (UFSP):** UFSP is a combination of **Core Infrastructure, Data, Applications and Tools** that enable **seamless interoperability** of various public and private IT systems in the agriculture ecosystem across the country.
- Other Digital Initiatives:
  - Kisan Call Centres
  - Kisan Suvidha App
  - Agri Market App



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- Soil Health Card (SHC) Portal

**Analytica:**

The government is focusing on increasing farmers' income. Besides, there is a need to change their standard of living, organize small farmers in order to empower them, attract them towards remunerative crops and ensure the quality of the produce at par with global standards. This is the time to make full use of technology in this computation.

## India's first ever Animal Health Summit

**News Excerpt**

Ministry of Fisheries, Animal Husbandry and Dairying has recently Inaugurated First India Animal Health Summit 2022.

**Key Facts**

- India Animal Health Summit 2022was organized by Indian Chamber of Food and Agriculture (ICFA) and the Agriculture Today Group.
- The first India Animal Health Summit 2022 was held at the NASC Complex in New Delhi, with the goal of understanding the importance of animal health to the country's food and nutrition security, rural income and prosperity, and overall economic development.

1. The total livestock population in the country is 535.78 million, a 4.6 percent increase from the 2012 Livestock Census. The total bovine population was 302.79 million in 2019, a 1.0 percent increase from the previous census.

2. India has the most cattle and produces the most milk in the world, but per-animal productivity remains low.

**Common animal diseases**

**Anthrax**

- Anthrax, a highly infectious and fatal disease of cattle, is caused by a relatively large spore-forming rectangular shaped bacterium called Bacillus anthracis.
- Anthrax causes acute mortality in ruminants.
- Signs of the illness usually appear 3 to 7 days after the spores are swallowed or inhaled. Once signs begin in animals, they usually die within two days.
- Buffaloes, sheep and goats are also affected. Young cattle between 6-24 months of age, in good body condition are mostly affected. It is soil-borne infection which generally occurs during rainy season. In India, the disease is sporadic (1-2 animal) in nature.

**Foot and mouth disease**

- The foot-and-mouth disease is a highly communicable disease affecting cloven-footed animals. It is characterized by fever, formation of vesicles and blisters in the mouth, udder, and teats andon the skin between the toes and above the hoofs. Animals recovered from the disease present a characteristically rough coat and deformation of the hoof.
- In India, the disease is widespread and assumes a position of importance in livestock industry. The disease spreads by direct contact or indirectly through infected water, manure, hay and pastures. It is also conveyed by cattle attendants. It is known to spread through recovered animals, field rats, porcupines and birds.

**Rabies (Mad dog disease)**

- Rabies is a disease of dogs, foxes, wolves, hyenas and in some places, it is a disease of bats which feed on blood.
- The disease is passed to other animals or to people if they are bitten by an animal with rabies. The germs which cause rabies live in the saliva of the sick (rabid) animal. This is a killer disease but not every dog which bites is infected with rabies.
- When the rabid animal bites another animal or human, the germs which live in its saliva pass into the body through the wound caused by the bite. The germs travel along the nerves to the brain. The time between the bite and the first appearance of signs that the bitten animal or human has been infected can take from 2 to 10 weeks or more. The time taken depends on the distance of the bite from the brain. If the bite is on the face or head, the bitten animal or human will quickly show signs, but if the bite is on the leg it will take much longer for signs to develop.

**POX**

- **Epidemiology:** sheep-pox is a highly contagious disease. It causes a mortality of 20 to 50 per cent in animals below the age of 6 months, and causes damage to the wool and skin in adults. Of the pock diseases, sheep-pox ranks only



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second to human small-pox in virulence. The disease is transmissible to in-contact goats but not to other species of animals. It, however, spreads slowly.

**Blue tongue**

- Bluetongue, a disease which is transmitted by midges, infects domestic and wild ruminants and also camelids, however sheep are particularly badly affected. Cattle, although infected more frequently than sheep, do not always show signs of disease. Virus spreads between animals occurs via the midges of Culicoides species.
- The likelihood of mechanical transmission between herds and flocks, or indeed within a herd or flock, by unhygienic practices (the use of contaminated surgical equipment or hypodermic needles) may be a possibility.

## Shifting Monsoon patterns

The India Meteorological Department (IMD) asserted that the monsoon has begun to retreat from Rajasthan.

A monsoon is a seasonal change in the direction of the prevailing, or strongest, winds of a region. Monsoons cause wet and dry seasons throughout much of the tropics. Monsoons are most often associated with the Indian Ocean. Monsoons always blow from cold to warm regions. The summer monsoon and the winter monsoon determine the climate for most of India and Southeast Asia.

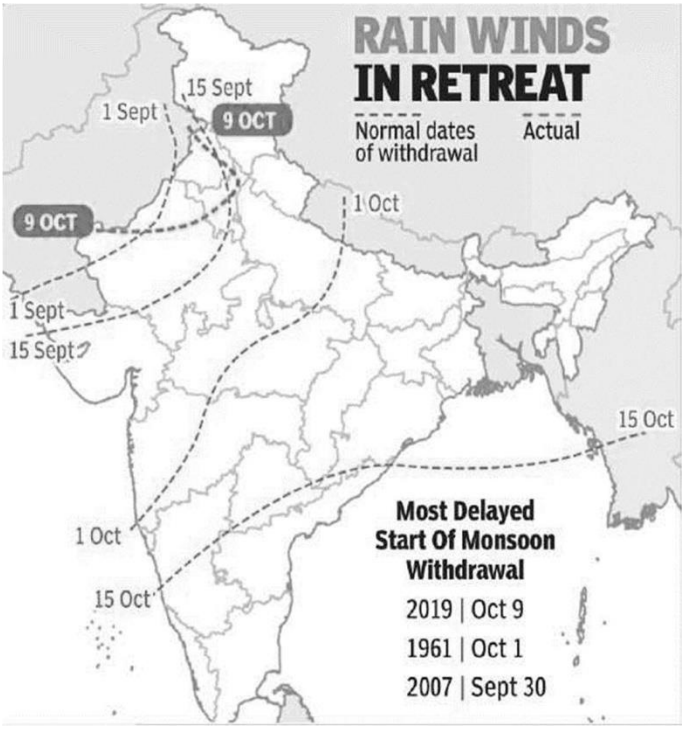
Theories

***Thermal theory of Admand hally- Based on phenomena of Land and Sea Breeze***

- According to the theory, in Summer- Sun is over Northern Hemisphere- Land gets heat up in comparison with ocean- Creating Low Pressure-Wind blows from Ocean to land bringing rain.
- In winter sun is over southern hemisphere-land mass cools rapidly-High pressure area over Asia-Low pressure centre on Indian Ocean.

***Dynamic theory of Flohn***

- Monsoon is result of the seasonal migration of planetary winds and pressure belts.
- The trade winds in both the hemisphere converge at equator and form Inter-tropical convergence zone (ITCZ)
- The northern limits called northern Inter-tropical convergence zone (NITCZ) and southern is called SITCZ (Southern Inter-tropical convergence zone)
- Doldrums lies between NITC and SITC-characterized by equatorial westerlies.
- During summer solstice-trade wind of southern hemisphere shift northward-creates south-east trade winds- produce monsoon.
- During winter solstice winds shifts southward- creating north-east trade winds- produce winter monsoon.




***Role of Tibet***

- Tibetan plateau produces anticyclone in mid troposphere- weakens sub- tropical jet streams (STJ) - produces tropical easterly jet stream
- Koteswaram tried to establish relationship between monsoon and the atmospheric conditions prevailing over Tibet Plateau.
- The northward movement of sub-tropical jet-streams is responsible for the onset of monsoon in India.
- The westerly jet causes high pressure over northern parts in winter-winds flow north and south causing north-east monsoon.

***Role of jet streams***

- The jet streams are a narrow belt of high altitude westerly winds in the troposphere.



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- Tropical easterly jet streams are low level jet streams in northern hemisphere of southern Asia and northern Africa.
- It comes into existence when STJ moves northward.
- It does not come into existence if snow over Tibet does not melt, hampering monsoon in India.

**Retreating monsoon mechanism:**

- The northeast monsoon derives its name from the direction in which it travels – from the northeast to the southwest.
- The reversal of direction in the lower-atmosphere moisture-laden winds happens primarily due to the southward movement of Inter Tropical Convergence Zone (ITCZ) during the withdrawal phase.
- The ITCZ is a dynamic region near the Equator where the trade winds of the northern and southern hemispheres come together.
- The intense sun and warm waters of the ocean heat up the air in this region and increase its moisture content. As the air rises, it cools, and releases the accumulated moisture, thus bringing rainfall.
- During the monsoon season, this ITCZ is located over the Indian landmass. By September, as the temperature in the northern hemisphere begins to go down, the ITCZ starts moving southwards, towards the Equator.
- Whereas in the southern hemisphere, the summer season begins to take shape.

**El-Nino and La Nina seasonal impacts**

- El Nino and La Nina are mutually opposite phenomena, during which an abnormal warming or cooling of sea surface temperatures is observed in the Pacific Ocean along the equator, off the coast of South America.
- Together they constitute what is known as the El Niño-Southern Oscillation system, or ENSO for short.
- ENSO conditions can alter both temperatures and rainfall globally, due to their strong interference on global atmospheric circulations.
- It is a recurring phenomenon and the change in temperature is accompanied by changes in the patterns of upper and lower level winds, sea level pressure, and tropical rainfall across the Pacific Basin.
- Normally, El Nino and La Nina occur every four to five years. El Nino is more frequent than La Nina.

| Country | Normal condition | El-Nino | La-Nina |
|---|---|---|---|
| **India** | Rainfall | Weak walker cell over Indian ocean-causing drought | Strong walker cell over Indian ocean-causing flood |
| **Australia** | Rainfall due to warm water in eastern pacific Australia | Weak walker circulation over pacific in eastern Australia- causing warm and dry conditions | Strong walker circulation over pacific in eastern Australia- causing floods and heavy rainfall |
| **South America** | Drought condition | Heavy rainfall over the coast of Peru causing floods and weakens the trade winds | Strong trade winds causing dry weather condition and draught. |

**Other factors affecting Indian monsoon**

**Indian ocean dipole:** The Indian Ocean Dipole (IOD) is defined by the difference in sea surface temperature between two areas (or poles, hence a dipole) – a western pole in the Arabian Sea (western Indian Ocean) and an eastern pole in the eastern Indian Ocean south of Indonesia. The IOD affects the climate of Australia and other countries that surround the Indian Ocean Basin, and is a significant contributor to rainfall variability in this region.

**Madden Julian oscillation:** The MJO is an *eastward moving* disturbance of clouds, rainfall, winds, and pressure that traverses the planet in the tropics and returns to its initial starting point in 30 to 60 days, on average. This atmospheric disturbance is distinct from ENSO, which once established, is associated with persistent features that last several seasons or longer over the Pacific Ocean basin. There can be multiple MJO events within a season, and so the MJO is best described as *intra-seasonal* tropical climate variability (i.e. varies on a week-to-week basis).

| Indian ocean dipole (IOD) | Consequences in India |
|---|---|
| **+ve IOD** | Western Indian ocean becomes warm and causes heavy rainfall |
| **-ve IOD** | Eastern Indian ocean becomes warm causing low or below average rainfall |



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| Combined phenomena | Consequences |
|---|---|
| **+ve IOD + La Nina** | Extreme flood |
| **-ve IOD + El Nino** | Extreme drought |
| **+ve IOD + El nino** | Average rainfall |
| **-ve IOD + La Nina** | Average rainfall |

| Madden Julian oscillation | Consequences in Indian subcontinent |
|---|---|
| **MJO + El Nino** | Increase in drought conditions |
| **MJO + La Nina** | Decrease in flood events |

**El-Nino impact on North-east monsoon**

Like the southwest monsoon, the northeast monsoon is also impacted by the warming and cooling of sea surface waters in the central Pacific Ocean. But the impact is opposite.

The northeast monsoon is known to receive a boost from El Niño, when the sea surface temperatures in the equatorial Pacific Ocean, off the western coast of South America, are warmer than usual.

When the opposite phenomena La Niña happens, rainfall during the northeast monsoon is known to get depressed.

**Other factors influencing monsoon in India**

> **Climate change:** Marked by extreme localised rainfall events, an unusually dry August and an unusually wet September, the summer monsoon and winter monsoon had a shift from their usual pattern.

> **Irrigation pattern:** The winter irrigation (November-March) actually strengthens the monsoon rains over the region for the following year and also reduces intra-seasonal variations in rainfall. However, with year-round irrigation, there is a noticeable decrease in the summer monsoon rainfall.

> **Aerosols and dust:** The local factors that have been shown to affect the monsoon rainfall in India. In a recent study in 2022, researchers at IIT Bhubaneswar have shown that dust transported to the Arabian sea from the Middle-Eastern deserts (the Sahara and the Sinai) could increase rainfall in India and south Asia over short time scales of one or two weeks.

## Cyclone intensification

As Earth's climate warms, more storms are growing quickly from relat ively weak tropical storms to Category 3 or higher hurricanes in under 24 hours.

**Tropical cyclones**

- **Tropical cyclone**, or **typhoon** or **hurricane** are severe atmospheric disturbance that originates over tropical oceans.
- Tropical cyclones have very low atmospheric pressures in the calm, clear centre (the eye) of a circular structure of rain, cloud, and very high winds.
- Because of the Earth's rotation, they rotate clockwise in the Southern Hemisphere and counter-clockwise in the Northern.
- They may be 50–500 mi (80–800 km) in diameter, and sustained winds in excess of 100 mph (160 kph) are common.
- In the eye, however, the winds drop abruptly to light breezes or even complete calm. The lowest sea-level pressures on Earth occur in or near the eye.
- In the North Atlantic Ocean and the eastern North Pacific,

**Melting Ice and ocean acidification**

Scientists have predicted that by 2050, Arctic sea ice in this region will no longer survive the increasingly warm summers. As a result, the ocean's chemistry will grow more acidic, creating life-threatening problems for the diverse population of sea creatures, plants and other living things that depend on a healthy ocean.

**Mechanism for Ocean acidification and melting**

- The water under the sea ice, which had a deficit of carbon dioxide, now is exposed to the atmospheric carbon dioxide and can take it up freely.
- The seawater mixed with meltwater is light and can't mix easily into deeper waters, which means the carbon dioxide is concentrated at the surface.
- The meltwater dilutes the carbonate ion concentration in the seawater, weakening its ability to neutralise the carbon dioxide into bicarbonate and rapidly decreasing ocean pH.



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these storms are called hurricanes. In the western North Pacific, they are referred to as typhoons. Elsewhere they are called tropical cyclones or, simply, cyclones.

**Frontogenesis**

- Frontogenesis is the generation or intensification of a front.
- It occurs when warm air converges onto colder air, and the horizontal temperature gradient amplifies by at least an order of magnitude.
- Whenever a region experiences horizontal convergence (and therefore uplift), any pre- existing gradient will increase.
- A prerequisite for frontogenesis is that the atmosphere is *baroclinic*, i.e. That temperature advection occurs.

**Role of Coriolis force on cyclone**

- Cyclones are low-pressure systems that suck air into their centre, or "eye."
- In the Northern Hemisphere, fluids from high-pressure systems pass low-pressure systems to their right. As air masses are pulled into cyclones from all directions, they are deflected, and the storm system— a hurricane—seems to rotate counter-clockwise.
- In the Southern Hemisphere, currents are deflected to the left. As a result, storm systems seem to rotate clockwise.

**Anti-cyclonic conditions:**

- Anticyclones are often regions of clear skies and sunny weather in summer; at other times of the year, cloudy and foggy weather—especially over wet ground, snow cover, and the ocean—may be more typical.

| Hemisphere | Cyclone |
|---|---|
| Northern | Anti-clock wise |
| Southern | Clock wise |

- Winter anticyclones produce colder than average temperatures at the surface, particularly if the skies remain clear.
- Anticyclones are responsible for periods of little or no rain, and such periods may be prolonged in association with blocking highs.
- Desert regions of the world generally have anti-cyclonic conditions.

**Climate change impact on cyclones**

- Climate change is making hurricanes wetter, windier and altogether more intense.
- It is causing storms to travel more slowly, meaning they can dump more water in one place. Ocean heat is contained near the water's surface. The additional heat due to climate change can fuel a storm's intensity and power stronger winds.
- Climate change boosts the amount of rainfall delivered by a storm. Because a warmer atmosphere can also hold more moisture, water vapor builds up until clouds break, sending down heavy rain.
- The typical "season" for Hurricanes is shifting, as climate warming creates conditions conducive to storms in more months of the year.
- Hurricanes are tended to make landfall in regions far outside the historic norm.

**Dvorak technique**

- It was first developed in 1969 and tested for observing storms in the northwest Pacific Ocean.
- Forecasters used the available satellite images obtained from polar orbiting satellites to examine the features of the developing tropical storms (hurricanes, cyclones and typhoons).
- During day time, images in the visible spectrum were used while at night, the ocean would be observed using infrared images.
- The Dvorak technique was a cloud pattern recognition technique based on a concept model of the development and decay of the tropical cyclone.

**Conclusion**

Even the most stringent mitigation efforts cannot avoid some impacts of climate change over the next few decades. Climate change impacts such as rapid intensification of hurricanes can be seen now. This makes adaptation essential, particularly in addressing near-term impacts. However, unmitigated climate change would, in the long term, be likely to exceed our capacity to adapt. It is essential, then, to develop a portfolio or mix of strategies that includes mitigation, adaptation, tech- nological development (to enhance both adaptation and mitigation) and research (on climate science, impacts, adaptation and mitigation).



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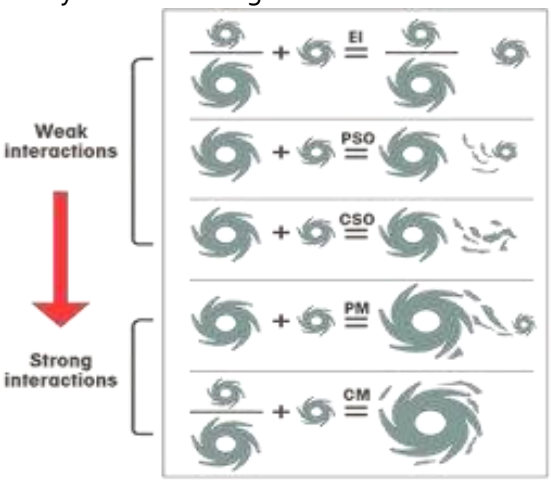
## FUJIWHARA EFFECT

Recently, super typhoon Hinnamnor, the strongest tropical cyclone of the year was moving towards Taiwan from the western Pacific Ocean. At the same time, another tropical storm called Gardo was moving towards Hinnamnor from its southeast direction. Hinnamnor devoured Gardo and eventually made landfall in South Korea.




**Elastic Interaction (EI):** Interaction of vortices (storms) of same or different sizes, resulting in changes only in the direction of motion. This is the most commonly seen interaction

**Partial Straining-Out (PSO):** Interaction of vortices of unequal sizes. Part of the smaller vortex lost to the atmosphere.

**Complete Straining-Out (CSO):** Interaction of vortices of unequal sizes. The smaller vortex completely lost to the atmosphere

**Partial Merger (PM):** Interaction of vortices of unequal sizes Part of the smaller vortex merged to the bigger vortex

**Complete Merger (CM):** Interaction of vortices of same or different sizes, resulting in complete merger of both the storms

### Pre-Connect

- Cyclones are huge swirling wind circulations that form over warm ocean waters and are named depending on where they form.
- Cyclones are fuelled by heat, wind, and moisture and under the right conditions can gain significant strength and size. The big ones can have diameters of more than 1,000 km and wind speeds of over 250 km per hour.
- Cyclones are given many names in different regions of the world-Tropical cyclones-Indian Ocean, Willy-willies-north-western Australia, Typhoons-China Sea, and Pacific Ocean, Hurricanes in the Caribbean Sea, and Atlantic Ocean.
- The world is seeing a rise in cyclonic formations and in cases of cyclones merging to form mega cyclones due to the warming of oceans.

### Fujiwhara Effect

- It is any interactivity between tropical storms formed around the same time in the same ocean region with their centers or eyes at a distance of less than 1,400 km their intensity can vary between a depression (wind speed under 63 km per hour) and a super typhoon (wind speed over 209 km per hour).
- The interaction of storms leads to changes in the track and intensity of either or both storm systems.
- In rare cases, the two systems could merge, especially when they are of similar size and intensity, to form a bigger storm.
- In 2020 hurricanes Marco and Laura formed back to back in the small region of the Gulf of Mexico and created a possibility of the Fujiwhara Effect.

### Characteristics of the Fujiwhara Effect

**There are five different ways in which Fujiwhara Effect can take place**

- ✓ It is an elastic interaction. Here only the direction of motion of the storms changes. It is the most common case.
- ✓ It is partial straining out in which a part of the smaller storm is lost to the atmosphere.
- ✓ It is completely straining out in which the smaller storm is completely lost to the atmosphere. The straining out does not happen for storms of equal strength.
- ✓ It is a partial merger in which the smaller storm merges into the bigger one.
- ✓ It is a complete merger that takes place between two storms of similar strength.
- o **Merging of Extratropical cyclones:** A binary interaction is seen between nearby extratropical cyclones when within 2,000 kilometers of each other, with significant acceleration occurring when the low-pressure areas are within 1,100 kilometers of one another. The precise results of such interactions depend on factors such as the size of the two cyclones, their distance from each other, and the prevailing atmospheric conditions around them.
- o **Merging of Extratropical and Tropical Cyclones:** When entering higher latitudes, tropical cyclones can interact with extratropical cyclones. Classic cases in the Atlantic include the famed Perfect Storm of October 1991 and Super storm Sandy of October 2012.

### Adverse Impact of the Fujiwhara Effect

- It can bring massive rain causing urban flooding, and destruction of property.
- It is also attributed to the sudden high wind causing damage to windfarms.
- Due to its unpredictable nature, it can cause the deaths of innocents in coastal regions.



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**Mitigation Measures**

- Early prediction and warning in coastal areas as well as the evacuation of people is the key to saving thousands of lives.
- The region where the maximum impact of the cyclone is likely should be completely secured by moving residents away. It is a strategy known as 'horizontal evacuation'. It is seen as essential.
- Programs like the National Cyclone Risk Mitigation Project (NCRMP) by India address the vulnerability of the coastal community to cyclones.
- Coordination and Cooperation between the Nations which are affected by cyclones annually: In this, a forum like the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation can play a major role.
- On the local level Cyclone Shelters, Engineered Structures, and Coastal Shelter Belts should be built.
- Plantation of Mangroves greatly reduces the impact of incoming cyclones thus protecting the coastal economy as well as ecology.

## Millets

Millets have the potential to help achieve the sustainable development goals (SDGs) mainly SDG 2 (Zero Hunger), SDG3 (Good Health and Well-being), SDG 12 (Sustainable Consumption and Production), and SDG 13 (Climate Action). India has signaled the beginning of preparations for the International Year of Millets 2023, designated the year 2021 by the UNGA following an initiative by New Delhi.

**Jowar:** The United States, China, Australia, India, Argentina, Nigeria, and Sudan are the major producers

**Pre-Connect**

**International Year of Millets (IYoM)-2023**

- In India, millets are mainly a Kharif crop. During 2018-19, three millet crops — bajra (3.67%), jowar (2.13%), and ragi (0.48%) — accounted for about 7 percent of the gross cropped area in the country.
- The Government of India had proposed to United Nations for declaring 2023 as the International Year of Millets (IYOM). The proposal of India was supported by 72 countries and United Nations General Assembly (UNGA) declared 2023 as the International Year of Millets on 5th March 2021.
- The Government of India has decided to celebrate IYOM, 2023 to make it a peoples' movement so that Indian millets, recipes, and value-added products are accepted globally.

| Top 5 States | Millet Crops |
|---|---|
| Rajasthan | Bajra/Sorghum |
| Karnataka | Jowar/Ragi |
| Maharashtra | Ragi/Jowar |
| Uttar Pradesh | Bajra |
| Haryana | Bajra |

### Millet Estimates 2021 of major countries

| Country | Estimates (Lakh Ton) |
|---|---|
| Russia (Europe) | 3.60 |
| Ukraine (Europe) | 1.80 |
| Australia (Europe) | 0.37 |
| Peru (America) | 0.15 |
| India (Asia) | 115 |
| China (Asia) | 27 |
| Pakistan (Asia) | 3.15 |
| Nepal (Asia) | 3.14 |
| Burma (Asia) | 2.40 |
| Yemen (Asia) | 0.30 |
| Bangladesh (Asia) | 0.07 |

| Africa Country | Estimates (Lakh Ton) | Africa Country | Estimates (Lakh Ton) |
|---|---|---|---|
| Niger | 38 | Kenya | 0.9 |
| Nigeria | 20 | Cotedlvoire | 1.65 |
| Mali | 18 | Gambia | 0.60 |
| Sudan | 15 | Angola | 0.50 |
| Ethiopia | 11 | Congo | 0.50 |
| Burkina Faso | 10 | Sierra Leone | 0.40 |
| Senegal | 9 | Zambia | 0.35 |
| Chad | 6.89 | Togo | 0.30 |
| Tanzania | 3.25 | Benin | 0.25 |
| Uganda | 2.4 | Eritrea | 0.25 |
| Guinea | 2.20 | Guinea-Bissau | 0.20 |
| Ghana | 1.75 | Mozambique | 0.20 |
| Zimbabwe | 1.04 | Burundi | 0.11 |
| Cameroon | 1.00 | Central African Republic | 0.10 |

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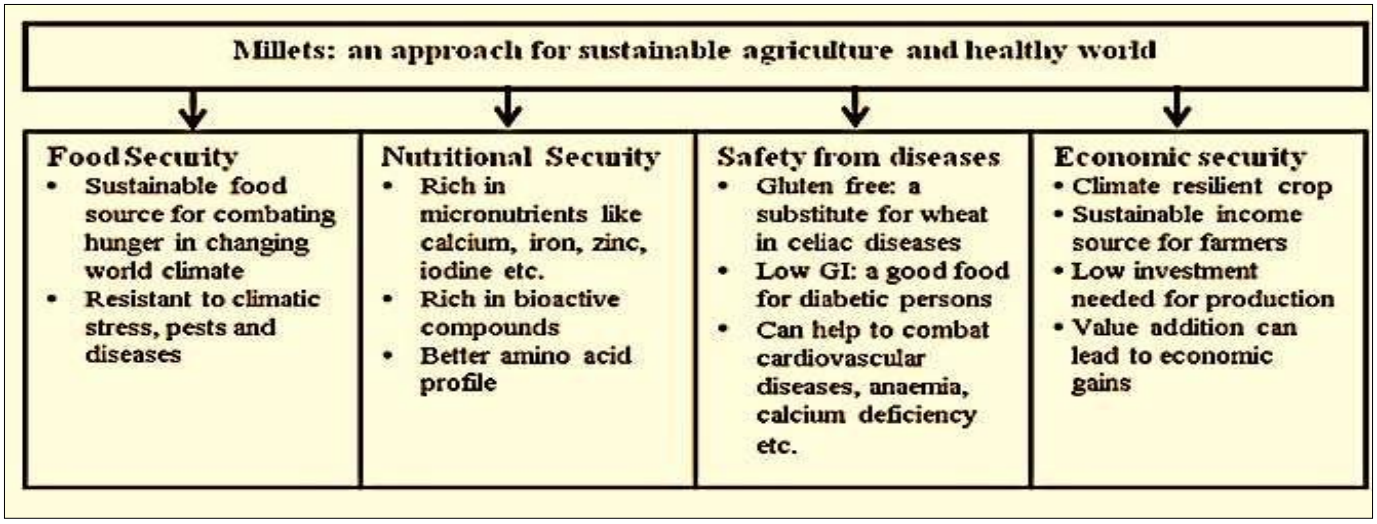
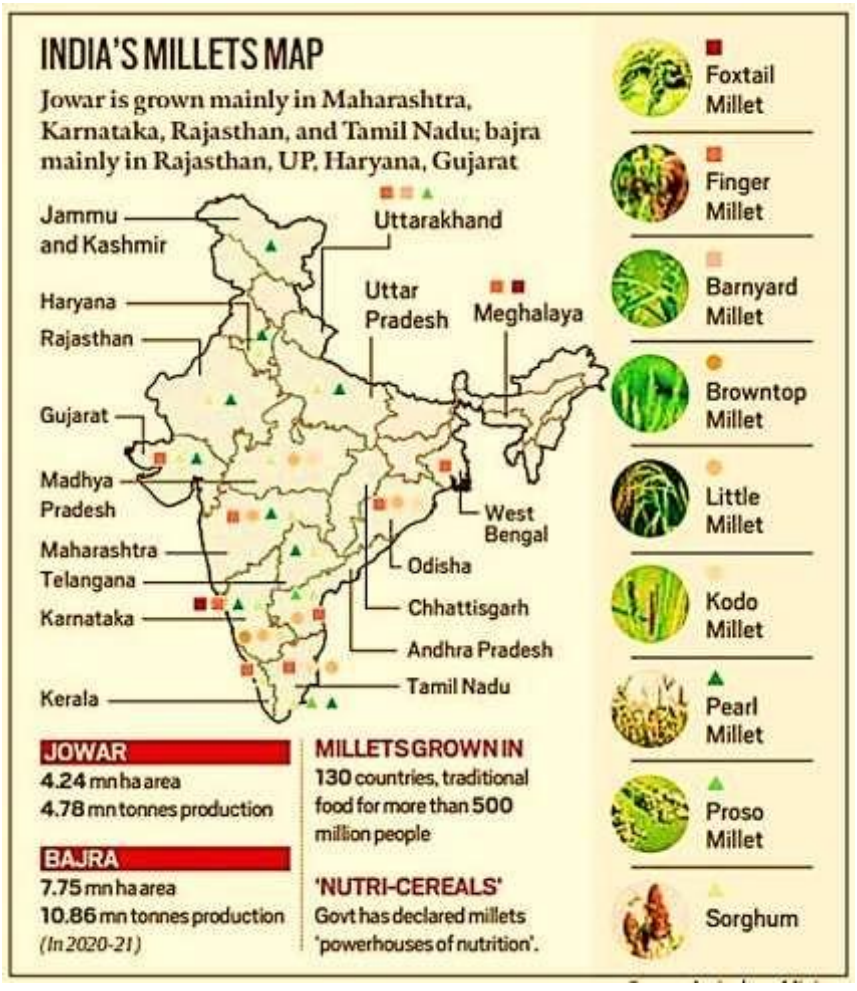



## Millets

- Millets are a collective group of small-seeded annual grasses that are grown as grain crops, primarily on marginal land in dry areas of temperate, sub-tropical, and tropical regions.
- The word millets are used to describe small-grained cereals like sorghum (jowar), pearl millet (bajra), foxtail millet (kangni/ Italian millet), little millet (kutki), kodo millet, finger millet (ragi/ mandua), proso millet (cheena/ common millet), barnyard millet (sawa/ sanwa/ jhangora), and brown top millet (korale).
- They were among the first crops to be domesticated. There is evidence of the consumption of millet by the Indus valley people (3,000 BC).
- The several varieties that are now grown around the world were first cultivated in India.
- West Africa, China, and Japan are home to indigenous varieties of the millet crop.




## Advantages of Millets

- ✓ They are considered to be "powerhouses of nutrition".
- ✓ On April 10, 2018, the Agriculture Ministry declared millets as "Nutri Cereals".
- ✓ They contain 7-12% protein, 2-5% fat, 65-75% carbohydrates, and 15-20% dietary fiber.
- ✓ It helps lower cholesterol, as it is rich in polyunsaturated fatty acids and omega-3 fatty acids.
- ✓ They contain higher protein, fat, and fiber content.
- ✓ They can thrive at relatively high temperatures (thermophilic) and reproduce in a limited water supply (xerophilic).
- ✓ Millets are multipurpose: They consume 70 percent less water than rice; grow in half the time as wheat, and require 40 percent less energy in processing.



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- ✓ They are the one-stop solution in the wake of climate change, water scarcity, and drought conditions along with high nutritive value to provide sustainable food security.

**Steps Taken by the Indian Government for Promotion of Millets since 2018**

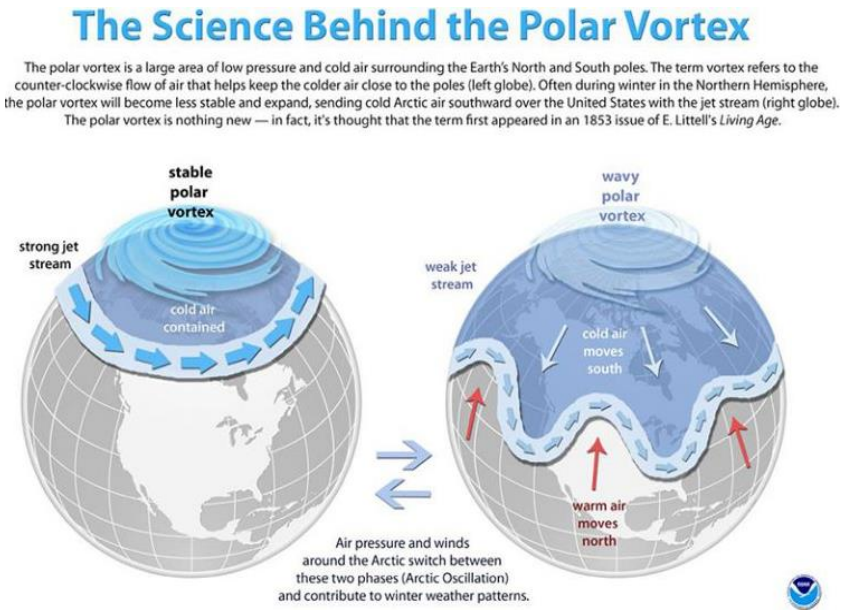
- ✓ The government in 2018 declared millets as "Nutri-Cereals", considering their "high nutritive value" and also "anti-diabetic properties.
- ✓ Launched "Sub Mission on Millets" under National Food Security Mission in 2018.
- ✓ Several States in India launched the mission on Millets. Karnataka government's Initiative for Millets as "The Food of the Future" (incentive to farmers Rs. 10000/ha for the Cultivation of millets). Maharashtra promoting Millets through Project on Climate Resilient Agriculture.
- ✓ Millets were included under **POSHAN MISSION Abhiyan by the Ministry of Women & Child Development**.
- ✓ On March 3, 2021, the United Nations General Assembly (UNGA) adopted a resolution to declare 2023 as the International Year of Millets.

## Bomb Cyclone

A bomb cyclone in large parts of the US and Canada has resulted in very low temperature causing dozens of deaths, flight delays, power outages, etc.

**Bomb Cyclone and Bombogenesis**

- A cyclone refers to a weather system in which winds rotate inwardly to an area of low atmospheric pressure.
- In case of a bomb cyclone, the process is very quick, it forms when air near the Earth's surface rises quickly in the atmosphere, triggering a sudden drop in pressure of at least 24 milibar within 24 hours.
- Bombogenesis is the name given to the process of fast intensification.
- This usually happens when a warm air mass collides with a cold airmass.
- In this particular case, air from the Arctic ploughed into tropical air from the Gulf of Mexico, forming a depression bringing rain and snow.
- In the US and Canada, very cold Arctic air was pulled by this cyclone, causing drop in temperature.




**Formation**

- ➢ The Eastern Seaboard of the US is the most common for the formation of Bomb Cyclone.
- ➢ It's because storms in the mid-latitudes (temperate zone), which cover almost the entire US, draw their energy from large temperature contrasts.
- ➢ Along the U.S. East Coast during winter, there's a naturally potent thermal contrast between the cool land and the warm Gulf Stream current.
- ➢ Over the warmer ocean, heat and moisture are abundant.
- ➢ But as cool continental air moves above and creates a large difference in temperature, the lower atmosphere becomes unstable and buoyant.
- ➢ The air rises, cools and condenses, forming clouds and precipitation.
- ➢ Intense cyclones require favourable upper atmospheric conditions like 'Jet Streaks'.
- ➢ When a strong jet streak overlies a developing low-pressure system, it creates a feedback pattern that makes warm air rise at an increasing rate. This allows the pressure to drop rapidly at the centre of the system.
- ➢ As the pressure drops, winds strengthen around the storm.
- ➢ In this particular case, eventually, the Arctic air will get warm which will lead to lower pressure difference and the storm will lose its strength.



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**Effects of Bomb Cyclones**

- ✓ Temperatures fall drastically.
- ✓ Snow in affected regions,
- ✓ Worsens weather conditions, e.g., when combined with blizzards and snow in the Great Plains.
- ✓ According to U.S. National Weather Service, such cold conditions can lead to frostbites on exposed skin, hypothermia and even death if exposed to these conditions for too long.
- ✓ It has also led to deaths due to power outages, poor visibility and accidents.
- ✓ Affects work due to flights and travel disruptions.

**Analytica**

**Climate Change and Bomb Cyclones**

- Atmospheric warming due to GHG effect will worsen the impact of Bomb Cyclone. Warmer sea surface temperatures strengthen tropical storm wind speeds, giving them the potential to deliver more harm in case of landfall.
- Sea level rise is already making coastal storms more destructive and is likely to endure. Sea level rise increases the risk of coastal flooding and has intensified the impact of several recent storms.
- The warming of mid-latitudes may be changing the pattern of tropical storms, leading to more storms occurring at higher latitudes.

**Adaptation: Bomb Cyclone**

Making immediate reductions in greenhouse gas emissions, to halt global warming, is essential to reduce the risk of the strongest storms in the future.

- o Preserving coastal wetlands, dunes, and reefs to absorb storm surge
- o Ensuring new building and development do not occur in flood-prone areas
- o Improving infrastructure that affords coastal protection for instance-seawalls
- o Elevating vulnerable buildings to reduce the potential for flood damage
- o Encouraging residents in areas

## Joshimath Crisis

After cracks appeared in many roads and hundreds of houses of Joshimath, Uttarakhand, authorities on 8 January 2023 declared it a landslide and subsidence-hit zone. The announcement came after a high-level meeting took place among the senior officials of the Central government, Uttarakhand state officials, and top officers from agencies including the National Disaster Management Authority (NDMA), Geological Survey of India (GSI) and the National Institute of Hydrology (NIH).

**What can be the reasons behind Joshimath subsidence?**

1. The exact reason behind Joshimath land subsidence is still unknown but experts suggest that the incident might have occurred because of unplanned construction, overpopulation, obstruction of the natural flow of water and hydel power activities.
2. Not only this, the area is a seismic zone, which makes it prone to frequent earthquakes.
3. The possibility of such an incident happening in the region was first highlighted around 50 years when the MC Mishra committee report was published and it cautioned against "unplanned development in this area, and identified the natural vulnerabilities."
4. According to experts, Joshimath city has been built on an ancient landslide material — meaning it rests on a deposit of sand and stone, not rock, which doesn't have high load-bearing capacity.
5. This makes the area extremely vulnerable to ever-burgeoning infrastructure and population.
6. Moreover, the lack of a proper drainage system might have also contributed to the sinking of the area.
7. Experts say that unplanned and unauthorised construction has led to the blocking of the natural flow of water, which eventually results in frequent landslides.
8. Apart from the aforementioned possible reasons, reports have pointed out that subsidence in Joshimath might have been triggered by the reactivation of a geographic fault — defined as a fracture or zone of fractures between two blocks of rock — where the Indian Plate has pushed under the Eurasian Plate along the Himalayas.

**What is land subsidence?**

1. According to the **National Oceanic and Atmospheric Administration (NOAA)**, subsidence is the "**sinking of the ground because of underground material movement**".



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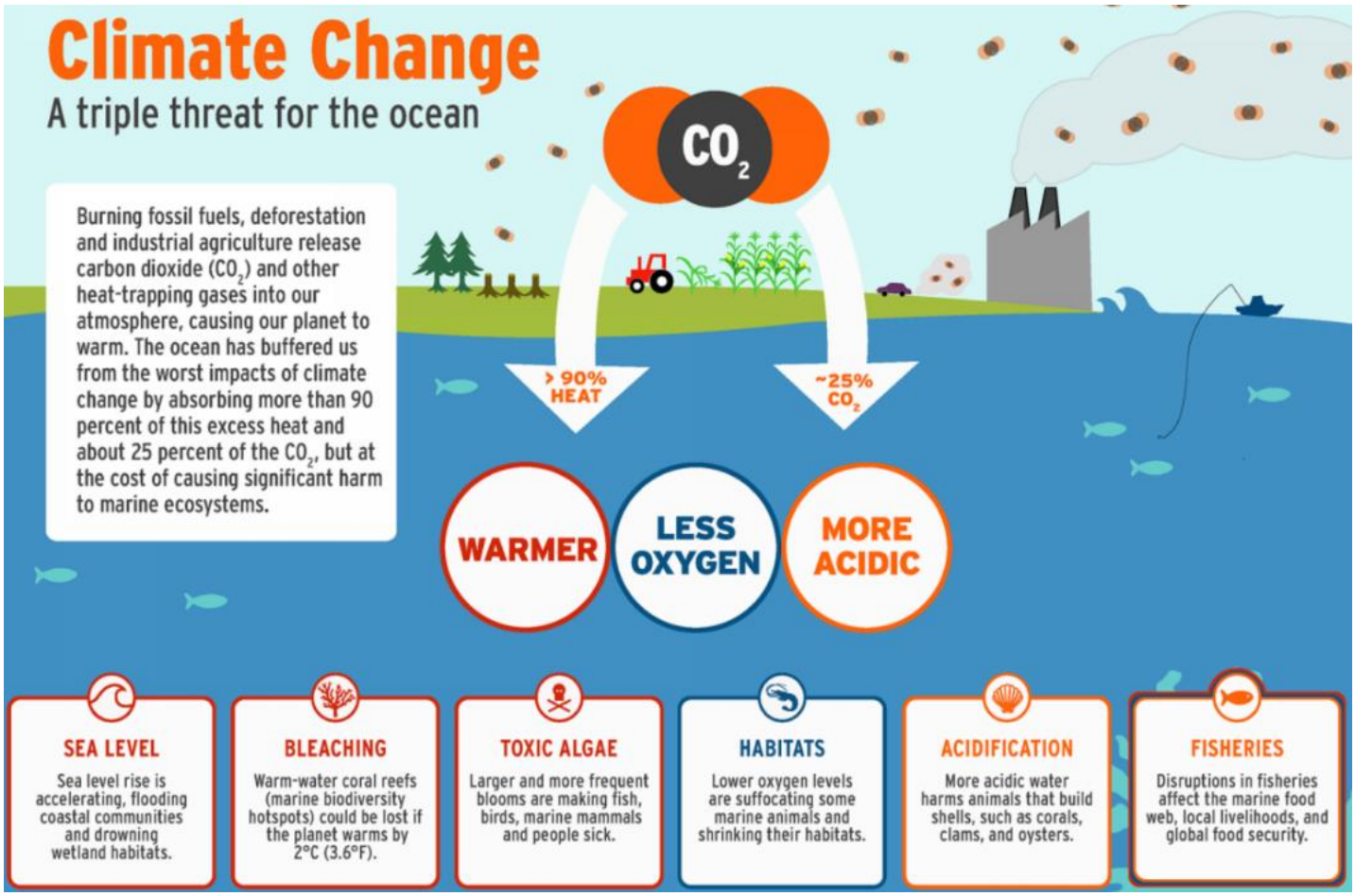
2. It can happen for a host of reasons, **man-made or natural**, such as the **removal of water, oil, or natural resources**, along with mining activities.
3. **Earthquakes**, **soil erosion**, and **soil compaction** are also some of the well-known causes of subsidence.
4. This phenomenon can "**happen over very large areas like whole states or provinces**, or very small areas like the **corner of your yard**.

## Warming of the Ocean

Recently, a study published in the Journal of Atmospheric Sciences analyses factors that drive heating trends in the world's oceans. As per the study, the **world's oceans recorded extreme heating in 2022** on account of anthropological activities like GHG emissions.




**Pre-Connect**

- The ocean absorbs vast quantities of heat as a result of increased concentrations of greenhouse gases in the atmosphere, mainly from fossil fuel consumption.
- The Fifth Assessment Report published by the Intergovernmental Panel on Climate Change (IPCC) in 2013 revealed that the ocean had absorbed more than 93% of the excess heat from greenhouse gas emissions since the 1970s.
- When sunlight reaches the earth, oceans absorb this energy and store it as heat.
- While the heat is first absorbed in the surface of the water body, some of it is eventually disbursed throughout.
- The heat stored in the ocean causes its water to expand, which is responsible for one-third to one-half of the global sea level rise.

**Key Findings of the Report**

➢ Spatial maps of ocean heating in 2022, relative to the mean 1981-2010 conditions, show significant warming in most ocean areas.



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- Atlantic and southern oceans are warming at a faster rate than other oceans.
- The increasing instances of heatwaves and droughts in the northern hemisphere is due to the intensive ocean warming in the mid-latitude Pacific and Atlantic oceans.
- Salinity trends for 2022 show that most of the Pacific and East Indian Oceans are currently undergoing a **freshening**, while mid-latitude Atlantic, the Mediterranean Sea and West Indian oceans are **becoming more saline**.
- The rise in ocean temperatures is a **result of** the earth's **energy imbalance**, primarily associated with an increase in greenhouse gas emissions. These gases trap heat in a blanket around the earth, not allowing it to escape, thus raising the temperature of the earth's surface and leading to global warming.
- The global long-term warming trend is so steady that annual records continue to be set with each New Year, as noted in the last four years.
- The study used in-situ data obtained from the World Ocean Database.

**Why Ocean Heat Matters**

- ✓ Covering more than **70% of Earth's surface**, the global ocean has a very high heat capacity. It has **absorbed 90% of the warming that has occurred in recent decades** due to increasing greenhouse gases, and the top few meters of the ocean store as much heat as Earth's entire atmosphere.
- ✓ The **distribution of excess heat in the ocean is not uniform**, with the greatest ocean warming occurring in the **Southern Hemisphere** and contributing to the subsurface melting of Antarctic ice shelves.
- ✓ The ocean's ability to absorb excess heat has **shielded humans from even more rapid climate changes**. Without this oceanic buffer, global temperatures would have risen much more than they have done to date.

**Impact**

| | |
|---|---|
| **Biodiversity** | ○ The effects of ocean warming **include** sea level rise due to thermal expansion, coral bleaching, accelerated melting of Earth's major ice sheets, intensified hurricanes, and changes in ocean health and biochemistry. |
| **Impact on marine species and ecosystems** | ○ Marine fishes, seabirds and marine mammals all face very high risks from increasing temperatures, including high levels of mortalities, loss of breeding grounds and mass movements as species search for favorable environmental conditions. Coral reefs are also affected by increasing temperatures which cause coral bleaching and increase their risk of mortality. |
| **Impact on humans** | ○ A 2012 report by the Food and Agriculture Organization of the United Nations estimates that marine and freshwater capture fisheries and aquaculture provide 4.3 billion people with about 15% of their animal protein.<br>○ Fisheries and aquaculture are also a source of income for millions of people worldwide. By altering distributions of fish stocks and increasing the vulnerability of fish species to diseases, ocean warming is a serious risk to food security and people's livelihoods globally. Economic losses related to ocean warming are likely to run from tens to hundreds of millions of dollars.<br>○ Rising temperatures also affect vegetation and reef-building species such as corals and mangroves, which protect coastlines from erosion and sea-level rise. Rising sea levels and erosion will particularly affect low-lying island countries in the Pacific Ocean, destroying housing and infrastructure and forcing people to relocate.<br>○ The rise in sea surface temperatures is causing more severe hurricanes and the intensification of El Niño events bringing droughts and floods. This can have significant socio-economic and health effects in some regions of the world.<br>○ Warming ocean temperatures are linked to the **increase and spread of diseases** in marine species. Humans risk direct transmission of these diseases when consuming marine species, or from infections of wounds exposed in marine environments. |



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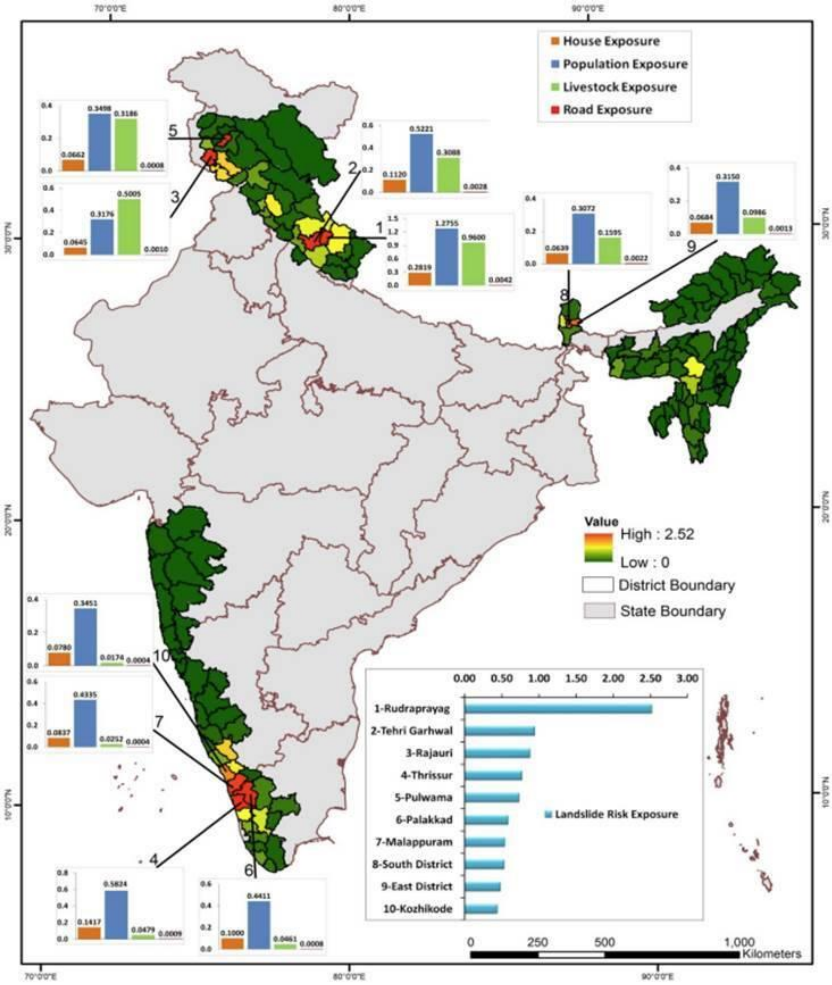
## Landslide atlas of India

The Indian Space Research Organisation (ISRO) recently released the Landslide Atlas of India, a detailed guide identifying landslide hotspots in the country.

**About Landslides**

- These are natural disasters occurring mainly in mountainous terrains where there are conducive conditions of soil, rock, geology and slope. A sudden movement of rock, boulders, earth or debris down a slope is termed as a landslide.
- Naturally it is triggered by heavy rainfall, earthquakes, snow melting and undercutting of slopes due to flooding but anthropogenic activities such as excavation, cutting of hills and trees, excessive infrastructure development, and overgrazing by cattle.
- Some of the main factors that influence landslides are **lithology, geological structures like faults, hill slopes, drainage, geomorphology, land use and land cover, soil texture and depth, and weathering of rock**s.
- In India, rainfall-induced landslide events are more common.
- Landslides are classified into:
  - Type of materials involved such as rock, debris, soil, loose mud.
  - Type of movement of the material such fall, topple, slide, rotational slide or translational slide
  - Type of flow of the material. Another category is of landslides that spread laterally.




**About landslides Atlas and its suggestions**

- Landslides mapped in the ISRO atlas are mainly event-based and season-based.
- It is based on events during 1998 – 2022, primarily along the Himalayas and the Western Ghats. The pan-India landslide database classifies landslides into – seasonal (2014, 2017 monsoon seasons), event-based and route-based (2000 – 2017).
- India is considered among the top five landslide-prone countries globally, rainfall variability pattern is the single biggest cause for landslides in the country.
- About 12.6 per cent of the country's geographical land area is prone to landslides excluding snow covered area.
- Uttarakhand, Kerala, Jammu and Kashmir, Mizoram, Tripura, Nagaland and Arunachal Pradesh reported the highest number of landslides during 1998 – 2022.
- Mizoram has reported maximum number of landslides.
- The number of districts with the maximum landslide exposure are in Arunachal Pradesh (16), Kerala (14), Uttarakhand and Jammu and Kashmir (13 each), Himachal Pradesh, Assam and Maharashtra (11 each), Mizoram (8) and Nagaland (7).
- Kerala has been consistently reporting massive landslides since it suffered the century's worst floods in 2018.
-



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## ECONOMIC SURVEY-

- It is an **in-depth analysis of the state of the national economy** in the financial year that is coming to a close.
- Under the d**irection of the Chief Economic Advisor**, it is created by the department of economic affairs (DEA) economic division. The finance minister approves the survey after it has been created.

## CHAPTER 1- THE STATE OF THE ECONOMY 2022-23

**The global economy battles through a unique set of challenges -**

- The **first threat** to the third world decade that hampered global growth was the COVID-19 pandemic, which the WHO announced in January 2020.
- After the global economy was recovering from the pandemic inducted contraction, the Russia-Ukraine conflict -
    - **Erupted in February 2022,** sending commodity prices into a whirl and escalating already-present inflationary pressures.
    - Prices of essential commodities like crude oil, natural gas, wheat, and fertilizer skyrocketed due to the fighting.
    - The **Emerging Market Economies (EMEs)**, which were otherwise in the lower inflation zone because their governments had implemented a calibrated fiscal stimulus to address output decline in 2020, also experienced greater inflation due to rising commodity prices.

- **The third challenge**- emerged when nations undertook monetary tightening to refrain from inflation, causing growth to weaken.
    - **Monetary tightening** also drove capital flows to the safe- haven US market, contributed to rising sovereign bond yield, and depreciation of modern currencies against the US dollar.
    - Inflation and monetary tightening led to a **hardening of bond yield** across economies. They resulted in an outflow of equity capital from most of the economies around the world into the traditionally safe-haven market of the US.
    - The **capital flight subsequently strengthened the US dollar against** other currencies- the US Dollar index strengthened by 16.1% between January and September 2022.
    - The **CAD has widened** due to the other currencies' devaluation, increasing inflationary pressures in net importing nations.
    - Beginning in the second half of 2022, monetary tightening and rising inflation caused a **decline in worldwide output.**
    - Since August 2022, the global Purchasing Managers Index (PMI) composite index has been in the contractionary range. In the second half of 2022, the annual growth rates of international commerce, retail sales, and industrial production have all dramatically slowed.
    - High levels of governmental and private debt were further pressured by the rise in borrowing costs, endangering the financial system.
    - The fourth obstacle to growth was caused by countries slowing cross-border commerce to defend their respective economic spaces in the face of the possibility of global stagflation.
- The **fifth issue was growing as China** went through a significant slowdown brought on by its policies.
- The **loss of educational chances and income-generating prospects** brought on by the pandemic represents the sixth medium-term threat to growth.



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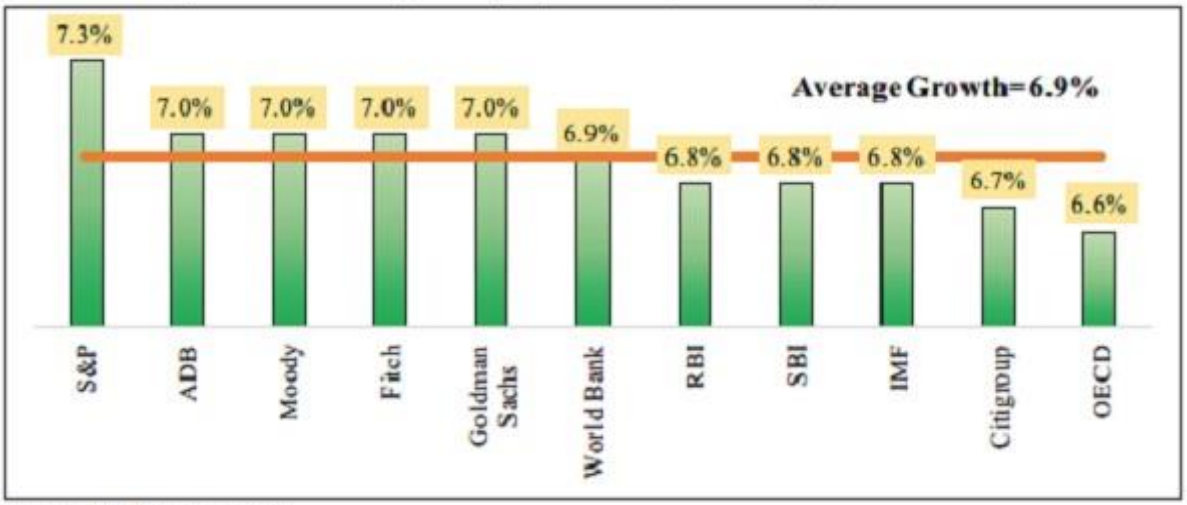
**Macroeconomic and growth challenges in the Indian economy-**

- The pandemic's effects on India were seen in a **sizable GDP decline in FY21.**
- Despite the Omicron wave of January 2022, the Indian economy began to improve the next year or FY22.
- Since the **pandemic's outbreak in January 2020, the third wave has had a different** impact on India's economy than its earlier waves.
- Mobility enabled by localized lockdowns, rapid vaccination coverage, mild symptoms, and quick recovery from the virus contributed to minimizing the loss of economic output in the January-March quarter of 2022.
- As a result, output in FY22 exceeded FY20 prior to the pandemic, with the Indian economy leading the way in a full recovery.
- A cautious optimism that it was possible to maintain physical mobility and engage in economic activity even though the experience inspired the pandemic with the Omicron variety.
- Thus, FY23 began with the conviction that the pandemic was swiftly abating and that India was ready to expand quickly and return to its pre-pandemic growth trajectory.
- The US dollar has gained value against several currencies, including the rupee, due to monetary tightening.
- However, while being one of the better-performing currencies globally, the rupee's slight devaluation may have increased domestic inflationary pressures and widened the CAD.
- Despite a small decline, global commodity prices are still higher than before the conflict.
- Due to India's growing pace, they have already increased CAD's size.
- India has enough foreign exchange reserves for FY23 to cover the CAD and intervene in the foreign exchange market to control currency volatility.

**India's economic resilience and growth drivers-**

**Figure I.17: India growth projections by various agencies for FY23**




Source: Various Agencies

Note: ADB stands for Asian Development Bank, IMF is International Monetary Fund

- **Geopolitical unrest in Europe** has largely been the cause of the RBI's tightening of monetary policy, the widening of the current account deficit, and the plateauing growth of exports.
- Numerous organizations around the world have been lowering their growth projections for the Indian economy as a result of these developments, which posed hazards to the country's economy in FY23.
- These predictions, including the NSO's advance estimations, generally fall between **6.5 and 7.0 per cent.**
- Despite the downward revision, the growth projection for FY23 is higher than that of nearly all major nations and even somewhat higher than that of the Indian economy over the decade prior to the pandemic.
- In 2022, according to the IMF, India will have one of the two fastest-growing large economies.
- If India is predicted to grow between 6.5 and 7.0 per cent despite significant global headwinds and tighter domestic monetary policy, and that too without the benefit of a base effect, it is a testament to India's underlying economic resilience and its capacity to recover, renew, and re-energize the country's growth drivers.
- The single most significant factor that led people to the streets to re-experience the "bazaar" was the nearly universal vaccination coverage in India, which the government managed. The market quickly became crowded, with service providers returning to resume business.



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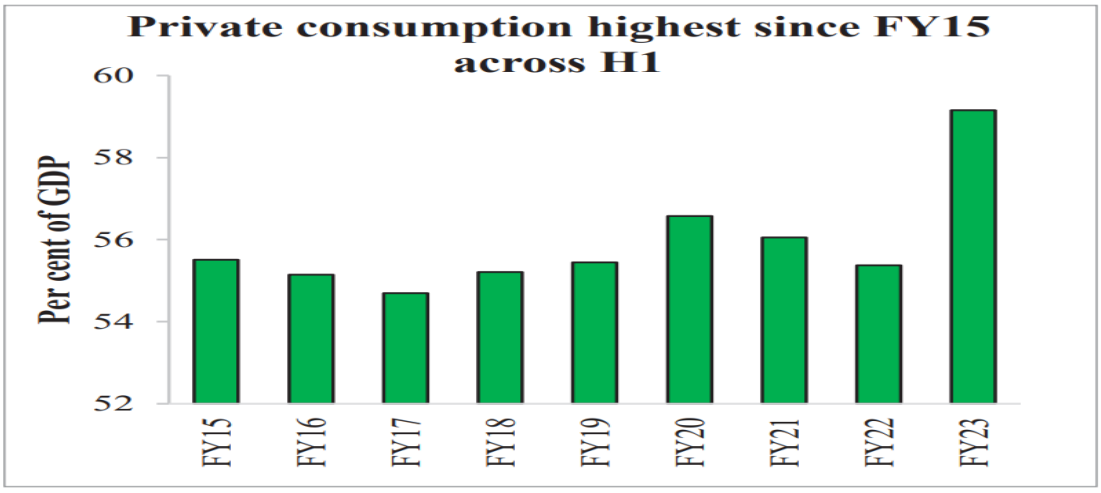
- The contact-based service providers, including those in restaurants, hotels, shopping centres, movie theatres, and tourist attractions, quickly built up a booming business and made a big contribution to maintaining customer feelings, as recorded in numerous studies.
- If the widespread vaccination program saved lives, on the one hand, it also acted as a health stimulant to boost consumer confidence and, in turn, the recovery and expansion of the economy.




- The release of **"pent-up" demand,** which is not specifically an Indian occurrence but demonstrates
    - a local phenomenon impacted by a growth in the percentage of consumption in disposable income, has also contributed to the recovery in consumption.
    - An even more significant recoil effect was created in India, where a major part of disposable income is spent as a result of a pandemic-induced decline in consumption.
    - Consequently, the consumption rebound can be long-lasting.
    - In India, personal loan growth is accelerating, which attests to a persistent discharge of "pent-up" consumer demand.
- The housing market also saw the **"release of pent-up desire."**
    - Demand for housing loans picked up.
    - As a result, housing inventories have decreased, home prices are stabilizing, and new home development is accelerating.
    - The building industry is recognized to carry numerous backward and forward links, stimulating them.
    - The universalization of vaccine coverage also significantly improves the housing market since, without it, the migrant labour force would not have been able to return and build new homes.
- Aside from housing, construction activity increased dramatically in FY23 as the central government and its public sector firms quickly deployed their much-expanded capital expenditure (Capex).
- The business investment and industrial operations have recovered due to an improvement in export demand, a pickup in consumption, and public capital expenditures. Their improved balance sheets have also played a significant role in achieving their spending commitments.
- I**ndia's banking industry has equally responded to the need for credit.**
    - The credit growth to the MSME sector has been remarkably high, over 30.5 per cent, on average, during Jan-Nov 2022, supported by the extended ECLGS of the central government.
    - The public sector banks' financial situation has significantly improved due to profits being posted consistently and the Insolvency and Bankruptcy Board of India moving quickly to resolve or liquidate their non-performing assets (NPAs).
    - In order to maintain the PSBs' strong capitalization and ensure that their Capital Risk-Weighted Adjusted Ratio (CRAR) stays comfortably above the levels of adequacy, the government has been providing enough budgetary support.
    - Banks' financial stability has enabled them to offset the decreased debt financing supplied so far in FY23 by corporate bonds and external commercial borrowings (ECBs). Corporate bond yields have increased, while ECB interest and hedging expenses have increased, making these securities less appealing than last year.



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## CHAPTER 2- INDIA'S MEDIUM-TERM GROWTH OUTLOOK: WITH OPTIMISM AND HOPE

**Product and Capital Market Reforms**

**Initiation of the reforms- 1991**

- The government's introduction of the structural changes of 1991, AKA LPG reforms, was prompted by the macroeconomic imbalances of the late 1980s and early 1990s.
- The government introduced structural reform in 1991 due to macroeconomic imbalance of the late 1980s and early 1990s.
- The high **combined deficits** of the central and state governments, elevated **inflationary pressure,** and large and unsustainable **current account deficit(CAD)** led to a balance of payment crisis in the Indian economy.

**Continuity in reforms with a renewed impetus-**

- Over the 1990s decade, the product and capital market reforms made slow progress.
- Near the conclusion of the decade, the government gave them new motivation. Investments were further liberalised to promote foreign direct investment as the primary source of non-debt-creating capital inflows.
- The New Telecom Policy of 1999 completely overhauled the telecom industry.

- The deregulation of interest rates and the passage of the **SARFAESI Act 2002** assisted the banking system, which had accrued bad loans throughout the period of economic recovery following the 1991 reforms.
- Interest rates were liberalized to increase bank competition, give depositors additional banking options, and improve the transmission of monetary policy.

- It was made available to the private sector, and the regulatory framework was tightened (TRAI).
- The reforms divided a government's regulatory and policy making powers from an operator's authority (BSNL).
- These changes laid the groundwork for India's IT industry development and had significant positive spillover effects on other economic sectors.
- During this time, the disinvestment and privatization policies also gained momentum.
- The government set up a dedicated Ministry to take this agenda forward.
- It sold equity stakes in some CPSEs and privatized companies such as **Maruti Udyog, Hindustan Zinc, Bharat Aluminum, and Videsh Sanchar Nigam Limited.**
- This period also marked the launch of the then-largest infrastructure project of independent India, the **'Golden Quadrilateral'.**
- The project gave the nation enormous economic advantages through greater industrial activity, trade, and economic growth.
- In addition, structural policies to solve macroeconomic imbalances were developed.



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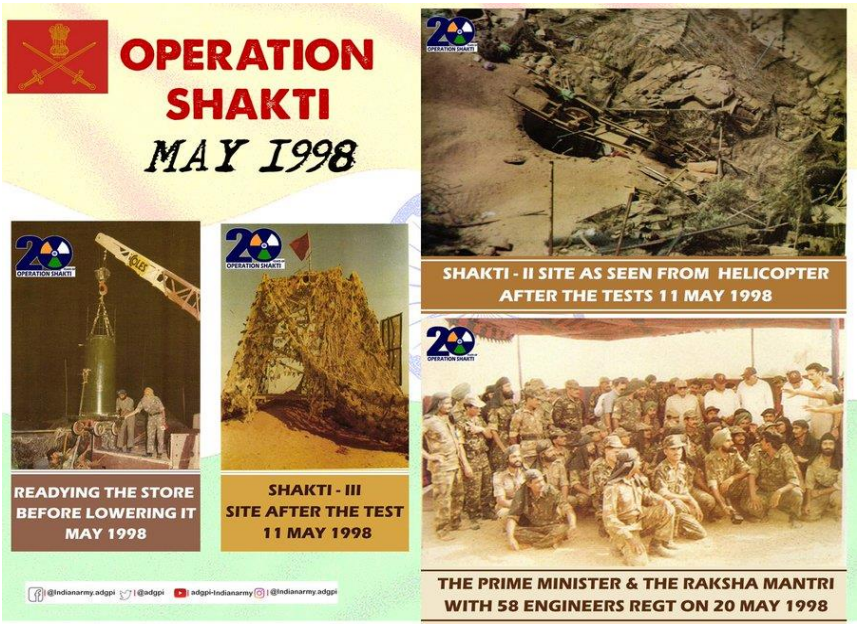
- A number of internal and international shocks occurred during the time of these reforms, which decreased investor confidence.
- **Capital outflows** to India in the months following the nuclear tests **fell precipitously** as a result of the **sanctions the US imposed on India** in response to India's nuclear test.
- The years 2000 and 2002 also had **two droughts that followed one another.**




- The end of the **tech boom** and the **9/11 attacks** led to increased global uncertainties that were accompanied by domestic shocks.
- Additionally, the banking system and business sector **balance sheets in India were in need of repair at the time.**
- Even while all of these reasons eclipsed the immediate effects of the changes the government at the time implemented, they built the foundation and structurally ready the Indian economy to take part in the subsequent global boom.

- **To address the historically large combined Gross Fiscal Deficit of the Government, the Fiscal Responsibility and Budget Management (FRBM) Act was passed.**

**0ne- off shocks overshadowed the reforms of 1998-2000-**

**Reforms for New India-Sabka Saath SabkaVikaas**

- Before 2014, most of the reforms focused on the product and capital market sectors.
- They were essential and kept going after 2014.
- But over the past eight years, the government has given these reforms a fresh perspective
- With an u**nderlying emphasis on enhancing the ease of living, doing business, and improving economic efficiency, the reforms are well-placed to lift the economy's** potential growth.
- Creating public goods, implementing trust-based governance, collaborating with the private sector for growth, and enhancing agricultural productivity were the overarching tenets of the reforms.
- This **plan reflects a paradigm shift in the government's growth and development** strategy, with the focus now on forming partnerships among various development stakeholders so that each can contribute to and profit from development (**Sabka Saath, SabkaVikaas).**
    - Creating public goods to enhance opportunities, efficiencies, and ease of living-
        - Physical infrastructure-
        - The **Golden Quadrilateral project's** inception in the 2000s marked the start of India's infrastructure-heavy policymaking, which continued slowly for another ten years.
- The last several years have seen a huge increase in infrastructure spending and policy commitment, which slowed economic growth when the non-financial corporate sector could not invest due to balance sheet issues.
- In doing so, the government has created a solid foundation for growth and private investment in the ensuing ten years.
- **Digital infrastructure:**



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- Helped increase t**he economic potential of both people and companies.**
- According to a recent article in the RBI's Monthly Bulletin, between 2014 and 2019, India's core digital economy grew 2.4 times that of the nation's overall economy.
- The **Aadhar digital identity, the PM-Jan Dhan Yojana's linking of bank accounts with it, and the widespread use of mobile phones—collectively known as the "JAM Trinity"—**have served as the nation's main pillars in the development of financial inclusion in recent years.
- The population covered with bank accounts increased from **53 per cent in 2015-16 to 78 percent in 2019-21 (as per NFHS).**
    - International research demonstrates that it has taken nearly 50 years for nations at a similar stage of development to expand bank account access to the extent that India has.
    - Some of the most recent digital efforts, including the Account Aggregator framework and **Open Network for Digital Commerce (ONDC),** will expand the options for small firms to access the e-commerce sector and obtain credit, which will support the anticipated economic growth over the medium term.
    - As an example, we can now track that, out of the 1.27 crore firms registered on the **Udyam Portal, more than 93,000 micro-enterprises have developed into small enterprises, and 10,000 small enterprises have developed into medium enterprises during the past two years.**
    - For many of these groups, establishing an identity has made formal credit easier to get.
    - The **PM SVANidhi Scheme** has provided **first loans of 10,000 rupees to more than 32.7 lakh street vendors, and more than 6.9 lahks of these have received second loans of 20,000 rupees.**
    - Additionally, the **formalization of commercial transactions** has been made possible by **digital systems** like the **Goods and Services Tax Network (GSTN) and the e-Way Bill system.**
    - The growth of formal enterprises is evidenced by the rising number of GST taxpayers, which would **increase from 70 lahks in 2017 to more than 1.4 crores in 2022.**
    - The **widespread use of the UPI digital payment system has made it easy to formalize transactions,** even for the smallest of amounts.
    - The economy will become more productive as a result of increased formalization thanks to easier access to financing and operational efficiency benefits.
- **Trust-based Governance-**
    - **RERA:**
        - The **Real Estate (Regulation and Development) Act (RERA),** the other regulatory reform, is fostering a culture of open and honest dealing in the real estate industry.
        - By introducing mechanisms for the swift resolution of disputes, registering real estate brokers and agents with the regulator, and enabling a single window clearing for prompt approvals to developers, the Act has completely changed the real estate industry.
        - In the entire nation, the Real Estate Regulatory Authorities have resolved more than 1.06 lakh complaints. The RERA Act encourages additional investments in the sector with 99262 projects and 71514 agents currently registered.
    - **decriminalization of minor economic offenses under the Companies Act of 2013:** The government has shown its intention to encourage ease of doing business for domestic and international investors by imposing civil responsibilities for handling basic defaults that do not entail fraud or where the nature of the breach is merely procedural.



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- The elimination of policy ambiguities has positive repercussions for enhancing public confidence in the administration.
- The government's commitment to ensuring a non-adversarial policy environment is demonstrated by its efforts to streamline processes by eliminating 25000 pointless compliances, repealing more than 1400 antiquated laws, doing away with the angel tax, and removing retrospective taxation on offshore indirect transfers of assets with Indian origins. These initiatives have boosted growth potential and boosted investor enthusiasm.

- **Promoting the private sector as a co-partner in the development-**
  - A fundamental principle behind the government's policy in the post-2014 period has been the engagement with the private sector as a partner in the development process.
  - With stake sales and the successful listing of PSEs on the stock market **during the past eight years,** the **government's disinvestment program has been resurrected.**
  - **During FY15 to FY23** (as of 18 January 2023), an amount of about **₹4.07 lakh crore has been realized as proceeds from disinvestment through 154 transactions using various modes/instruments.**
  - The privatization of Air India was particularly significant for re-igniting the privatization drive.
  - Evidence shows that privatization has improved labor productivity and the overall efficiency of the PSUs disinvested during 1990-2015.
  - This led to the introduction of the New Public Sector Enterprise Policy for Aatmanirbhar Bharat, which aims to increase efficiency gains by limiting the involvement of the government in PSEs to only a few key vital sectors.

## CHAPTER 3- Fiscal Developments: Revenue Relish

**Developments in Union Government finances**

- Although India's finances were already stretched before the pandemic, the Government's careful and calculated budgetary approach allowed steady public finances despite the current uncertainty.
- The fiscal deficit of the Union Government, **which reached 9.2 percent of GDP during the pandemic year FY21,** has moderated to **6.7 percent of GDP in FY22 PA** and is further budgeted to reach **6.4 percent of GDP in FY23.**

**Fiscal deficit-**

- It is the excess of total expenditure over total receipt other than borrowing.
- FD measures the total borrowing of a government from all sources during the financial year.

- This gradual decline in the Union government's fiscal deficit as a percent of GDP, in line with the fiscal glide path envisioned by the government, is a result of careful fiscal management supported by buoyant revenue collection over the last two years.

**Union Government on track to achieve the Fiscal deficit target for FY23-**

- Despite a macroeconomic recovery, the Union Budget for FY23 was unprepared for the geopolitical changes that took place throughout the year.
- Early in the year, when the European battle began, supply problems were made worse and prices for food, fuel, and other necessities increased.
- The government's fiscal policy response necessitated additional spending on food and fertilizer subsidies, accompanied by specific duty cuts to control the pass-through of the high imported prices to the consumers/ users.
- The Union Government is on pace to meet the budget estimate for the fiscal deficit in FY23 notwithstanding further constraints on the nation's financial resources throughout the year
- The fiscal deficit of the Union Government at the end of November 2022 stood at 58.9 percent of the BE, lower than the five-year moving average of 104.6 percent of BE during the same period.

**Performance of Union Government Non-debt Receipts**

- The Union government's non-debt receipts comprise revenue receipts (tax and non-tax) and non-debt capital receipts.
- Government borrowing makes up the shortfall in non-debt receipts to meet the expenditure demand (called fiscal deficit).
- The performance of the Union Government's financial receipts side is assessed in this area.

**Direct taxes propelling the growth in Gross tax revenue**

- Direct taxes, which broadly constitute half of the Gross Tax Revenue (Figure III.3), have registered a YoY growth of 26 percent from April to November 2022, enabled by corporate and personal income tax growth.
- The major direct taxes experienced growth rates in the first eight months of FY23 much greater than the corresponding longer-term averages.



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**Customs and Excise duties act as Flexi-fiscal policy tools**

- **Indirect taxes, like customs and excise levies, have served as flexible policy options during the fiscal response to the pandemic,** while direct taxes have protected the revenue buoyancy.
- The **government increased the excise levy on petrol and diesel to increase revenue when the pandemic year FY21 had a negative impact on the collection of** and low global oil prices gave them some leeway to do so.
- The government then cut the excise duty in November 2021 and May 2022 to prevent customers from paying more for increasingly expensive global oil as other taxes rebounded and inflationary pressures grew in the economy.

**Stabilising Goods and Services Tax yielding returns-**

- **The Goods and Services Tax (GST) has evolved and stabilized as a vital revenue source for central and state governments.**
- Together, their gross GST receipts totaled 13.40 lakh crore from April to December 2022. Consequently, a YoY growth of 24.8 percent is implied.
- The pick-up in GST collections was evenly distributed throughout the current fiscal year, with an average monthly collection of 1.5 lakh crore.
- The national campaign against GST evaders and fake bills, numerous systemic changes recently put into place, the quick economic recovery following the pandemic, and various rate rationalization initiatives taken by the GST Council to correct the inverted duty structure are all to blame for the increase in GST collections.
- As a consequence of consistent work, the GST net has doubled, with the number of **GST taxpayers rising from over 70 lakh in 20172 to more than 1.4 crore in 2022.**
- GST has improved income reporting, which has good externalities for income tax collection and economic activity aside from directly supporting government revenues.

**Centre on track to meet Non-Tax Revenue targets-**

- Most of the Centre's non-tax revenue comes from dividends and profits from Public Sector Enterprises and the Reserve Bank of India, outside grants and payments for services provided by the Union Government, and interest on loans to States and Union Territories.
- In comparison to FY22, the budget for FY23 anticipated a collection of non-tax revenue receipts that was around 22.5 percent lower.
- Up until November 2022, 73.5 percent of the budgeted money had been collected.

**Cooperative fiscal federalism drives a well-targeted fiscal policy**

- **Pragmatic expenditure policy of re-prioritization:**
    - During the Pandemic of 2021, the total expenditure of the Union Government in FY21 rose to 17.7 percent of GDP, higher than the previous 5-year average of 12.8 percent of GDP. In the subsequent year, FY22, the total Union Government expenditure was brought down to 16 percent of GDP (PA), and a more significant proportion of this accrued to capital expenditure.
    - **The capital expenditure by the Centre has steadily increased from a long-term average of 1.7 percent of GDP (FY09 to FY20) to 2.5 percent of GDP in FY22 PA.** This development has to be seen in the background of the Government of India focusing on capital expenditure which would make way for future economic development rather than revenue expenditure and appeasing the people.
- **Capex-led growth to bring back animal spirits and manage debt levels:** The Government of India had budgeted an unprecedented ₹7.5 lakh crore of Capital Expenditure for FY23, of which more than 59.6 percent has been spent from April to November 2022. During this period, capital expenditure registered a growth of over 60 percent, much higher than the long-term average growth of 13.5 percent. An increase in capital expenditure indicates making ground that can be used for economic gains by animal-spirited individuals.
- **Geopolitical developments stretched the Revenue Expenditure requirements:** With the winding up of the pandemic-related support, the revenue expenditure of the Union government was brought down from 15.6 percent of GDP in the pandemic year FY21 to 13.5 percent of GDP in FY22 PA. Due to the sudden outbreak of geopolitical conflict, the Union Government has sought an additional ₹80,000 crore for the expenditure towards food subsidy and additional allocation under **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)** and ₹1.09 lakh crore for fertilizer subsidy required during the year. As a result, the revenue expenditure from April to November 2022 has grown by over 10 percent on a YoY basis.
- **Interest payments of receipts went up after the pandemic outbreak.** However, in the medium term, as we move along the fiscal glide path, buoyancy in revenues, aggressive asset monetization, efficiency gains, and privatization would help pay down the public debt, thus bringing down interest payments and releasing more monies for other priorities.

**OVERVIEW OF STATE GOVERNMENT FINANCES-**

- **Performance of State finances:** The combined Gross Fiscal Deficit (GFD) of the States, which increased to 4.1 percent of GDP in the pandemic-affected year, was brought down to 2.8 percent in FY22 PA. Given the geopolitical uncertainties, the



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consolidated GFD-GDP ratio for States has been budgeted 3.4 percent in FY23. However, the States' Monthly Fiscal Accounts data released by CAG shows that from April- November 2022, the combined borrowings of the 27 major states have just reached 33.5 percent of their total budgeted borrowings for the year.

- The Centre enhanced the **net borrowing ceilings (NBC)** for States to 5 percent of GSDP in FY21, 4 percent of GSDP in FY22, and 3.5 percent of GSDP in FY23.
- As per FY23 Budget Estimates of the State Governments, **the States' combined own Tax revenue and own Non-Tax revenue** were anticipated to grow at 17.5 percent and 25.6 percent, respectively, over FY22 RE.
- On the expenditure side, **revenue and capital expenditures** in FY22 BE were envisaged to grow at 10.4 percent and 16 percent, respectively, over FY22 RE.
- **The capital outlay of States** grew by 31.7 percent in FY22 PA. This increase is attributable to strong revenue buoyancy and the support provided by the Centre in terms of advance releases of payments to the states, GST compensation payments, and interest-free loans.

**Transfer from Centre to States**

- The amount of money transferred to the States includes their portion of devolved Union taxes, grants from the Finance Commission, contributions to Centrally Sponsored Schemes (CSS), and other payments.
- Between FY19 and FY23 BE, the total transfers to the States have increased.

**Supporting the GST compensation payments during crisis-**

- In addition to the regular stream of revenues from GST, compensation was also provided to the states in the post-GST period.
- Since GST was a new tax the compensation scheme was designed **to safeguard the states from any difference in the new versus the old tax regime ensuring steady revenue growth of 14% per annum for 5 years.**
- **It is important to emphasise that the compensation system was not intended to serve as a safety net for the state's finances in the event that tax revenues declined due to a slowdown in economic growth.**
- **However, the pandemic's occurrence has brought attention to the importance of GST Compensation as a revenue cushion for the States.**
- During FY21, revenues for centers and states were adversely affected due to the economic contraction.
- Despite a drop in CGST and compensation cess revenues, the states' demand for compensation climbed significantly.
- In addition to the usual payment of GST compensation, the Centre borrowed money despite having limited financial resources in the midst of a crisis and handed it on to States on a back-to-back loan basis.
- These loans are not a burden on the states because they will be repaid from future contributions to the GST Compensation Cess Fund.

**Enhanced limit of borrowing for the States and incentives for reform**

- Since the pandemic outbreak, the Centre has kept the Net borrowing Ceiling of the State Governments above the Fiscal Responsibility Legislation (FRL) threshold.
- It was fixed at 5 percent of GSDP in FY21, 4 percent of GSDP in FY22, and 3.5 percent of GSDP in FY23.
- A part of this additional borrowing was linked to reforms encouraging the States to undertake them.
- Despite having limited fiscal resources in the middle of a crisis, the Centre borrowed funds and passed them on to States on a back-to-back loan basis, in addition to the release of regular GST compensation.
- These loans will be repaid from future inflows into the **GST Compensation Cess Fund** and hence are not a burden on the states.

**Enhanced limit of borrowing for the States and incentives for reforms**

- Since the pandemic outbreak, the Centre has kept the Net borrowing Ceiling of the State Governments above the Fiscal Responsibility Legislation (FRL) threshold.
- It was fixed at 5 percent of GSDP in FY21, 4 percent of GSDP in FY22, and 3.5 percent of GSDP in FY23.
- A part of this additional borrowing was linked to reforms encouraging the States to undertake them.
- For instance, in FY21, a part of the additional borrowing ceiling was conditional on implementing the
    - **'One Nation One Ration Card' System,**
    - **ease of doing business reform,**
    - **Urban Local body/ utility reforms, and**
    - **power sector reforms.**
- As a result,
    - **17 States implemented the One Nation One Ration Card System,**
    - **20 States completed the stipulated reforms in the Ease of Doing Business,**
    - **11 States had done local body reforms and**



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- **17 States carried out fully/partly Power Sector Reforms.**

- Similarly, a part of the additional borrowing was earmarked for incremental capital expenditure to be incurred by States during FY22. Sixteen states accessed the additional borrowings upon meeting the Capex target.
- In addition to the net borrowing ceilings fixed for the States, **Fifteenth Finance Commission had recommended performance-based additional borrowing space of 0.50 percent of Gross State Domestic Product (GSDP) to the States in the power sector.**
- This special dispensation has been recommended for each year for four years, from FY22 to 2024-25.
- For the financial year FY22, additional borrowing permission of ₹39,175 crore was allowed to 12 States for meeting the stipulated reform criteria.

**Initiatives by the State Governments to improve their own resources**

- States like Tamil Nadu, Telangana, and Kerala have revised the property taxes in their States during the year to support their revenues
- Some states like Tamil Nadu, Andhra Pradesh, Telangana, Karnataka, Madhya Pradesh, Haryana, Kerala, Assam, and UT of Puducherry have considered revising their power tariffs during FY23.
- On the other hand, Uttar Pradesh has announced a new liquor policy whereby it increased the license fee, renewal fees, processing fee, and registration fee across various categories of liquor/ distilleries.

**Debt Profile of the Government-**

- Given the **unprecedented fiscal expansion in 2020, rising government liabilities** have emerged as a significant concern across the globe.
- **IMF projects9 the global government debt at 91 percent of GDP in 2022, about 7.5 percentage points above the pre-pandemic levels.**
- While countries worldwide had started winding up the fiscal support provided during the pandemic, challenging global financial conditions amidst global uncertainties tightened budget constraints.
- Of the Union Government's total net liabilities in end-March 2021, 95.1 percent were denominated in domestic currency, while sovereign external debt constituted 4.9 percent, implying low currency risk.
- Further, sovereign external debt is entirely from official sources, which insulates it from volatility in the international capital markets.
- It is estimated to decline to 84.5% of GDP by the end of March 2022.
- The emphasis on capex led growth will enable India to keep the growth interest rate differential positive.
- A positive growth interest rate differential keeps the debt level sustainable.

## Summary of chapter 4 economic survey

## CHAPTER 4: Monetary Management & Financial InterMediation: A Good year

**Introduction**

- The chapter provides an introduction to the **most recent government's monetary policies, financial management through monetary policies during the Covid-19 period**, liquidity conditions of various economic sectors, the transmission of monetary policy and the role of banks in credit issuance, credit growth in India, NBFCs and their performance after Covid-19, the role of the insolvency and bankruptcy code in easy resolvency of Startup's in India, the significance of IFSC-GIFT CITY, and the development of the internet.

**Monetary developments**

- **Commodity prices skyrocketed** due to the European conflict, dramatically escalating the high inflationary pressures. This trend has set off the present strong and synchronous monetary tightening cycle.
- After executing a 115 basis point (bps) drop between March 2020 and May 2020, the Monetary Policy Committee (MPC) kept the status quo on the policy repo rate between May 2020 and February 2022.
- As the new floor of the **Liquidity Adjustment Facility (LAF) corridor,** the Standing Deposit Facility (SDF) replaced the reverse repo rate at 3.75 percent. The reverse repo rate was replaced as the new floor of the Liquidity Adjustment Facility (LAF) corridor by the SDF, which was launched at a rate of 3.75 percent.
- The **policy repo rate, the SDF, and the Marginal Standing Facility (MSF)** were all raised by 40 basis points (bps) apiece, and the Cash Reserve Ratio was raised by 50 bps (CRR).
- **M0, the reserve currency, climbed by 10.3% percent as of December 30, 2022,** compared to last year, when it increased by 13%. However, the reserve money reported a YoY growth of 7.8 percent as opposed to 9.1 percent a year after being adjusted for the first-round impact of modifications in the Cash Reserve Ratio (CRR).



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- Except for a slight uptick during the start of the **Russia-Ukraine crisis,** which can be attributed to a spike in precautionary holdings, Currency in Circulation (CIC) growth has remained constant at levels recorded after COVID-19.
- Broad money stock (M3) grew 8.7% as of December 30, 2022. When looking at the components, aggregate deposits have been the biggest factor and have been mainly responsible for the growth of M3 this year.
- **The money multiplier, or the ratio of M3 to M0, has largely remained consistent at 5.1** from April to December 2022, down from 5.2 over the same time period in 2017.

**Liquidity conditions**

- The Liquidity Adjustment Facility (LAF) corridor became symmetric around the policy repo rate when the Marginal Standing Facility (MSF) rate was maintained at 25 bps above the policy repo rate; the corridor width was subsequently restored to 50 bps, the situation that existed prior to the pandemic. Primary liquidity of Rs. 87,000 crores was removed from the banking system due to the RBI's decision to increase the CRR by 50 bps.
- Liquidity management by RBI: With two-way operations, the Reserve Bank maintained its flexibility and agility in managing liquidity. With two variable rate repo (VRR) auctions of 50,000 crores each, it injected cash to ease temporary liquidity tightness. The weighted average call rate (WACR), the operating aim of monetary policy, moved steadily closer to the policy repo rate as surplus liquidity was gradually removed.

**Monetary policy transmission**

- External benchmark-based lending rate and the 1-year median marginal cost of funds-based lending rate (MCLR) grew by 225 basis points and 115 basis points, respectively, during FY23 (up to December 2022). According to an analysis of transmission across bank groups during FY23 (up to November 2022), public sector banks experienced a greater increase in the weighted average lending rate (WALR) on new loans, while private banks experienced a greater increase in the WADTDR on outstanding deposits and the WALR on outstanding loans.

**Development in G- sec markets**

- The yield on the 10-year government bond increased in 2022 after holding constant in 2020 and 2021. After reaching a peak of 7.5 percent in June 2022, the 10-year government bond's monthly average yield was 7.3 percent in December 2022. In the second half of 2022, volatility also decreased along with the easing of yields.
- The trade volume in G-Secs (including T-Bills and SDLs) increased 6.3 percent in Q2 FY23 to a two-year high.
- Secondary Market: Foreign banks and principal dealers were net sellers on a comparative basis. On the other hand, in the secondary market, net buyers included public sector banks, cooperative banks, financial institutions, insurance companies, mutual funds, private sector banks, and "others."

**Banking sector**

- **Resilient and well-capitalized Banking System:** Over time, SCBs' asset quality has increased consistently across all significant industries. At 1.3 percent of total assets, Net Non-Performing Assets (NNPA) have reached a ten-year low. Fewer slippages brought on this decrease, and the decline in outstanding GNPAs brought on by recoveries, upgrades, and write-offs. A decrease in NNPA was caused by lower GNPAs and excessive provisions amassed in recent years.
- **The Provisioning Coverage Ratio (PCR),** which has been rising continuously since March 2021 due to falling GNPAs, reached 71.6 percent in September 2022. Even with the 11.5 percent Capital Conservation Buffer (CCB) rule, it is still far above the minimum capital needed.
- **Regarding Return on Equity (ROE) and Return on Assets (ROA),** SCB profitability increased to levels last seen in FY15. Profit After Tax (PAT) increased by a system-wide double-digit 40.7 percent in the quarter ending September 2022, driven by a robust rise in Net Interest Income (NII) and a sizable provision reduction. According to RBI's macro-stress tests for credit risk, all banks can meet the minimum capital requirements even in challenging stress situations because SCBs are well-capitalized.

**Credit growth is aided by a strong banking system and a deleveraged corporate sector.**

- From June 2021, the growth of non-food bank loans has been supported by the improvement in the financial soundness of banks and corporations and the rebound in economic activity in FY22. In December 2022, the growth in non-food bank credit quickened to 15.3 percent.
- The government's greater agricultural credit objective and concessional institutional credit policy helped loans to agriculture and related activities gain momentum. A rise in credit to MSMEs has boosted industrial credit growth, which has also been helped by the advantages of the Emergency Credit Line Guarantee Scheme (ECLGS), the government's production-linked incentive programme, and an increase in capacity utilization.
- During FY23, reliance on bank borrowing for supporting ongoing operations and capacity expansion increased while money raised from the main domestic equity market segment decreased. The incremental credit-deposit ratio also increased significantly on both an annual and half-yearly basis.

**Non-banking financial companies (NBFCs) continue to recover.**



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- The dropping GNPA ratio of NBFCs from the peak of 7.2 per cent recorded during the second wave of the pandemic (June 2021) to 5.9 per cent in September 2022, approaching the pre-pandemic level, demonstrates the ongoing improvement in asset quality.
- The capital position of NBFCs also remains strong in the face of the drop in GNPAs, with a CRAR of 27.4 percent at the end of September 2022, just a hair lower than the 27.6 per cent in March 2022. It continues to be far above the legal requirement, nevertheless. The rise in risk-weighted assets (RWAs) as lending increased was the main cause of the drop of 20 basis points.
- The quantity of credit given by NBFCs is increasing, with a total outstanding balance of 31.5 lakh crore as of September 2022. The industrial sector continues to get the highest amount of credit from NBFCs' balance sheets, followed by the retail, service, and agricultural sectors.

**Progress made under the insolvency and bankruptcy code**

- **Ease of doing business:** Facilitating the "exit" process: By the end of September 2022, 5,893 Corporate Insolvency Resolution Processes (CIRPs) had started, of which 67 per cent had been completed since the IBC's establishment in December 2016. A Corporate Debtor (CD) may also choose to liquidate itself voluntarily under the terms of the Code, provided that specific requirements are met.
- **Behavioural change:** Recoding Business Relationships: Many debtors have been pushed to pay their debts even before the start of insolvency procedures out of a concern of losing control of the CD upon the start of CIRP.
- **Sixty-nine per cent of the distressed assets were rescued**, realization value of around 178 per cent of the liquidation value: The resolution plans realized a total of 2.4 lakh crore for the CIRP initiators (which comprises Financial Creditors, Operational Creditors, and Corporate Debtors), which is 177.6 percent of the liquidation value and 841 percent of the fair value of the 553 CDs saved.
- **Ninety-two percent of the value realized under the liquidation Process:** For the CIRP initiators (financial creditors, operational creditors, and corporate debtors), the resolution plans generated total proceeds of 2.4 lakh crore, or 177.6 percent of the liquidation value and 841 percent of the fair value of the 553 CDs preserved.
- **NPAs**: IBC recovers the highest amount for Scheduled Commercial Banks: According to data from the RBI, SCBs under IBC recovered the most money overall in FY 22 when compared to other channels like Lok Adalats, the SARFAESI Act, and DRTs.

| Recovery Channel | Amount recovered during the year* | | | | |
|---|---|---|---|---|---|
| | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22(P) |
| Lok Adalats | 1,811 | 2,750 | 4,211 | 1,119 | 2,777 |
| DRTs | 7,235 | 10,552 | 9,986 | 8,113 | 12,114 |
| SARFAESI Act | 26,380 | 38,905 | 34,283 | 27,686 | 27,349 |
| IBC | 4,926 | 66,440 | 1,04,117 | 27,311 | 47,421 |
| **Total** | **40,352** | **1,18,647** | **1,52,597** | **64,229** | **89,661** |

Source: Off-site returns, RBI and IBBI
Note: P: Provisional, DRTs stand for Debt Recovery Tribunals
*: Refers to the amount recovered during the given year, which could be with reference to the cases referred during the given year as well as during the earlier years.

**Primary market**

- **Debt:** Private debt placements more than makeup for the lack of public debt issuances: The primary market's resource mobilization grew by 5% as a result of the issue of debt securities. The overall number of concerns grew by 11% during the same time period. Nonetheless, private debt placements more than made up for the lack of activity in governmental debt issuances. When compared to the same period in the previous year, the number of private debt placements climbed by 11% and the number of resources mobilised by 6%.

**Secondary market**

- **Stock Market Performance:** India's stock market has performed well despite the geopolitical unrest that gripped the world in April–December 2022. The blue-chip index Nifty 50 of the Indian stock market, on the other hand, registered a return of 3.7 percent during the same period. The Sensex closed 3.9 percent higher at the end of December 2022 than it had on March 31, 2022.
- **Stock market volatility rose due to the post-Russia-Ukraine crisis supply chain disruption and heightened geopolitical uncertainty.** With the start of the Russia-Ukraine conflict, the India VIX, which gauges anticipated short-term volatility in the stock market, reached a high of 32.0 on February 24, 2022. The India VIX experienced a falling trend from April to November 2022 as the conflict's effects began to lessen throughout the year.
- **Retail Participation in the Capital Market:** Compared to the same period in FY22, the percentage of individual investors in the cash segment somewhat decreased during FY23 (April-November 2022). On a year-over-year basis, demat accounts increased significantly, jumping by 39% at the end of November 2022.
- **Commodity Derivatives Market:** severe correction due to the Fed's tightening of credit: The conflict between Russia and Ukraine caused disruptions in the supply of commodities, particularly those related to energy, base metals, and food. As a result, there was a dramatic increase in the price of crude oil and some base metals like nickel and aluminum. Nevertheless,



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commodities prices have significantly improved since the Federal Reserve began raising interest rates in March 2022 to fight growing inflation.

- **Mutual Funds witnessed lower net inflows:** Net inflows to mutual funds were much lower than the previous year. Nevertheless, specific growth/equity-oriented and solution-oriented schemes saw inflows much greater than they had been the year before during the same period. Despite this, the market's performance led to a growth in assets under management (AuM) of 8.1 percent for the mutual fund sector at the end of November 2022.

**Foreign portfolio investment**

- Macroeconomic solid fundamentals ensure India remains an attractive destination: FPIs were under pressure to sell in Indian markets due to global economic reasons such as inflationary pressures, monetary tightening by central banks, and recessionary fears in Advanced Economies. Also, investors had gained from Indian stock holdings that they might sell to offset losses elsewhere. Compared to November 2021, the total assets under custody with FPIs increased by 3.4% at the end of November 2022.
- At the end of December 2022, the total net investments by Foreign Portfolio Investors for FY23 had decreased to 16,153 crores from 5,578 crores at the end of December 2021. Net FPI outflows were seen in both the debt and equities sectors.
- In recent years, investments made by domestic institutional investors (DIIs) countered FPI outflows, making the Indian equity market substantially less vulnerable to sharp declines. During FY23, mutual funds made net equity investments and net DII inflows (until November 2022).

**Other developments**

- The necessity of a common approach to regulating the crypto ecosystem: The recent failure of the **cryptocurrency exchange FTX and the subsequent sell-off in the crypto** markets have highlighted the need for more in the ecosystem for cryptocurrencies. Because they lack any underlying cash flows, crypto-assets do not meet the criteria for being considered financial assets. Instead, they are self-referential instruments. Bitcoin, Ether, and a number of other crypto assets are no longer considered securities by US regulators. On January 3, 2023, the Federal Reserve, **Federal Deposit Insurance Corporation (FDIC), and Office of the Comptroller of the Currency (OCC) is**sued a rare joint statement outlining their concerns about the potential hazards crypto assets pose to the financial system.

**IFSC- GIFT CITY**

- The most crucial is creating and launching GIFT City's first International Financial Services Centre (IFSC). The objective is to help India become a significant economic force by hastening the establishment of a solid international financial services sector there.

**GIFT IFSC - emerging as a preferred Jurisdiction for International financial services**

- A broad range of financial services, including banks, capital markets, insurance, fintech, aircraft leasing, gold exchanges, etc., are covered by the more than 390 registered organisations under the GIFT IFSC. With the strong and expanding participation of both domestic and international financial institutions, the market for financial services is expanding quickly. You can think of GIFT IFSC's significance as :
    - Recent developments/milestones/innovations/collaborations with other countries.
    - Multilateral Memorandum of Understanding (MMoU)
    - Bilateral Memorandum of Understanding (BMoU)
    - FinTech bridge with the Monetary Authority of Singapore
    - NSE IFSC -SGX Connect
    - Visibility and Mindshare Among FinTechs globally
    - Cooperation agreement between India INX and Luxembourg Stock Exchange
    - IFSCA Vision for FY24 and beyond

**PENSION SECTOR**

- **India's Pension Sector demonstrated remarkable performance during Covid-19:** The Indian government has proposed a number of initiatives to pay pensions to families that have lost earning members as a result of Covid. Moreover, it made efforts to improve and liberalize insurance compensation. Even individuals who lost earning members as a result of Covid-19 are now eligible for the benefits of **the Employees State Insurance Corporation (ESIC)** pension plan. Also improved and liberalised were the insurance benefits offered by the **Employees Deposit Linked Insurance (EDLI)** programme.
- Almost three crore elderly, widowed, and crippled people in need (over the age of 60) received $1,000 in ex-gratia payments from April to June 2020. In light of the unprecedented pandemic, Rule 64 of the CCS (Pension) Regulations, 1972 was relaxed to ensure prompt provisional approval of pensionary payments.



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- An **Electronic Pension Payment Order (e-PPO)** was merged with Digi Locker, generating a permanent PPO record in the Digi Locker, to improve the "Ease of Living" for Central Government Civil Pensioners.
- Under the **National Social Assistance Programme (NSAP),** the Government of India is implementing a number of pension programmes, including the **Indira Gandhi NationalOld Age Pension Scheme (IGNOAPS), Indira Gandhi National Widow Pension Scheme (IGNWPS), and Indira Gandhi National Disability Pension Scheme (IGNDPS)**, with a total beneficiary coverage of 4.7 crores.
- The principal defined benefit pay-as-you-go pension system for government employees, the **National Pension System (NPS),** was established in January 2004. A defined contribution plan with government co-contribution is the NPS for government employees.
- **APY was launched by the government in June 2015** as a component of the overall goal of supplying universal social security. The programme is open to everyone between the ages of 18 and 40, with a focus on disadvantaged, disorganized, and low-income individuals.
- PFRDA has made a number of efforts to improve financial education under the direction of the **Financial Stability and Development Council (FSDC),** so that consumers can make informed decisions and take advantage of the formal financial sector while being aware of the risks and different trade-offs involved. They include outreach initiatives through trade associations, intermediaries like banks, and town hall meetings, as well as pension education through print and electronic media.

**OUTLOOK**

- The substantial growth in the AuM of domestic mutual funds, the excellent capital levels of NBFCs, and the sound balance sheets of banks all demonstrate the robustness of the domestic financial sector. The improvement in asset quality, the return to profitability, and the robust capital and liquidity buffers are contributing to the brisk demand for bank lending and the early indications of a recovery in the investment cycle.
- By 2032, India, one of the insurance markets with the fastest growth worldwide, is anticipated to rank among the top six. A greater flow of long-term capital, a global technology, processes, and international best practices are likely to be made possible by the digitization of the Indian insurance market and an increase in the FDI limit for insurance companies, which will support the expansion of the Indian insurance industry.

## CHAPTER-5 PRICES AND INFLATION: SUCCESSFUL TIGHT-ROPE WALKING

- Policymakers are constantly concerned about rising costs because they primarily affect the average person.
- **Inflation's dangers are felt more acutely in developing economies,** where essentials comprise a larger portion of the consumption basket than in wealthy nations.
- **India's inflation rate has been calm in recent years, mildly under the RBI goal range of 4% from 2017 to 2019.**
- The RBI's upper tolerance level of 6 per cent for inflation was exceeded in 2020 due to supply-side disturbances.
- Through supply-chain interruptions for necessities like food, medicine, and industrial items, the pandemic caused a greater shock to the supply than it did to the demand.
- This, in turn, made the country's cost-push inflation worse.
- As the pandemic receded, the Russia-Ukraine conflict erupted, sparking global inflation mostly driven by rising crude oil and other commodity prices.
- Prices rose to a decade-high level, eating into household budgets and forcing central banks to tighten monetary policy.
- **Unprecedented inflation rates were left to confront** a recovering global economy.
- Stagflation was looming large on the horizon.
- The only choice for industrialized economies to respond to was to hike interest rates.
- The US currency strengthened as the US Federal Reserve increased interest rates, increasing the cost of petroleum imports priced in US dollars.
- The International Monetary Fund (IMF) expects the inflation rate in advanced economies to reach 7.2 percent in 2022, the highest level since 1982, up from 3.1 percent in 2021.
- **In September 2022, the rate in the Eurozone hit 10%. (WEO, October 20221 ).**
- While the UK experienced an annual price increase of 9.2 percent in December 2022, US inflation hit its 40-year high of 9.1 percent in June 2022 before slowing to 6.5 percent in December 2022.
- In December 2022, there was 8.6 percent inflation in Germany.
- From August through November 2022, Turkey's inflation rate was above 80%, which marginally decreased to 64.3% in December 2022.
- The war exacerbated the impacts of the pandemic's robust recovery in consumer demand for goods and services.



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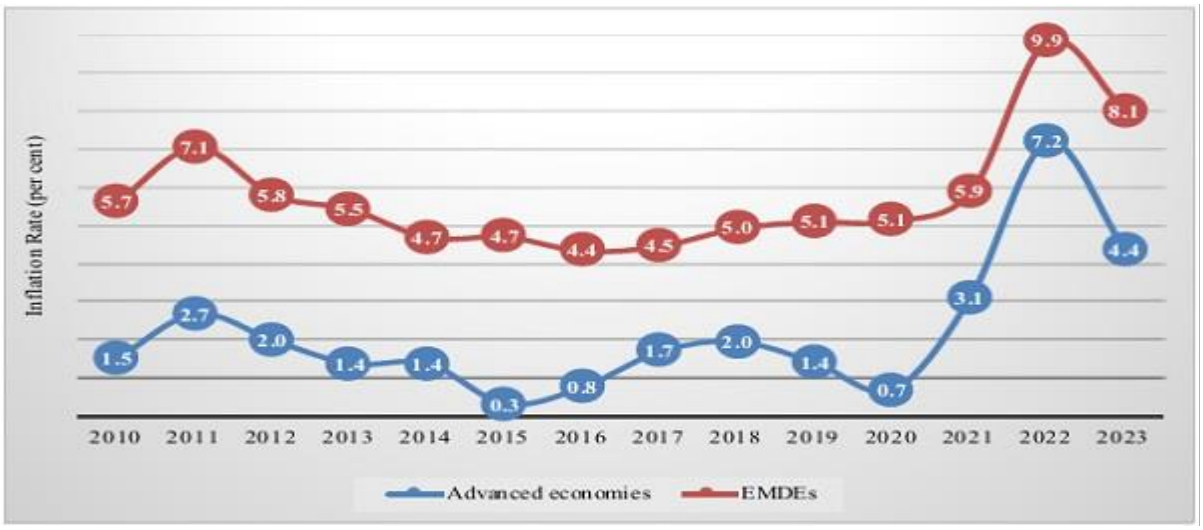
- By 2022, the inflation rate in emerging markets and developing economies (EMDEs) is expected to rise from 5.9 percent in 2021 to 9.9 percent (WEO, October 2022).

**Record consumer price inflation in the 2022 calendar year**




- The **sensible and well-calibrated fiscal and monetary policies** used to combat the pandemic's economic effects lay the framework for India's remarkable inflation management previously.
- India opted not to overstimulate, allowing for the containment of price pressures brought on by the crisis between Russia and Ukraine.
- The **country's excessive summer heat and subsequent unequal rainfall** in some areas impacted the farm industry, which reduced supplies and raised the price of some key goods.
- **India's inflation rate peaked in April 2022 at 7.8 percent before moderating to 5.7** percent in December 2022 on the back of good monsoons and prompt government measures that ensured adequate food supply.
- **Commodity prices fell due to the global economic recession and an increase in interes**t rates, which also helped significantly lower wholesale price inflation.
- Pressures on input prices for Indian industries decreased as a result.

- **Core inflation-** It reflects the shift in prices for goods and services but excludes the food and energy industries. These items aren't included in the inflation metric since their costs fluctuate a lot more.
  Core inflation=headline inflation- food and fuel inflation
- **Headline inflation-** A country's overall inflation rate is known as headline inflation. The headline inflation rate accounts for inflation across a variety of goods, such as energy and food commodities. It differs from core inflation, which computes inflation without accounting for the cost of food and energy.

**Domestic retail inflation-**

- In comparison to FY21, CPI-Combined (CPI-C) based retail inflation was lower in FY22.
- A few sub-groups, including "oils & fats," "fuel & light," and "transport & communication," experienced considerable inflation during FY22. There are two reasons behind this-Supply disruptions caused by the pandemic and headline inflation caused by the Russia Ukraine crisis.
- While core inflation remained at a low level in FY23, rising food inflation was primarily responsible for greater retail inflation.
- Food inflation ranged between 4.2 percent to 8.6 percent, between April and December 2022, while the core inflation rate stayed at around 6 percent except in April 2022."



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**Retail inflation driven by food commodities-**

- The housing, textiles, pharmaceutical, agriculture and related, and retail industries are mostly to blame for retail price inflation.
- **The main drivers of headline inflation in FY23 were "food & beverages,"** "clothing & footwear," and "fuel & light," with the first two contributing more this fiscal year than last.
- **Food Inflation Caused by Vegetables and Cereals in FY23:-**
    - Based on the Consumer Food Price Index (CFPI), food inflation climbed to 7.0 percent in FY23 from 3.8 percent in FY22.
    - The government has banned the export of wheat goods under HS Code 1101 and slapped an export fee on rice to rein in the skyrocketing costs of wheat and rice.

**Pradhan Mantri Gareeb Kalyan ann yojana-**

- Due to a shortage in worldwide supply and an increase in export taxes imposed by several nations, the price of edible oils increased dramatically on the international market in FY22.
- India imports 60 per cent of the edible oils it needs, making it susceptible to changes in global prices. India imports 60 per cent of the edible oils it needs, making it susceptible to changes in global prices.

**Some initiatives to combat food inflation-**

- The Central Government made the decision to offer States and UTs 1.5 million tonnes of Chana at a reduced price for distribution under various social programs. The states would be able to buy Chana for $8 less per kg than their individual issue rates.
- Leading Edible Oil Associations were ordered by the Central Government to ensure that the maximum retail price of edible oils was reduced by '15 per litre with immediate effect.

**Rural-Urban Inflation Differential has Declined:-**

- The current fiscal year has seen rural inflation remain higher than urban inflation, reversing the trend from the epidemic years.

- Rural inflation is generally higher than urban inflation in most states and UTs:
    - In most states, CPI-C inflation rose in FY23 compared to FY22.

**Domestic wholesale price inflation-**

- **Wholesale Price Inflation Caused by Global Supply Chain Disruption: -** WPI-based inflation remained low during the Covid-19 period, and it started to gain momentum in the post-pandemic period as economic activities resumed.
- **Part of the double-digit inflation** in WPI during FY23 could be attributed to food inflation, which stayed at 7.5 percent against 6.8 percent in FY22. Due to the **unpredictable weather, cereals and vegetables were the main causes of food inflation.** Inflation in the **'manufactured products'** subgroup in FY23 saw a **considerable decline** compared to the previous year due to the rationalization of duties on critical inputs and moderation in global commodity prices.
- Core inflation in FY23 remained lower than it was in FY22.
- The high import dependence on edible oil has meant that the transitory effect of rising international prices of these products is also reflected in domestic prices.

**Measures to Contain Inflation in Input prices-**

- **Fuel Prices:** The Central Government has intervened by adjusting the excise taxes on gasoline and diesel
- **Plastic products:** The import duty on the import of raw materials used in the plastic industry has been reduced to lower the cost of domestic manufacturing.
- **Steel:** Import duty on major inputs – ferronickel, cooking coal, PCI coal – has been cut from 2.5 percent to zero, while the duty on coke and semi-coke has been slashed from 5 percent to zero.
- **Cotton:** The government waived customs duty on cotton imports until 30 September 2022, to benefit the textile industry and lower prices for consumers.
- **Diamonds and gemstones:** customs duty on cut and polished diamonds and gemstones were reduced to 5 percent and duty on the simply sawn diamond was reduced to nil.
- **Chemical products:** Customs duty on certain critical chemicals namely methanol, acetic acid, and heavy feedstocks for petroleum refining were reduced in the Budget 2022-23.

**Fuel price inflation: declining global crude oil prices -**

- In FY22 and FY23, inflation in WPI 'fuel and power' was mostly driven by high international crude oil prices.
- The price of the Indian basket of crude oil during FY21 hovered in the range of US$20-65/bbl in response to the muted global demand brought on by Covid-19-induced constraints.



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- Following that, prices began to soar as a result of the Organization of the Petroleum Exporting Countries (OPEC) and other oil-producing nations' extraordinary cuts to the supply of crude oil.
- Additionally, a decrease in the central excise duty on gasoline and diesel in November 2021 and May 2022, along with a subsequent decrease in the value-added tax (VAT) levied by the State Governments, moderated the retail selling price of gasoline and diesel in India.

**Convergence of WPI and CPI inflation-**

- The convergence between the WPI and CPI indices was mainly driven by two factors.-
  - Firstly, a cooling in inflation of commodities such as crude oil, iron, aluminum, and cotton led to a lower WPI.
  - Second, a rise in the cost of goods and services contributed to CPI inflation. Although they are not part of the WPI basket, services are a major component of the CPI-C.

**Falling of Inflationary expectations-**

- Businesses and household inflation expectations too have moderated.

**Monetary policy measures for price stability-**

- Reserve Bank of India's Monetary Policy Committee (MPC) increased the policy repo rate under the liquidity adjustment facility (LAF) by 2.25 percent (225 basis points) from 4.0 percent to 6.25 percent between May and December 2022.
- **How is the Current Inflation Different from the 1970s?**
  - Recent oil price rises are proportionally smaller. Commodity supply disruptions have played a smaller role in recent price increases, and central banks have much clearer and more robust institutional frameworks that focus on price stability today.However, the Bretton Woods controlled exchange rate regime collapsed in 1973 immediately after the crisis because many nations' definitions of monetary policy's objectives and even its tools were vague.

**Housing prices: recovering housing sector after the pandemic-**

- In order to achieve the goals of price stability, financial stability, and growth, housing prices must be closely monitored.

With FY18 serving as the base year, the **National Housing Bank (NHB)** releases two Housing Price Indices (HPI), referred to as "HPI evaluation price" and "HPI market price quarterly." Out of the 50 cities, 43 experienced an increase in the index, while 7 saw a fall. Metros city also showed improvement.

**Pharmaceutical sector-**

- **National List of Essential Medicines (NLEM),** 2015 NLEM 2022 was promulgated by the Ministry of Health and Family Welfare on September 2022 and and revised Schedule I of Drugs (Prices Control) Order (DPCO) was notified on 11 November 2022 by Department of Pharmaceuticals incorporating NLEM, 2022.
- **Pradhan Mantri Bhartiya JanaushadhiPariyojana (PMBJP)** was launched to provide everyone with access to high-quality generic medications at reasonable costs.

**Conclusion-**

- The CPI-C and WPI have both dropped below 6%.
- The main cause of inflation in this fiscal year, international crude oil prices, have stabilized.
- Similar to what happened during the epidemic, supply chain difficulties could result from the resurgence of Covid-19 in China.
- Our imported inflation may be particularly impacted by the geopolitics surrounding energy.
- Due to supply limitations, the RBI predicts that domestic prices for spices and grains would increase in the near future. Due to supply limitations, the RBI predicts that domestic prices for spices and grains would increase in the near future.
- The monetary and fiscal authorities should continue to be as attentive and watchful as they have been this year in the coming year.

## CHAPTER: 6 Social Infrastructure & Employment

**Introduction-**

- India will reward itself with demographic dividends in its Amrit Kaal for 25 years. Quality employment opportunities and working conditions are crucial tools to carve this potential into long-term sustainable growth.
- In the Financial Year 2023, various dimensions of the social sector are recouping lost grounds and reenergizing to meet the vision of "**sab ka sath, sab ka vikas and sabka Vishwas".**

**Social sector expenditure-**

- Public Sector Spending Maintaining Pace with the Sector's Growing Importance.
- Between FY18 and FY20, the government's overall spending on social services accounted for almost 25% of all expenditures. In FY23, it rose to 26.6 percent (BE).
- From 21% in FY19 to 26% in FY23, health spending as a percentage of overall social services spending has increased.



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- Keeping with the objective of the 15th Finance Commission to increase health expenditure to 2.5% of GDP by 2025, Central and State Governments' budgeted expenditure on the health sector reached 2.1 percent of GDP in FY23 (BE) and 2.2 percent in FY22 (RE), against 1.6 percent in FY21.

**Improving human development parameters-**

- According to the UNDP report, 90 percent of countries have registered a reduction in their Human Development Index (HDI) value in 2020 or 2021, indicating that human development worldwide has stalled for the first time in 32 years.
- The 2021/2022 HDI report placed India at 132 out of 191 countries and territories.
- On the parameter of gender inequality, India's Gender Inequality Index (GII) 9 value is 0.490 in 2021 and is ranked 122. This rating is higher than that of South Asia.

**UNDP multidimensional poverty Index for India**

16.4 percent of the population in India (228.9 million people in 2020) is multidimensional poor, while an additional 18.7 percent is classified as vulnerable to multidimensional poverty (260.9 million people in 2020).

India has a **42 percent** intensity of deprivation, which is the average deprivation score among those who experience multidimensional poverty.

**Transformation of aspirational district program-**

- The Government of India launched the 'Transformation of Aspirational Districts' (Identified 117 Aspirational Districts ) initiative in January 2018 with a vision of a New India by 2022.

**Achievements of this program-**

- In numerous measures related to the theme of "Health and Nutrition," which is tracked by the programme, many aspirational districts have outperformed typical state values. For instance, 73 ADs have outperformed state averages in 10 health indices.
- Across all parameters, districts have all seen significant improvements. In the area of health and nutrition, for instance, 46 districts have witnessed improvements of up to 45%. When examining the results of financial inclusion, it was discovered that aspirational districts outperformed non-aspirational districts.
- According to several aspiring district ADs, fundamental infrastructure measures like the proportion of families with access to electricity and all-weather roads have reached saturation.
- **Template of good Governance:** - At present, two programs have been conceptualized along the lines of ADP design, one is 'Mission Utkarsh' and the other is the 'Aspirational Blocks Programme' (ABP).

**Labor reforms**

- Effective labour laws have been enacted, and technology has been used, such as web-based inspection, to enhance accountability and transparency in enforcement.
- **E-shram portal**:
  - **The Ministry of Labour and Employment (MoLE)** has developed eShram portal for creating a first-ever National database of unorganized workers, which is verified with Aadhaar.
  - For seamless service facilitation, the NCS portal and ASEEM portal are currently connected to the e-Shram portal.

**Code related to labor reforms-**

- Code on Wages, 2019
- The Industrial Relations Code, 2020
- The Code on Social Security, 2020,
- Occupational Safety, Health & Working Conditions Code, 2020

**Aadhaar: the many achievements of the unique identity-**

- **Aadhaar – Usage in DBT:** The number is sufficient to transfer any payment to an individual's bank account through Aadhaar Payment Bridge (APB).
- **Aadhaar Enabled Payment Systems (AEPS):** This has immensely facilitated providing door-step banking services and helped mitigate the hardships of the people due to the Covid-19 pandemic.
- **JAM (Jan-Dhan, Aadhaar, and Mobile) trinity**, has helped marginalized groups of society access the formal financial system through the power of DBT.
- **One Nation One Ration Card (ONORC) Scheme:** Free distribution of food grains under 'Pradhan Mantri Garib Kalyan Yojana' (PMGKY) has greatly mitigated the Covid pandemic's impact.
- **PM Kisan Samman Nidhi:** Improving Employment Trends.

**Improving employment trends-**

- Labour markets have recovered beyond pre-COVID levels, in both urban and rural areas with unemployment rates both falling from 5.8% in 2018-19 to 4.2% in 2020-21 and a noticeable rise in rural FLFPR from 19.7% in 2018-19 to 27.7% in 2020-21.
- According to ASI 2019–20 figures, employment in the organized manufacturing sector has also increased over time.



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**Role of SHGs in women empowerment-**

- India has around 1.2 crore SHGs, 88 percent being all-women SHGs. Kudumbashree in Kerala, Jeevika in Bihar, MahilaArthik Vikas Mahila Mandal in Maharashtra, and most recently Looms of Ladakh are examples of successful organizations.
- **Impact of SHGs:** Women's economic SHGs have a favorable, statistically significant impact on the economic, social, and political empowerment of women. These favorable effects on empowerment can be attained in a variety of ways.
- **Quarterly PLFS for urban areas:-** The labor participation rate increased to 47.9 percent in July-September 2022 from 46.9 percent a year ago, while the worker-population ratio strengthened from 42.3 percent to 44.5 percent in the same period.

**Formal employment-**

- **Aatmanirbhar Bharat Rojgar Yojana (ABRY),** launched in October 2020- total registration under the scheme is 75.1 lakh, and total benefits of `8,210 crores have been given to 60.2 lakh beneficiaries through 1.5 lakh establishments till now.
- **Demand for work under MGNREGS:-** From July to November 2022, it was observed that the number of people requesting employment via MGNREGS was roughly heading towards pre-pandemic levels.

**National career service projects-**

- In July 2015, the **"National Career Service (NCS)" project** was introduced as a one-stop shop offering a variety of employment and career-related services. It aims to close the gap between job seekers and companies, as well as between those looking for training and career counselling and the organisations that offer those services.

- **National Career Service Project**:- More than 9,100 job fairs have been held as part of the Project, which has registered 2.8 crore job seekers and 6.8 lakh companies. Additionally, 2.5 lakh active vacancies and 1.2 crore total vacancies have been mobilised.

**Ensuring a quality education for all-**

- The nation's first education policy for the twenty-first century, **NEP 2020**, was established with the intention of addressing the nation's numerous and pressing developmental needs.
- In order to provide inclusive and equitable quality education at all stages of schooling, **Samagra Shiksha** was launched in **2018** as an umbrella initiative for the school education sector, stretching from preschool to class XII.
- **Gross Enrolment Ratios (GER) in schools and gender parity both improved in the FY22.** GER for both boys and girls in classes I to V as a percentage of the population between the ages of 6 and 10 years has increased in FY22.
- **School Dropout:** In recent years, there has been a steady fall in all levels of school dropout rates. Both boys and girls are experiencing a drop.
- **School Infrastructure:** The education infrastructure in the form of schools, amenities, and digitalization has been steadily promoted along with a focus on pedagogy.
- Further, the availability of teachers, measured by pupil-teacher ratio, an indicator that is inversely related to improvement in the quality of education, has improved at all levels continuously from FY13 to FY22.
- **PM Schools for Rising India:.** These schools will have cutting-edge facilities, demonstrate how the NEP is being implemented, and eventually become models for other schools in the area as they take on leadership roles. In accordance with the plan, it is possible to establish more than 14,500 PM SHRI Schools between FY23 and FY27 by enhancing the current institutions run by the federal, state, municipal, or UT governments
- **The National Curriculum Framework (NCF) for Foundational Stage:-** The new 5+3+3+4 curricular structure known as NCF for Foundational Stage has been introduced, integrating early childhood care and education for all kids between the ages of 3 and 8.
- **Pilot project of Balvatika:** For pupils in the age ranges of 3+, 4+, and 5+ years, there is a focus on developing cognitive, emotional, and psychomotor abilities as well as early reading and numeracy.
- **Toy-based pedagogy:** To encourage the inclusion of indigenous toys and their pedagogy in the curricula of school education, early childhood care and education, and teacher preparation, a guidebook for Toy-based pedagogy has been created.
- **Screening tools (Mobile App) for specific learning disabilities**:A mobile app for disability screening called PRASHAST has been released; it covers 21 impairments, including the benchmark impairments listed in the Rights of Persons with Disabilities Act of 2016.
- **National Credit Framework (NCrF):** By incorporating the National Higher Education Qualification Framework (NHEQF), National Skills Qualification Framework (NSQF), and National School Education Qualification Framework, the NCrF is an umbrella framework for skilling, re-skilling, up-skilling, accreditation, and evaluation, seamlessly integrating the credits earned through school education, higher education, and vocational and skill education (NSEQF).
- **Strengthening Teaching-Learning and Results for States (STARS)**: Over the course of five years, the STARS Project will be implemented as a CSS in six states: Himachal Pradesh, Madhya Pradesh, Rajasthan, Maharashtra, Odisha, and Kerala



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- **Vidyanjali (A School Volunteer Initiative):** Through community, Corporate Social Responsibility (CSR), and private sector involvement, the country's schools are to be strengthened and the quality of education it provides improved.
- **Samagra Shiksha Scheme:** A CSS of Samagra Shiksha of the Department of School Education and Literacy is an overarching program for the school education sector extending from pre-school to class XII.

**HIGHER EDUCATION-**

**Initiatives for higher education-**

- **Research & Development Cell (RDC) in Higher Education Institutions (HEI):-** The University Grants Commission (UGC) initiated an initiative to create an RDC in HEIs with the goal of fostering high-quality research that significantly advances the objective of an independent India, in line with NEP 2020's guidelines.
- **Guidelines for pursuing two academic programs simultaneously:** The UGC, in April 2022, issued Guidelines to allow students to pursue two academic programs simultaneously keeping in view the objectives envisaged in NEP 2020.

**Akhil bharatiyashikshasamagam**

The Ministry of Education hosted a three-day Akhil Bharatiya Shiksha Samagam at Varanasi on July 7-9, 2022, in collaboration with the UGC and Banaras Hindu University.

**Equipping the workforce with employable skills and knowledge in mission mode-**

- By creating a framework for technical and vocational education, upgrading existing skills, developing new ones, and encouraging creative thinking for both current and future occupations, skill development aims to close the gap between the demand for and supply of skilled labor.

**Skill india mission-**

- Under the Mission, the government is putting various skill development programs into place all around the nation through more than 20 Central Ministries/Departments.

**Quality and affordable health for all**

- As part of the National Health Mission, the Government has made a deliberate effort to interact with all significant sectors and stakeholders in order to promote the objectives of achieving universal health coverage and provide high-quality healthcare services to everyone at affordable prices.

**Health expenditure estimates-**

- The social security expenditure on health, which includes the social health insurance program, government-financed health insurance scheme, and medical reimbursements made to government employees, has increased from 6 percent in FY14 to 9.6 percent in FY19.

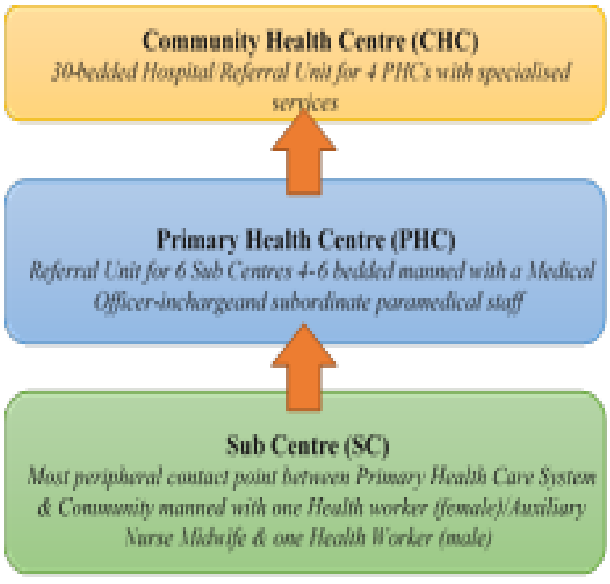
**Progress under major government initiatives for health-**

- **eSanjeevani:** It is a cutting-edge, indigenous, affordable, and integrated cloud-based telemedicine system application that enables patient-to-doctor teleconsultation to guarantee a continuum of care and facilitate health services to all residents in the comfort of their homes, at no cost.
- **Progress under Ayushman Bharat:-** 3 crore beneficiaries are among the 21.9 crore beneficiaries who have had their eligibility for the program verified.
- **Deworming:** a low-cost high-returns intervention.

**National COVID-19 vaccination programme-**

- India's national COVID-19 Vaccination program, which is the world's largest vaccination program, began on 16th January 2021, initially with the aim of covering the adult population of the country in the shortest possible time.

**Rural healthcare- strengthening of infrastructure and human resources**




**Social protection for the rainy day-**

- **Pradhan Mantri Vaya Vandana Yojana (PMVVY)**, Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJY), PM Street Vendor's Atmanirbhar Nidhi Scheme (PM SVANidhi) etc.



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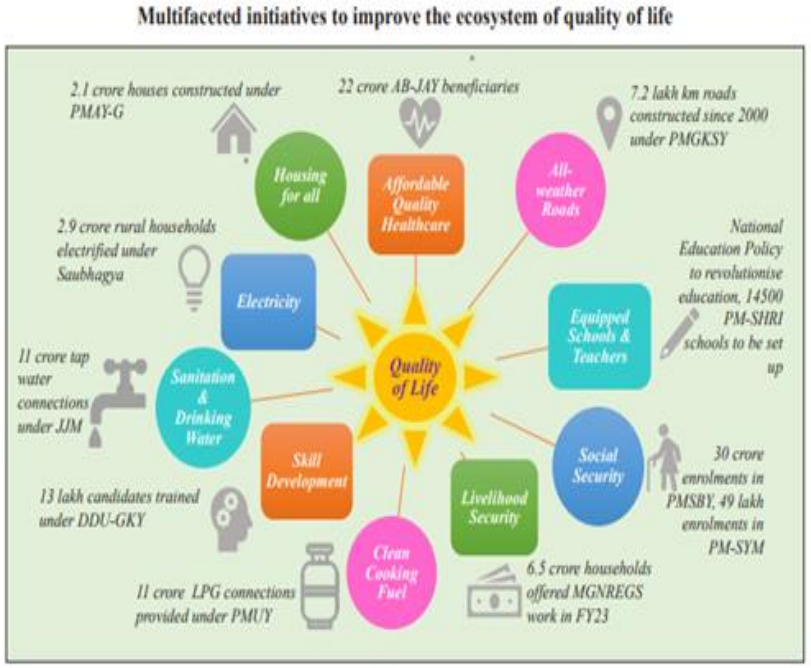
- **Development of India's Aspiring Rural Economy :-** It presently stands at 65 percent for 2021. Furthermore, agriculture provides a living for 47% of the people. Therefore, it is crucial that the government concentrate on rural development.
- **Enhancing rural income-** Deendayal Antyodaya Yojana-National Rural Livelihood Mission (DAYNRLM) - The cornerstone of the Mission is its 'community-driven' approach which has provided a huge platform in the form of community institutions for women empowerment. At the centre of the programme are rural women




**Deendayalupadhyayagrameenkaushal yojana**

- A placement-linked skill development programme called DDU-GKY is offered by the NRLM to rurally disadvantaged children.
- **Rural housing:** by 2024, all eligible houseless households residing in kutcha and dilapidated dwellings in rural areas will receive around 3 crore pucca houses with essential amenities.

**Drinking water and sanitation-**

- **Jal Jeevan Mission:** Since the launch of the Mission, 19.4 crore rural households, 11.0 crore households are getting tap water supply in their homes.
- More than 1.5 lakh villages and **Gram Panchayats** have also been renamed as **"Har Ghar Jal Block," "Har Ghar Jal Panchayat," and "Har Ghar Jal Gaon,"** respectively.
- **Jal Jeevan Mission as an instrument of public health:** With the availability of safe and potable drinking water at the doorstep of every rural household, water-borne diseases have drastically reduced from 1.8 crore in 2019 to 59.0 lakh in 2021, as per data from Directorate General of Health Services, M/o Health and Family Welfare "
- **Mission Amrit Sarovar-** was started on 24 April 2022, National Panchayati Raj Day, with the intention of conserving water for the future. In each district of the nation, 75 water bodies are to be improved and revitalised as part of the mission for this Amrit Varsh, the 75th year of independence..
- **JALDOOT App**- On September 27, 2022, the JALDOOT app was introduced to measure the water level in a Gram Panchayat using a few carefully chosen open wells twice a year (pre- and post-monsoon).

**LPG Connection-**

- 1.6 crore connections have been made available through this Ujjwala 2.0 scheme until November 24, 2022..
- **Rural connectivity:-**
    - **Pradhanmantri Gram SadakYojna:** Since its start, a total of 10,383 Long Span Bridges (LSBs) and 1,84,984 roads totaling 8,01,838 km have been approved under all of PMGSY's interventions and verticals.

**Electricity-**

- On March 31, 2022, the Saubhagya project was successfully finished and shut down.
- **Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY)-** Since the start of the Saubhagya period in October 2017, 2.9 crore households have been electrified overall through a variety of programs, including DDUGJY and Saubhgaya.

**Direct benefit transfer: a game changer**

- Over 26.5 lakh crore in total transfers for Central Schemes have been done through the DBT channel since the beginning of the DBT. Due to the removal of 9.4 crore duplicate, false, or nonexistent beneficiaries from databases during this procedure, total savings of more than '2.2 lakh crore have been realized as of 31 March 2021 for Central programs alone.

**Enhancing rural convergence for inclusive growth**

- **Rashtriya Gram Swaraj Abhiyan-** The plan was updated and given the go-ahead in April 2022 for implementation from FY23 to FY26. The focus of the scheme of Revamped RGSA is on reimagining PRIs as vibrant centers of local self-governance with a special focus on the Localisation of SDGs (LSDGs) at the grassroots level.



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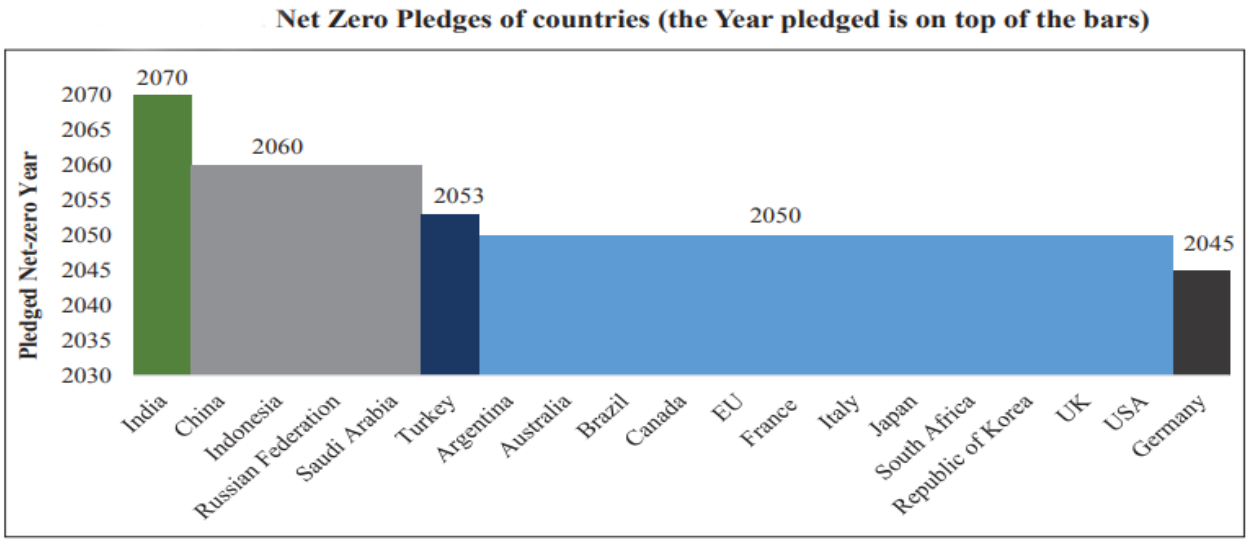
**Conclusion-**

- Future advancements will hold the key to achieving more equal economic growth with the idea of "Minimum Government; Maximum Governance." The obvious ones include strengthening community workers' contributions to healthcare, improving learning outcomes through digital and instructional interventions in schools, and supporting SHGs through improved product design and enterprise upscaling.

## CHAPTER 7 Climate Change and Environment: Preparing to Face the Future

**Introduction-**

- India has combined the development objectives with aggressive climate action goals in addition to other focused government initiatives. Examples include increased solar power capacity, higher energy saving targeting announced in PAT cycle-VII, and improved green cover made possible by the Green India Mission.
- The absence of adequate and appropriate financing continues to impede India's efforts to tackle climate change. As of now, the nation has mostly relied on domestic resources to meet its needs. A crucial component of their climate measures is financing. In order to achieve its goals for climate action, the nation has increased its attempts to mobilise private financing, notably through sovereign green bonds. In accordance with the International Capital Market Association (ICMA) Green Bond Principles, a framework for the latter has been released (2021).
- The greatest danger to humanity is posed by GHG emissions, which are an unavoidable fact for the entire planet. There is an urgent need for action to cut carbon emissions and adjust to changing climatic circumstances. By 2050, many countries promise to have zero net emissions. Some want to accomplish it by 2060 or 2070.




- Around 700 million people worldwide are predicted to be at risk of being displaced by drought by the year 2030. (U.N. SDG Portal).
- High **human vulnerability global hotspots** are mostly found in West, Central, and East Africa, South Asia, Central, and South America, Small Island Developing States, and the Arctic, according to the IPCC's Sixth Assessment Report (AR6). Additionally, the report states that Asia is the region most at risk from climate change, particularly from high heat, flooding, sea level rise, and variable rainfall.
- Ironically, those who have contributed the least to global warming bear the brunt of the adaptation load.
- **Thomas Schelling, a Nobel laureate, suggested in 2005 that allowing countries to expand first would be the best way to address climate change.**

**Arguments in support of above view**

- Economic growth would enable resource generation. This resource can be used to tackle climate change.
- It is a feasible idea for another reason: it is challenging to obtain funds from rich countries or multilateral organisations.
- Finally, when one considers that developed countries ignored their obsession with climate change and global warming to burn more coal to produce electricity this year, it does not seem so strange that developing countries must put their own growth and development goals ahead of their obligations to the global climate.
- European nations were forced to turn to coal in order to maintain their homes' warmth and lighting in order to lessen their reliance on Russian crude oil and natural gas. It is clear from the behaviour of European countries in 2022 that energy security



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is once again a top priority for governments. Therefore, it makes sense that developing economies would experience the same thing.

**India's vulnerability to climate change**Given its extensive coastline, reliance on the monsoon for agriculture, and substantial agrarian economy, India is regarded as one of the most vulnerable nations.

- **India's cumulative contribution to global emissions is under 4% (until 2019), and its per-capita emission is significantly lower than the global average.**

**Progress on India's climate action**

- In 2008, India unveiled the National Action Plan on Climate Change (NAPCC), which created eight National Missions to carry out a number of programmes and initiatives in the areas of solar, water, energy efficiency, forests, sustainable habitat, sustainable agriculture, maintaining the Himalayan ecosystem, building capacity, and research and development (R&D).
- A central sector programme called the National Adaptation Fund for Climate Change (NAFCC) was launched in 2015–16 to provide funding for adaptation efforts in India's States and Union Territories (UTs) that are particularly susceptible to the negative effects of climate change.
- The Indian government amended its NDC on August 26, 2022, demonstrating increased ambition in its climate efforts.

| | |
|---|---|
| National Solar Mission | •Solar power capacity of 61.62 GW installed by October 2022 |
| National Mission for Enhanced Energy Efficiency | •PAT Cycle–VII notified in October 2021 for energy saving target of 6.63 Million Tonnes of Oil Equivalent (MTOE) |
| National Mission on Sustainable Habitat | •721 km of metro rail network made operational by August 2022.<br>•62.79 lakh individual household toilets and 6.21 lakh community and public toilets constructed by April 2022 |
| National Mission for a Green India | •₹ 626.96 crore for afforestation targets over an area of 2.1 lakh ha |
| National Water Mission | •Jal Shakti Abhiyan: Catch The Rain 2022 |
| National Mission on Strategic Knowledge for Climate Change | •Created and strengthened 12 Centres of Excellence for climate change (June 2021) |
| National Mission for Sustaining Himalayan Ecosystems | •Inter-University Consortium<br>•8 Major R&D Programmes initiated |
| National Mission for Sustainable Agriculture | •Key targets for FY 2022-2023 covering 0.15 lakh ha under organic farming and 10 lakh ha under micro irrigation |

**Status of forest and tree cover**

- In the past 15 years, there has been a steady and gradual growth in the amount of forest and trees in India.
- In terms of the net increase in average yearly forest area between 2010 and 2020, the nation is in third place globally.The Green India Mission (GIM), Compensatory Afforestation Fund Management and Planning Authority (CAMPA), National Afforestation Programme (NAP), Green Highway Policy - 2015, and others are among the most notable.

**Carbon stock in India's forest and tree cover**

- The carbon stock of forests would be around 7,204 million tonnes in 2019, up 79.4 million tonnes from the forecasts for 2017 made by the Indian State of Forest Report (ISFR). This is equivalent to the carbon emissions from trees and forests being stored as 30.1 billion tonnes of CO2 equivalent.
- Arunachal Pradesh has the highest carbon stock in the forest among the Indian states (1023.84 million tonnes), followed by Madhya Pradesh ( 609.25 million tonnes) Jammu & Kashmir is contributing the most per-hectare carbon stock among the States/UTs, with 173.41 tonnes, followed by Himachal Pradesh (167.0 tonnes), Sikkim (166.2 tonnes), and the Andaman & Nicobar Islands (166.2 tonnes) (162.9 tonnes)

**Preservation of ecosystem: a critical adaptation action**

- India has 75 Ramsar sites covering an area of 13.3 lakh hectare, and 49 of these have been added in last 8 years.
- According to a recent study, by 2070, certain mangrove species in India's east coast Chilika and Sundarbans, west coast Dwarka and Porbandar are anticipated to decrease and move inland due to a drop in appropriate habitats as a result of precipitation and sea level changes.
- To safeguard and preserve mangroves, the government has implemented both legislative and promotional efforts. It is being done through the National Coastal Mission Programme on "Conservation and Management of Mangroves and Coral Reefs."



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- Regulatory actions are carried out through the Coastal Regulation Zone (CRZ) Notification in accordance with the Environment (Protection) Act of 1986, the Wild Life (Protection) Act of 1972, the Indian Forest Act of 1927, the Biological Diversity Act of 2002, and rules made under these acts as they have been amended from time to time (2019).
- According to ISFR 2021, the country's mangrove cover has grown by 364 square kilometers since 2013.

**Approach to transition to renewable energy source**

- Investments in renewable energy are increasingly being made in India. As per the renewables 2022 global status report, during the period of 2014- 21, total investment in renewable stood at US $ 78.1 Billion in india.Since 2016, the amount invested in renewable energy has been at or above 10 billion, with the exception of a decline in 2020 that was probably brought on by different Covid-19 regulations.

**Green hydrogen- a critical source of alternate energy**

- The National Green Hydrogen Mission was approved by the government on January 4, 2023, with an initial investment of 19,744 crore. The mission's goals are to make India an energy-independent country and to decarbonize crucial sectors. The Mission will facilitate demand creation, production, utilization, and export of Green Hydrogen and mobilization of over ₹8 lakh crore of investment by 2030.

**Finance for sustainable development**

**Green bonds**

- India has released the final framework for sovereign green bonds. The Framework has been designed to comply with the components and the key recommendations of the international capital market association (ICMA) green bond priciple (2021).
- The indicative calendar for the issuance of sovereign green bonds (SrGB) for the fiscal year 2022–2023 has been announced by the Reserve Bank of India (RBI).

**Critical Minerals-Key to Green Transition**

Critical mineral requirements are expected to rise dramatically as a result of the transition to a sustainable energy system. This is due to the significant differences between an energy system fueled by clean energy technology and one fueled by conventional hydrocarbon resources. For the manufacture of electric vehicles and batteries as well as the capture of solar and wind energy, cobalt, copper, lithium, nickel, and rare earth elements (REEs) are essential. Electric vehicles (EVs), wind farms, and solar photovoltaic (PV) plants all require more minerals than their fossil fuel-based counterparts. An onshore wind project needs nine times more mineral resources than a gas-fired plant does, whereas a typical electric car needs six times as much as a conventional automobile does. By technology, several sorts of mineral resources are employed. Battery performance, longevity, and energy density depend on the presence of lithium, nickel, cobalt, manganese, and graphite. Permanent magnets, which are necessary for EV motors and wind turbines, depending on REEs. Aluminum and copper are essential for energy networks, with copper serving as the foundation of all electricity-related technologies. The worldwide supply chain for key minerals is highly concentrated and unevenly distributed, despite the fact that demand is expected to rise as a result of the global desire for and emphasis on renewable energy. In light of the increased demand for the resource, its lopsided distribution creates a supply risk.

**Investing in Resilience for Sustainable Development**

- Since 2012, the top 100 listed companies (ranked by market value) have been subject to mandatory ESG-related disclosures. SEBI was one of the early adopters of sustainability reporting for listed organisations.
- The requirement has been tightened over time to include the top 500 and subsequently top 1000 businesses.

**Major decisions at COP 27-**

- Developing countries pushed for the establishment of a separate fund for loss and damage during COP 27. After discussions, it was determined to create new financial arrangements with a focus on loss and damage to help poor nations that are especially susceptible to the negative consequences of climate change respond to loss and damage.

**India's initiative at the international stage**

- International Solar Alliance (ISA)
- Coalition for Disaster Resilient Infrastructure
- Leadership Group for Industry Transition (LeadIT)

**Initiatives related to other environmental issues-**

- India is the fourth most varied nation in Asia and the eighth most diverse nation overall. It is also rich in fauna, and nearly 62 percent of the recorded amphibian species are endemic to India, which is majorly found in the Western Ghats.
- India is ranked seventh in the world for the origin and diversity of crop plants since it has more than 300 wild species that are near cousins of domesticated plants and are naturally thriving there.
- India passed the **Biological Diversity Act in 2002** in accordance with the CBD's principles.



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- In order to strengthen and improve coordination and cooperation in the areas of forests, wildlife, environment, biodiversity conservation, and climate change, including restoration of corridors and interlinking areas and sharing of knowledge and best practises between the two countries, India and Nepal signed a Memorandum of Understanding (MoU) on biodiversity conservation in August 2022.

**Project Cheetah**

The introduction of Cheetahs in India is being done under Project Cheetah, the world's first intercontinental large wild carnivore translocation project. The cheetah was declared extinct in India in 1952. Eight Namibian wild cheetahs were introduced on September 17, 2022, at Kuno National Park, Madhya Pradesh, as part of the plan. There are five female and three male cheetahs out of a total of eight. A lengthy list of actions has been taken to ensure sustainability and environmental protection, including the historic reintroduction of cheetahs in India. In India, cheetahs can assist in restoring open forest and grassland environments. To oversee the introduction of the Cheetah, the government has established a Task Force. Two years are allotted for the Task Force's existence. The Task Force was established primarily to Review, advance, and monitor the health status of cheetahs; maintain the enclosures used for quarantine and soft release; ensure that the entire area is protected; ensure that forest and veterinary officials follow the established protocols; and provide guidance on the introduction of cheetahs to India in terms of general health, behavior, and maintenance.

**Wildlife- its protection and preservation**

- With 53 Tiger Reserves spread across 18 States and covering an area of over 75,796.8 sq. km, India is home to about 75% of the world's wild tiger population. India doubled its tiger population in 2018, four years ahead of schedule compared to 2022. Furthermore, two Tiger Reserves in the nation have achieved the International Tx2 Award, and 17 Tiger Reserves nationwide have CA|TS international certification.
- Similar to this, there has been a continuous rise in the population of Asiatic Lions.
- The current population estimates indicate about 50,000 – 60,000 Asian elephants worldwide. More than 60 percent of the population is in India.

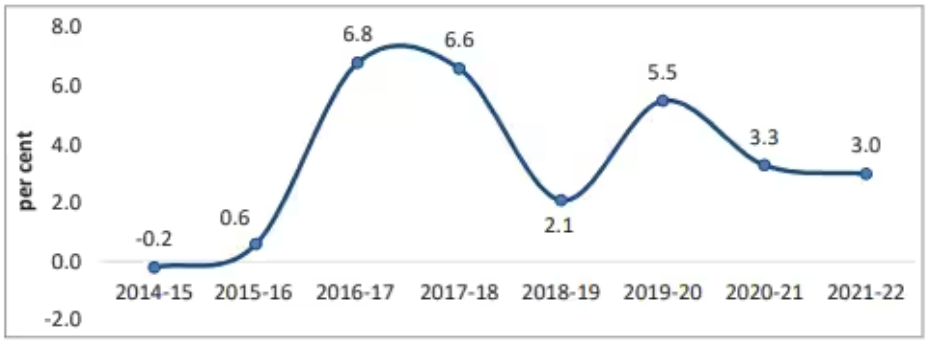
**Other environmental initiatives taken by india-**

- Plastic Waste Management and Elimination of Identified Single-Use Plastics
- The Government published the Battery Waste Management Rules, 2022
- The Government notified the E-Waste (Management) Rules, 2022

## CHAPTER 8: Agriculture & Food Management: From Food Security to Nutritional Security

**Introduction-**

- The chapter focuses on government interventions to enhance credit availability, facilitate mechanization, and boost horticulture and organic farming.
- The agriculture and related activities sector made a substantial contribution to the general growth and development of the nation by guaranteeing food security thanks to its strong forward links.
    - Over the past six years, the agriculture industry in India has expanded at an average annual growth rate of 4.6 percent. It grew by 3.0 percent in 2021-22 compared to 3.3 percent in 2020-21.
    - India's exports of agricultural and related goods increased by 18% in 2020–21 compared to the previous year.
    - The value of agricultural exports peaked in 2021–2022 at US$ 50.2 billion.




Source: MoSPI's Annual and Quarterly Estimates of GDP at constant prices, 2011-12 series.

- This period of buoyancy could be ascribed to the measures taken by the government to promote the farmer-producer organization, **encourage crop diversification, and improve productivity in agriculture** throughsupport provided for **mechanization** and the creation of **agricultural infrastructure funds.**



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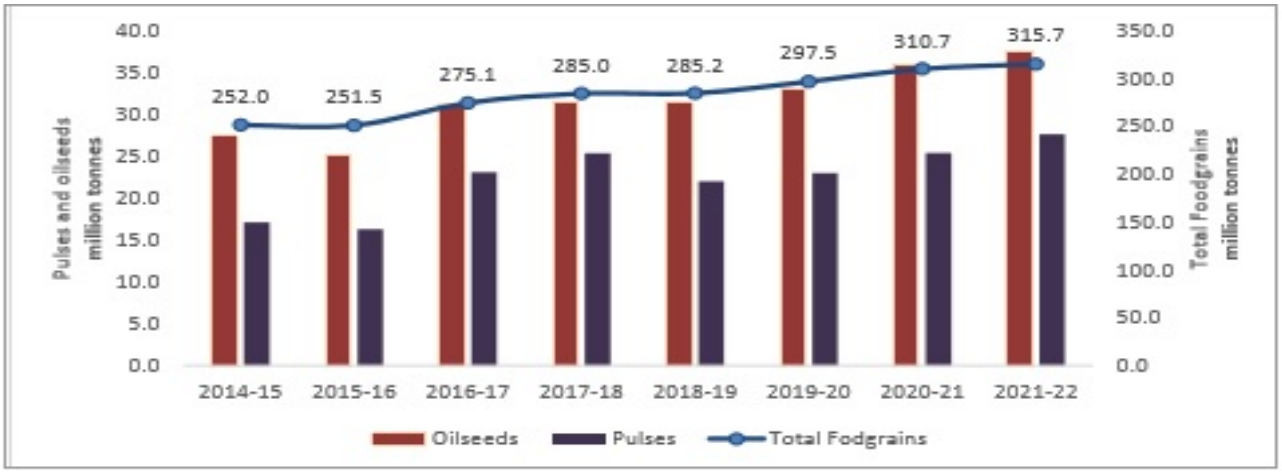
- Additionally, by providing income support to farmers through the **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)** and encouraging related activities, farmers' revenue streams have been diversified, increasing their resilience to weather shocks.
- Even though Indian agriculture has done well, the industry needs to be refocused in light of a number of issues, including the negative effects of climate change, fragmented landholdings, inadequate agricultural mechanization, low productivity, covert unemployment, growing input costs, etc.

**Record production of foodgrains-**

- According to the fourth advance estimates for 2021–22, food grain and oil seed production has been rising year over year (YoY).
- Pulses were also produced at a rate that was significantly higher than the average of 23.8 million tonnes over the previous five years.
- However, changing climate has been impacting agriculture adversely. An early heat wave during the wheat harvesting season in 2022 had a negative impact on the crop's productivity. Due to the year's delayed monsoons and insufficient rainfall, the area sown for paddy cultivation also decreased during the Kharif season.




**MSP to ensure returns over the cost of production**

According to the union budget for 2018–19, Indian farmers would receive MSPs of at least 1.5 times their production costs. Given nutritional requirements and changing dietary patterns, and to achieve self-sufficiency in pulse and oilseed production, the government has fixed a relatively higher MSP for pulses and oilseeds.

**Enhance access to agricultural credit-**

- To enable farmers to buy agricultural goods and services on credit whenever they choose, the Kisan Credit Card Scheme (KCC) was created in 1998.
- The number of such cards in the fisheries and animal husbandry sector has increased as a result of the Government of India's extension of the KCC facility to farmers in 2018–19.
- The Interest Subvention Scheme (ISS), now known as the Modified Interest Subvention Scheme (MISS), was established by the Government of India to offer farmers short-term credit at subsidized interest rates in order to ensure that the farmers pay the banks the lowest possible interest rate.



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**Farm mechanization- key to improving productivity**

- Farm mechanization lowers the cost of cultivation and the labor-intensive nature of many farm operations while increasing output through the timely and effective utilization of other inputs and natural resources.
- State governments are given assistance as part of the **Sub Mission on Agricultural Mechanization (SMAM)** to set up Custom Hiring Centers, train and demonstrate agricultural machines, and support farmers in purchasing various farm tools and equipment (CHC).

**Chemical-free india: organic and natural farming**

- **India has the biggest number of organic farmers in the world (44.3 lakh), and by 2021–2022, roughly 59.1 lakh acres would be used for organic farming.**
- Sikkim voluntarily adopted going organic. It achieved complete organic status, becoming the first state in the world to do so. Tripura and Uttarakhand are two more states that have similar goals.
- The government has been supporting organic farming since 2015 through the development of clusters and **Farmer Producer Organizations (FPOs) under the Paramparagat Krishi Vikas Yojana (PKVY) and Mission Organic Value Chain Development for North Eastern Region (MOVCDNER) programs.** Cluster mode is being used to implement the PKVY Scheme.
- Zero-Budget Natural Farming was one of the modes of ecological farming that was encouraged when **Bhartiya Prakratik Krishi Paddhati (BPKP), a sub-scheme of PKVY,** was introduced in 2019–20 to help farmers adopt traditional indigenous techniques (ZBNF). The program's main objectives are capacity building, training, support, and on-field natural farming demonstrations by champion farmers.

**Other important initiatives of agriculture-**

- PM KISAN Scheme
- Agriculture Infrastructure Fund (AIF)
- Pradhan Mantri Fasal Bima Yojana (PMFBY)
- Mission for Integrated Development of Horticulture (MIDH)
- National Agriculture Market (e-NAM) Scheme

**Climate-smart farming practices**

Farmers employing renewable energy sources like solar for irrigation are helping this idea slowly gain traction. Farmers have received incentives to connect solar-generated electricity to the local grid. Drones and artificial intelligence are being used in crop yield prediction models to monitor soil and crop health. Crop diversity is made possible through smart farming, and thus lessens farmers' reliance on the monsoons for water. In India, there are more than 1,000 agritech startups. These help farmers develop their farming practices.

- The International Year of Millets was established by the United Nations General Assembly during its 75th session in March 2021. (IYM). Millets are nutritious, climate-resilient Smart Foods that support a number of UN Sustainable Development Goals (SDGs). These are also significant due to their enormous potential to provide livelihood, boost farmer income, and guarantee global food & nutritional security.

**Allied sector: animal husbandry, dairying and fisheries catching up in recent years**

- The Committee on Doubling Farmers' Income has recommended a targeted policy with an accompanying support system for the allied sector in recognition of the growing importance of allied industries. These industries include dairying, livestock, poultry, fisheries, and horticulture, which are all high-growth engines.
- Since it directly employs more than eight crore farmers, the dairy industry is the most important part of the livestock industry and the most well-known agrarian product. The value of other livestock products, such as eggs, and meat, is also rising. India is the world leader in milk production, but it comes in third in egg production and eighth in meat output.

**Important initiative in the allied sector-**

- The Animal Husbandry Infrastructure Development Fund (AHIDF)
- National Livestock Mission (NLM)
- The Livestock Health and Disease Control (LH&DC) Scheme
- National Animal Disease Control Programme (NADCP)
- Pradhan Mantri MatsyaSampada Yojana (PMMSY)
- Fisheries and Aquaculture Infrastructure Development Fund (FIDF)



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**Sahakar-se- samriddhi: from cooperation to prosperity**

- The cooperative societies offer the rural population with livelihood options and a financial safety net using a community-based strategy, particularly in the agriculture, dairy, and fisheries sectors. The secret to transforming rural economies lies in cooperatives.
- The development of the cooperative sector was given new push in order to accomplish the "Sahakar-see-Samriddhi" vision. **Currently, around 19 percent of agriculture finance is through cooperative societies.**
- **In July 2021, a full-fledged Ministry of Cooperation was established to give the cooperative industry more attention.** In addition, the Government has taken various initiatives to promote and strengthen PACS, like the computerization of 63,000 functional PACS and the preparation of by-laws for enabling PACS to expand their activities.

**New National Cooperation Policy**

A new national cooperation policy is being developed with the participation of the relevant parties, including cooperative sector experts, representatives from national, state, district, and primary level cooperative societies, secretaries (cooperation), resident commissioners from states and UTs, and officials from the central government, with the goal of strengthening the cooperative movement in the nation, expanding its reach to the grassroots, and promoting cooperative-based economic development. The goal is to have a policy that unleashes the cooperation sector's full potential.

The Multi-State Cooperative Societies (Amendment) Bill, 2022, is another decision made by the government. The bill aims to strengthen the cooperative movement in the nation by introducing provisions relating to electoral reforms, strengthening governance and transparency, reforming the composition, meetings, and membership of boards, enabling the cooperative sector to raise funds, strengthening monitoring mechanisms, and enhancing "Ease of doing business." The Multi-State Co-operative Societies Act, 2002, is being amended to conform to Part IXB of the Constitution. The bill was introduced in the Lok Sabha on 7th December 2022 in the winter session of parliament.

**Food processing sector: the sunrise sector**

- There is a constant need for significant investment in cold chain infrastructure to handle logistical issues and enable the unrestricted growth of the food processing sector. According to the NITI Aayog Strategy for New India, a significant supply-side barrier that causes significant post-harvest losses is the absence of adequate and effective cold chain infrastructure.
- Recognizing the sector's enormous potential, the government has taken the lead in developing different interventions aimed at the growth of food processing in the nation. Through the **Pradhan Mantri Kisan SAMPADA Yojana (PMKSY)** component schemes, the Ministry of Food Processing Industries offers financial support for the sector's overall expansion and advancement.
- The Ministry also introduced the **PMFME (Prime Minister's Formalization of Micro Food Processing Enterprises) Scheme in 2020** as a component of the ANB Abhiyan to improve the competitiveness of individual micro-enterprises in the unorganised segment and promote the formalisation of this sector by offering financial, technical, and business support for the renovation or establishment of 2 lakh micro units nationwide. The programme uses the One District One Product (ODOP) strategy to take advantage of scale in input procurement, the use of shared services, and product marketing.
- Launched in March 2022, the **Production Linked Incentive Scheme for Food Processing Industry (PLISFPI)** has the explicit goal of encouraging investments to establish global food champions. Support is provided to industries with high growth potential, such as marine products, processed fruits and vegetables, and 'Ready to Eat/Read to Cook' products.
- The **Krishi UDAN 2.0** version was introduced in October 2021 as a six-month experimental project with a focus on delivering perishable food goods, including horticulture, fishery, livestock, and processed products, from the Hilly Areas, North-Eastern States, and Tribal Areas.

**Food security: social and legal commitment to the people of the nation**

- **In order to ensure food security, one must not only be able to produce food but also have access to it.**
- Under the **National Food Security Act (NFSA), 2013**, the government is currently implementing the largest legislation-based food security programme in the world, serving nearly 80 crore people in India.
- The **One Nation One Ration Card (ONORC) program** was introduced by the government in 2019 to significantly simplify the process of gaining access to food. Ration cards can be transported both within and across states thanks to the ONORC system. By utilizing the same ration card after biometric/Aadhaar authentication on electronic Point of Sale (e-PoS) devices at the FPS, it enables the migrant beneficiaries to receive their food security entitlements from any fair price shop (FPS) of their choice.



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## CHAPTER - 9 Industry Steady Recoveries

**Overview of Indian industries-**

- The sector plays a significant role in the Indian economy, generating around 30% of the nation's total gross value added.
- The outbreak of the Russian-Ukrainian conflict in FY23 presented the Indian sector with some extraordinarily difficult obstacles. As a result, several goods saw a dramatic increase in price.
- Demand stimulation for industrial expansion has been given by strong domestic conditions since FY22. The rise in investment demand has proven to be a potent driver of industrial expansion.
- It was caused by the federal government's increased capital expenditures in the current and previous years compared to the years before to the pandemic.

**Demand Stimulus To Industrial growth**

- The month-old crisis between Russia and Ukraine was still going strong at the start of FY23. The war seemed to have reached a plateau as the year came to a close, but global commodity prices have not yet begun to decline to their pre-pandemic levels.
- As a result, industry has had to deal with high import input costs throughout the year. The sector has been gradually passing on the higher production costs because to concerns about the impact on demand, which has resulted in core retail inflation that is sticky but not growing.
- Contrarily, as local weather extremes have subsided and government efforts to limit price increases have been successful, non-core retail inflation, which includes food and energy components, has been dropping. Because of this persistent pent-up consumer demand in the post-pandemic Indian economy and the resulting drop in overall retail prices, an industrial recovery has occurred despite the adverse global economic conditions.
- Core retail inflation is anticipated to slow down as a result of the current decline in world commodity prices, which is also being seen in India's wholesale inflation rates. This would increase local demand for goods and services, which will further spur the nation's industrial growth.

**Supply response of Industry-**

- High-frequency indicators demonstrate the industry's strong supply response to the demand boost. For instance, PMI-Manufacturing has been in the expansionary zone since July 2021 for a total of 18 months.
- The subindices of the PMI-Manufacturing in December 2022 showed stable export orders, a slowing of input cost pressures, and improved supplier delivery times. The momentum of output prices has also slowed down as a result of the slowdown in input cost inflation. However, the rate of growth in new export orders slowed, indicating a muted global demand.
- The entire IIP, which produces consumer durables in accordance with the "pent-up" consumption demand, is likewise exhibiting the persistent development of industrial output. Strong rise in the production of infrastructure and capital goods is a sign that an investment cycle will start in the private sector in the upcoming fiscal year.
- The demand for inputs across sectors must be met in large part by the eight key industries of coal, fertilisers, cement, steel, electricity, refinery products, crude oil, and natural gas. These industries' growth has remained constant, reflecting a general uptick in economic activity.
- Uneven growth across different categories can be seen in the manufacturing landscape. For instance, the manufacturing of motor cars is performing better than expected thanks to strong demand and an improvement in the chip shortage.

**Robust growth in bank credit to industry-**

- Bank loan growth has maintained up with industrial expansion, and a sequential upswing has been visible since January 2022. While major companies continue to receive a considerable portion of bank credit, lending to MSMEs has also significantly increased, in part due to the implementation of the ECLGS, which supports about 1.2 crore enterprises, of whom 95% are MSMEs.
- Rebounding consumption levels, notably in the services sector, supported growth in credit to MSME. Consequently, the share of MSMEs in gross credit offtake to the industry rose from 17.7 percent in January 2020 to 23.7 percent in November 2022.
- Businesses' confidence in future demand is supported by a strong increase in loan demand, increased capacity utilisation, and investments in manufacturing.

**Resilient FDI flows in the manufacturing sector**

- The manufacturing sector's annual FDI equity inflows have been rising over the past few years. Due to the advanced economies' expansionary measures in response to the pandemic, it increased from US$ 12.1 billion in FY21 to US$ 21.3 billion in FY22.



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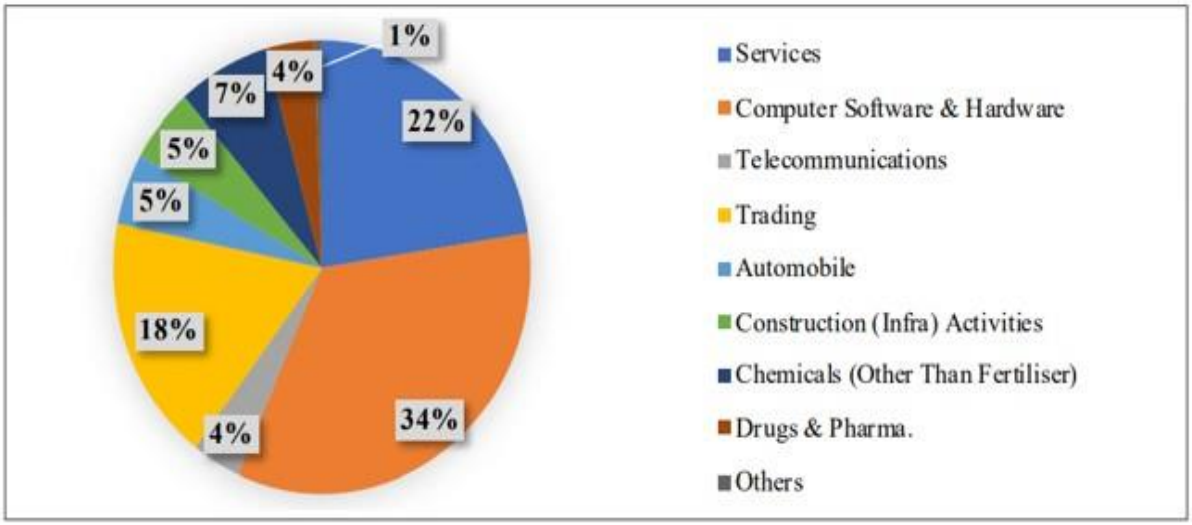
- The FDI equity inflow in manufacturing in the first half of FY23 decreased compared to its corresponding level in the first half of FY22 due to the rise in global uncertainty following the Russia-Ukraine war. The inflows of FDI equities have been further constrained by the global monetary tightening.

**Sector-wise FDI Equity Inflows in 2022-23 during April-September 2022**




- Nonetheless, a recovery in FDI inflows is anticipated as long as the Indian economy maintains its strong growth rate and as global monetary tightening finally eases with a reduction in inflationary pressures.
- Notwithstanding a general decline in FDI in the first half of FY 23, inflows have continued to be higher than they were before the pandemic, making India one of the most alluring FDI destinations in the world. This is due to structural reforms and policies that make doing business easier.
- The government has put in place a pro-investor FDI policy, under which FDI up to 100% is allowed through automatic pathways in the majority of sectors. India keeps broadening the amount of FDI it allows while easing restrictions on regular investment.

**FDI policy reforms to bolster Investment**

To make India a more attractive investment destination, the government has implemented several radical and transformative FDI reforms across sectors such as defense, pension, e-commerce, etc. In FY20, 100 percent FDI under the automatic route was permitted for the sale of coal, and coal mining activities, including associated processing infrastructure, subject to provisions of relevant acts. 26 percent of FDI under the government route has been permitted for uploading/ streaming of news and current affairs through digital media. 100 percent FDI has been permitted in intermediaries or insurance intermediaries, including insurance brokers, reinsurance brokers, insurance consultants, corporate agents, third-party administrators, surveyors and loss assessors, and any more organizations that the Insurance Regulatory and Development Authority may occasionally notify.

**Industry groups and their challenges -**

**Micro, Small, and Medium Enterprises (MSMEs) post-smart recovery from the pandemic**

- The government has taken a number of actions through the AatmaNirbhar Bharat Package to mitigate the pandemic's economic effects on MSMEs.
- The modification of the definition of MSMEs, the provision of subordinate debt for stressed MSMEs, the infusion of equity through the Self Reliant India Fund, the waiver of the requirement for global tenders for procurement, and the launch of the Udyam portal for MSME registration—a paperless, free registration portal based on self-declaration and requiring only Aadhaar—are a few of the actions taken.
- The government's initiative of the Samadhaan Portal, set up under the Micro, Small, and Medium Enterprises Development (MSMED) Act to monitor the outstanding dues to the MSME sector, is helping MSMEs in resolving their cashflow difficulties.
- Also, in FY23, the government launched the "Raising and Accelerating MSME Performance" scheme (RAMP).

**The electronics industry to be a key driver of manufacturing output and export**

- The importance of the electronics industry keeps growing as its uses become more widespread, especially in the socioeconomic development of a nation. Electronics will considerably increase productivity, effective service delivery, and societal transformation, underpinned by continually increasing communication services.



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**Incentives to encourage semiconductor manufacturing in the US and India**

- The United States' Providing Beneficial Incentives to Manufacture Semiconductors and Science Act, 2022, is one of the most notable laws (CHIPS and Science Act, 2022). The legislation's primary goal is to encourage investments in US domestic semiconductor manufacturing capacity. Around 10% of the world's semiconductors are produced in this nation, which mainly depends on East Asia for chip imports.
- As part of its pursuit of Aatmanirbharta and with the aim of integrating into the global value chain, India has made a number of announcements to entice capital investment in the creation of an ecosystem for the semiconductor manufacturing industry.
- Various incentives under Semiconductor Scheme- Setting up of Semiconductor Fabs in India, Setting up Display Fabs, Setting up of Compound Semiconductors / Silicon, Photonics / Sensors Fab, and Semiconductor ATMP /OSAT facilities, Design Linked-Incentive (DLI) scheme

- The PLI scheme for large-scale electronics manufacturing, the PLI scheme for IT hardware, and the **Scheme for Promoting Manufacturing of Electronic Components and Semiconductors** are some of the initiatives and incentives offered by the government to nurture and improve the electronics manufacturing base (SPECS).
- The Cabinet of India approved the comprehensive creation of a sustainable semiconductor and display ecosystem in the nation under the Plan for Development of Semiconductors and Display Manufacturing Ecosystem in India.

**Coal industry: key in maintaining energy self-reliance during uncertain times.**

- Due to a rise in economic activity and the emergence of severe heat waves from early March to mid-May of 2022, which increased the demand for power in the nation, coal availability for India's primarily thermal-based power generation facilities became a problem at the beginning of the fiscal year. The availability of coal decreased in as local production could not keep up with the growth in demand from power plants.

**India becomes the world's third largest automobile market**

- India's economy is mostly driven by the automobile industry. India surpassed Germany and Japan to take over as the third-largest vehicle market in December 2022.
- The sector's significance can be determined by the fact that, by the end of 2021, it will be responsible for 3.7 crore direct and indirect jobs, contribute 7.1 percent to the overall GDP and 49 percent to the manufacturing GDP.

**India's prospect as a key player in the global value chain**

- In the wake of the US-China trade war, the Covid-19 epidemic, and the Ukrainian conflict, the potential of supply chain disruptions has never been more real.
- This decade offers India a rare opportunity to establish itself as a centre for global manufacturing.
- The potential for huge domestic demand, the government's push to promote manufacturing, and a particular demographic edge, including a sizable portion of the young labour, are the three key assets to seizing this special opportunity.
- India's manufacturing sector is gradually moving towards more automated and process-driven manufacturing, which should improve efficiency and enhance industry production.
- The 'Make-in-India' Initiative was launched in 2014 to make India a hub for manufacturing, design, and innovation. Since then, it has promoted investment, encouraged innovation, and created infrastructure of the highest calibre.

**Make in india 2.0 and the PLI scheme**

- The "Made in India 2.0" initiative is currently concentrating on 27 areas, including 15 manufacturing sectors and 12 service sectors, to further strengthen India's integration in the global value chain.
- In pursuit of the objectives of the Make-in-India program and with a vision to achieve Aatmanirbharta, the government launched the PLI scheme. For the next five years, the scheme is anticipated to generate capex of almost 3 lakh crore.
- It has the potential to generate employment for over 60 lahks in India and increase the share of the manufacturing sector in total capital formation, which currently stands at around 17-20 percent between FY12 and FY20.



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**shipbuilding sector: achieving self-reliance and promoting make in India**

The shipbuilding industry is a strategically important industry due to its role in energy security, national defense, and the development of the heavy engineering industry. It might boost the sector's and the services' potential contribution to the GDP at large. The mission of a "Atmanirbhar" Bharat could be strengthened through the shipbuilding sector. The shipbuilding projects for the Indian Navy (IN) that are now underway at various Indian shipyards are ready to give the sector the necessary boost.

- By implementing the PLI Scheme across these important niche markets, India will become a vital player in the global value chain, increase the competitiveness of its manufacturers abroad, and attract investment in cutting-edge technology and core competencies. The programme will help the nation's MSME ecosystem.

**Fostering innovation**

- The government uses incubators, support, money, industry-academia partnerships, and mentorship to encourage innovation.
- The government has also strengthened its IPR regime by modernizing the IP office, reducing legal compliances, and facilitating IP filing for start-ups, women entrepreneurs, small industries, and others. This has resulted in a 46 percent growth in the domestic filing of patents over 2016-2021, signaling India's transition towards a knowledge-based economy.
- These measures have begun to pay dividends. The Global Innovation Index (GII), which includes about 80 variables including assessments of each economy's political environment, educational system, infrastructure, and capacity for knowledge creation, ranks the nations based on their performance in terms of innovation.
- ndia, which improved its ranking from 81 in 2015 to 40 in 2022, entered the top 40 innovating countries for the first time since the GII's creation in 2007 according to the GII 2022 report. Moreover, India surpassed Vietnam (48th) to become the lower middle-income group's most inventive nation, claiming the lead in Central and Southern Asia.

**flipping and reverse flipping: the recent developments in start-ups**

- One of the world's largest startup ecosystems is found in India. Start-ups have received a significant boost thanks to a number of government programmes. For instance, under the **Start-up India Initiative,** eligible companies get recognized as Start-ups by DPIIT to access a host of tax benefits, easier compliance, and IPR (Intellectual Property Rights) fast-tracking.
- Entrepreneurship and innovation are promoted throughout the nation's startup ecosystem under the auspices of the **National Initiative for Developing and Harnessing Innovations (NIDHI) and Atal Innovation Mission (AIM)** umbrella programmes.
- Seed investment and subsequent credit requirements are supported by the Fund of Funds for Start-ups (FFS) and the Credit Guarantee Scheme for Start-ups (CGSS).

**Structural reforms have enhanced the ease of doing business**

- The "Make in India" initiative works to make sure that the business environment in the country is favourable for foreign investors conducting business there and contributing to the expansion and advancement of the country.
- This has been accomplished through a number of changes that have boosted economic expansion and investor inflows.The reform measures include amendments to laws and liberalization of guidelines and regulations to reduce compliance burdens, bring down costs, and enhance the ease of doing business in India. Regulation compliance has been made less onerous through rationalisation, decriminalisation, simplification, and digitisation.
- Corporate tax reduction, public procurement, and the Phased Manufacturing Program are measures taken to encourage production and investments.

**India and industry 4.0**

- The fourth industrial revolution, or "industry 4.0," as it is also known, has started.
- New technologies like cloud computing, IoT, machine learning, and artificial intelligence (AI) are integrated into manufacturing processes as part of the transformation, creating efficiency throughout the value chain.
- India has made great progress in recent years in terms of internet access, which is one of the essential requirements of industry 4.0.
    - Hyper-efficient processing technology will be erected as another pillar of this revolution in India thanks to the push for self-reliance in semiconductor technology and manufacture.
    - A few initiatives by the government include Smart Advanced Manufacturing and Rapid Transformation Hub (SAMARTH). In 2018, the Centre for Fourth Industrial Revolution was founded in India as part of Udyog Bharat 4.0, with the goal of creating regulatory frameworks for cutting-edge technology.



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**Conclusion and outlook**

- Industrial production increased during FY23 despite global challenges, supported by persistent demand conditions. Bank loan expansion has maintained up with industrial expansion, and a sequential uptick has been visible since January 2022. The establishment of the ECLGS has contributed to a notable rise in credit to MSMEs. In the first half of FY23, FDI in the manufacturing sector moderated amid increased global unpredictability.
- FDI in the manufacturing sector moderated in the first half of FY23. Nonetheless, because of structural reforms and steps to make doing business easier, inflows continued to be significantly higher than they were before the pandemic, making India one of the most appealing FDI locations in the world.
- Positively, lessening input cost pressures brought on by a decline in global commodity prices bodes positively for business profitability. On the negative side, there is a decrease in exports that is likely to continue along with a possible worldwide economic recession. In the face of fresh disruptions at the global level, volatile international commodity prices and disruptions in the supply of raw materials may have an adverse effect on industrial growth.

## CHAPTER 10 :Services: Source of Strength

**Trends In high-frequency Indicators**

**Services PMI**

- From May to September 2022, India's services industry, which had been contracting owing to the Russia-Ukraine conflict, the Omicron variant, and COVID-19, softened as economic uncertainty led to poorer sales growth and inflationary pressures restrained the uptick in business activity. Further, price pressures and unfavorable weather also dampened domestic demand.
- However, following an overall easing of inflation, it witnessed an uptick and expanded in December 2022.

**Bank credit**

- Bank credit has been witnessing significant growth since October 2021 due to vaccination coverage and services sector recovery. NBFCs shifted to bank borrowings because of high bond yields and hence, its credit grew.
- However, a fall in lending to the shipping and aviation sectors in November 2022 was brought on by unclear growth prospects in the global markets and an uneven distribution of credit to the transport sector.

**Services trade-**

- The second quarter of 2022 saw the world's services trade volume surpass its pre-pandemic peak, and the third quarter was predicted to be even stronger thanks to consumer spending on travel, information and communication technology (ICT) services, and financial services.
- However, WTO's Services Trade Barometer Index reading fell for October 2022 well below the previous reading in June 2022 indicating that YoY growth in real commercial services began moderating in the third quarter of 2022.
- Due to dimming growth expectations in significant service industry economies, it may slow down even more in the fourth quarter of 2023 as well as into the first quarter.
- Nonetheless, the financial and Technology sectors have so far proven to be the most resilient to the weakening global economy, while container shipping and construction services saw contractions.
- As far as India is concerned, some headwinds may be observed in the coming months due to the slowing growth in some of India's major trading partners. On the contrary, India's services exports may improve due to higher inflation in advanced economies driving up wages.
- The Covid-19 outbreak and the present geopolitical unrest haven't had much of an impact on software exports thanks to rising demand for cloud services, infrastructure modernization, and digital support to meet new problems.
- The exports of transportation and travel services in FY21 and FY22 suffered the most as a result of the restrictions placed on international travel and tourism because to the Covid-19 epidemic.

**Foreign direct investment ( FDI) in services**

- India was the seventh-largest beneficiary of FDI among the top 20 host countries in 2021, according to the UNCTAD's Global Investment Report 2022.
- India saw FDI inflows reach a record high of $84.8 billion in FY22, with FDI equity inflows into the services sector totaling $7.1 billion.
- The government has taken a number of steps to encourage investment, including the introduction of the National Single-Window system, a one-stop shop for the approvals and certifications required by investors, entrepreneurs, and firms.



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- To ensure the liberalization of investment in various industries, the Government has permitted 100 percent foreign participation in telecommunication services, including all services and infrastructure providers, through the Automatic Route.
- Under Automatic Route, the FDI cap for insurance companies was also increased from 49 to 74 percent. Further, the Government has allowed 20 percent foreign investment in Life Insurance Corporation (LIC) under the automatic route.

**Initiatives in the Insurance sector by the Insurance regulatory and development authority of India (IrdaI) in FY 23**

- The 10th-largest insurance market in the world is in India.
- The goal of universal insurance has been taken on by the insurance regulator, IRDAI, and is anticipated to result in a major rise in insurance penetration by the time India celebrates its 100th anniversary of independence in 2047.
- The insurance regulator has taken various steps to promote healthy growth of the insurance industry, rationalize the regulatory framework, and reduce the compliance burden of regulated entities.
- To promote accessibility, innovation, competitiveness, distribution efficiency, and choice availability while mainstreaming technology and transitioning to a principle-based regime, IRDAI has implemented the following measures:
- **Rapid introduction of Insurance Products:** All Health & General Insurance Products, as well as the bulk of Life Insurance Products, may now be launched by Insurers without first obtaining IRDAI clearance.
- **Easy entry into the insurance sector:** A One Window NOC Portal (www.noc.irdai.gov.in) that makes the NOC quickly and easily available to enable the incorporation of an insurer.
- **Providing further impetus to the industry**: It is being thought about giving regulated entities more latitude in terms of making operational and commercial decisions.
- **Addressing dynamic needs of the industry:** Various measures as per the evolving needs of the sector, such as Tech-based add-ons, expansion in the scope of the cashless facility in health insurance, Innovative products in Fire Insurance, and Ease of living for Senior Citizens.

## MAJOR SERVICES: SUB SECTOR WISE PERFORMANCE

### Tourism and hotel industry

- The international tourism as well as Indian tourism sector has shown robust performance post pandemic with almost arrivals reaching to the pre-pandemic level, driven by the strong pent-up demand, improved confidence levels and the lifting of restrictions, as per the World Tourism Barometer of the United Nations World Tourism Organisation (November 2022).
- The average hotel occupancy, which was falling amidst the pandemic, began a strong recovery in the third quarter of 2021, driven by domestic leisure travel growth, partial resumption of business travel in the country, as well as wedding and social events.
- Domestic MICE (Meetings, Incentives, Conference, Exhibitions) events that were small to medium in scale also made a comeback, boosting hotel demand.
- Tourism being a contact-intensive sector was adversely impacted by the pandemic and employment in the sector was also impacted.
- According to the Medical Tourism Association's Medical Tourism Index FY21, India is placed 10th out of the top 46 countries in the world.. India’s handling of the sector and pandemic has increased the trust in India’s medical infrastructure which will give big push to Medical Value Tourism (MVT).
- India is a well-known destination for medical tourism due to factors like the availability of top-notch hospitals and highly trained medical staff, superior healthcare standards, affordable treatment costs in comparison to other nations, credibility in alternative medical systems, and rising global demand for wellness services like yoga and meditation.



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**Making India an attractive tourist destination**

- The Ministry of Tourism has undertaken the following measures to boost the Tourism sector:
- The **National Integrated Database of Hospitality Industry**(NIDHI)**.,** which is maintained by the Ministry of Tourism, is an endeavour to list all lodging facilities in the nation.The creation of policies and strategies for the promotion and growth of tourism at various places would be aided by this database.
- In collaboration with the Quality Council of India, **SAATHI** was established to stop the spread of the virus while also providing housing and other services following the lockdown. The program's goal is to educate the industry about the government's Covid-19 requirements.
- The **Ministry of Civil Aviation** launched the **Regional Connectivity Scheme (RCS-UDAN)** for better connection in order to facilitate/stimulate regional air connectivity by making it inexpensive, which has led to an increase in the overall number of tourists.
- Working capital/personal loans are given to households affected by the Covid-19 pandemic via the **Loan Guarantee Scheme for Covid Affected Tourist Service Sector (LGSCATSS)** supervised by the **National Credit Guarantee Trustee Corporation (NCGTC)** in order to settle debts and relaunch enterprises.
- To boost the tourism sector, the first 5 lakh Tourists Visa were announced until 31st March 2022 or until 5 lakh free visas were issued, whichever is earlier, by the government for international tourists coming to India.

**Real estate -**

- The Covid-19 pandemic initially caused a slowdown in the real estate sector due to project delays, property price stagnation, scarce funding, and migration of workforces. However, the pandemic changed home buyer sentiment in favor of owning a house and brought pent-up demand in Tier II and III cities. The government's measures such as lower interest rates, reduction in circle rates, and extension of RERA helped improve affordability and led to a rebound in the sector.
- Geopolitical tensions b/w Russia & Ukraine raise supply chain disruption concerns, impacting the real estate sector. A volatile market and rising construction material costs have led to project delays. The conflict has increased the cost of steel, cement, etc. causing a rise in housing prices.
- The real estate sector has seen growth despite challenges such as rising interest rates and property prices. Housing sales and new launches have surpassed pre-pandemic levels in Q2 of FY23. The unsold inventory has declined to 8.5 lahks at the end of 2022 and the sustained sales momentum is helping the sector recover from the pandemic. The government's recent measures to reduce import duties on construction materials will help control housing prices.
- Driven by increased institutional investment and the growing number of Real Estate Investment Trusts, India's real estate market transparency is among the top ten most improved markets globally. Further, initiatives like the Model Tenancy Act and digitization of land registries & market data through the Dharani and Maha RERA platforms have helped to broaden the market and bring more formalization to the sector.

**Measures taken by the government to boost the housing sector-**

- To support the housing finance industry, the government has launched programmes like "Housing for Everyone" and "Aatmanirbhar Bharat." The government contributed 75,000 crores to support NBFCs, HFCs, and MFIs, while the RBI permitted lenders to impose a 6-month suspension on payments. The real estate industry was revived by these interventions.
- With the help of initiatives to boost credit flow and the interest subvention provided by PMAY-CLSS (U), demand for residential housing has increased, resulting in a consumer-friendly environment for housing finance. A subsidy worth 53,548 crores has been made available by the government, helping 22,87 lakh people. The National Housing Bank distributed $34,588 crore for 3.9 lakh housing units, and the Affordable Housing Fund helped to create liquidity in the industry. With different refinancing programmes, National Housing Bank offered 88,400 crores in financial support during the epidemic.
- During the pandemic, government initiatives and liquidity support from the National Housing Bank assisted in reviving the real estate industry. The rise was further aided by the Smart City initiative, co-lending, and improved affordability in the residential market.
- The real estate sector received financial support from the government and regulators, which assisted in its recovery from the pandemic. The co-lending strategy aims to provide formal housing financing to those at the base of the economic pyramid.
- The Smart City Project aimed to increase investment opportunities while constructing 100 smart cities. The weighted average interest rate on home loans decreased, which is a sign that residential real estate became more accessible. Due to the focus on affordable housing and government initiatives, the industry had strong growth with improvements in sales and new launches.



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**IT-BPM Industry-**

- India's IT-BPM sector has expanded as a result of the Covid-19 pandemic's acceleration of digital transformation.
- With an emphasis on client-centricity, domain-specific solutions, a digital-first talent pool, and solutions that are ready for the future, the industry has proven resilient and has quickly adjusted.
- YoY revenue growth in the Indian IT-BPM sector was 15.5% in FY22 compared to 2.1% increase in FY21, with double-digit growth seen across all subsectors. More than 51% of the IT-BPM sector is made up of IT services. Hardware exports climbed by 17.2% in FY22 as a result of greater use of technology, cost-cutting agreements, and core business activities.
- With a greater emphasis on emerging areas including the Middle East and Latin America, the industry's top three markets are still the USA, Europe (excluding the UK), and the UK.
- Due to business digital acceleration and transformation, the direct employee pool is expected to grow by 10% with the highest-ever net addition, and the domestic technology industry is expected to grow by 10%.

**Major growth drivers in the IT-BPM Industry**

- Growing adoption of digital technology and "Made in India digital-first solutions for the world" as a result of India's development as a worldwide innovation and R&D hub for engineering, as numerous Global Competency Centers have been established in India during the past six years.
- Increased capacity utilization, a bigger share of offshore income, a lowering share of travel and facility expenditures, and operating leverage are some of the primary margin defense strategies utilizing these levers.
- With a large proportion of the working population, rising undergraduate enrollment, and employment across technology organizations, India is a country with a wealth of digital talent.
- The primary impetus has been India's IT sector, which is a global leader in hybrid work models of employee experience with the integration of tech solutions in areas like employee onboarding, communication, collaboration, and employee well-being & enablement.

**E-commerce-**

- Due to lockdowns, limits on mobility, and a stronger push toward the digital economy, the e-commerce industry also experienced development during the epidemic. Government backing, expanding internet penetration, greater smartphone adoption, innovations in mobile technology, and the expansion of digital payments all contributed to the boom. According to a survey by Worldpay FIS, the e-commerce business in India is expected to expand at an average rate of 18% until 2025.
- The development into new markets, such as grocery and general retail, which have drawn a larger client base, is what is fueling the rise of e-commerce in India. By 2027, two-thirds of the Indian e-commerce business is expected to be made up of these developing categories, according to a report by Bain & Company.
- For greater revenue and margins, improved market reach, access to new markets, and client acquisition, MSMEs are implementing digital solutions including e-commerce and e-procurement. According to a survey, MSMEs who implement digital solutions perform better than offline MSMEs and have access to a sizable market without having to pay hefty prices. By the removal of geographical boundaries, the provision of a sizable consumer base, and the ability for MSMEs to engage directly with producers and suppliers, e-commerce platforms have helped these companies scale their operations with less capital outlay.
- Due to the rising use of smartphones and the internet, as well as the greater purchasing power of rural consumers, e-commerce has grown in rural India. The epidemic has also aided the expansion of e-commerce in rural areas. By emphasizing regional solutions like bolstering rural distributor and retailer networks and utilizing neighborhood distribution hubs for logistics, new e-commerce businesses are aiming to serve Tier 3 and Tier 4 cities.
- According to the Retail and E-commerce Trends study published by Unicommerce and Wazir Advisors, e-commerce start-ups have also seen an increase in their order volume, with 69.4% yearly growth.
- The **Government E-Marketplace (GeM)**, which has taken initiatives to include products from Self-Help Groups (SHGs), tribal communities, artisans, weavers, and MSMEs, is now catching up to e-commerce behemoths like Amazon and Flipkart.
- Programs like the **Digital India programme, the Unified Payment Interface (UPI),**GeM, etc. have all played a significant role in the recent expansion of e-commerce. On the other side, significant programmes like One District - One Product have helped small retailers, producers, and Self-Help Groups by facilitating the onboarding of sellers of selected products on e-Commerce platforms.
- Similar circumstances applied to the **Tribal Cooperative Marketing Development Federation of India Ltd (TRIFED)** portal's www.tribesindia.com, which helped tribal artisans sell their goods online.



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- Moreover, the recently established **Open Network for Digital Commerce (ONDC)** is democratizing digital payments, allowing interoperability, lowering transaction costs, and improving market access for sellers.

**Digital financial services**

- Financial inclusion is growing and financial products are becoming more individualized thanks to the usage of cutting-edge technologies and digital solutions.
- The JAM trinity, UPI, and other rules have laid the groundwork for digital financial services in India. The pandemic has prompted banks, NBFCs, insurance, and fintech to use these services even more widely.
- Fintech businesses have profited from the circumstance to assist underprivileged communities and offer affordable financial services. In comparison to the global average of 64%, India's adoption rate of fintech is greater at 87%.
- Neo-banking platform expansion and sector investment have increased recently. Neobanks operate solely online and give young, tech-savvy clientele, MSMEs, and underdeveloped areas access to financial services.
- In order to increase access to banking solutions, the government has also promoted digital banking by launching 75 Digital Banking Units in 75 districts.
- Due to lower operational expenses associated with physical cash handling, the introduction of CBDC has considerably increased the use of digital financial services. It has also promoted financial inclusion and brought innovation, efficiency, and resilience to the payments system.
- Additionally, it encourages innovation in the area of cross-border payments and offers the general public uses for private virtual currencies without the dangers involved.
- The RBI has also started CBDC experimental programmes in the Wholesale and Retail sectors. One such programme is Digital Rupee, which is only intended to settle government securities secondary market transactions.
- **Use of Digital Rupee-**The interbank market is anticipated to become more productive with wholesale. In the retail sector, a closed user group made up of participating customers and retailers was launched under the name Digital Rupee-Retail.
- The digitization of papers has improved use for end users and the service provider by ensuring security, online verification, accessibility, and fraud reduction.

**Account aggregator framework**

- After receiving consumers' express authorization, the Account Aggregator (AA), an NBFC, gathers their financial data and transmits it from one financial institution to another. A financial sector regulator may authorise an entity to become either a Financial Information Provider (FIP) or a Financial Information User (FIU).
- The RBI has registered six firms as AAs and has published rules for AA in the form of a Master Directive.

**Dematerialization of documents-**

- The Digital Document Execution (DDE) platform has been introduced by **National e-Governance Services Limited (NeSL)** in response to the Insolvency and Bankruptcy Board of India's request and with the assistance of the Department of Financial Services to digitize document/agreement execution steps, including information submission, accommodating any document format, consent-based process, digital payment and e-stamping, identity verification, and secure storage and retrieval.
- By doing away with a physical presence and manual execution, the platform offers advantages including faster and cheaper execution, security, fraud protection, and evidentiary value.
- 27 banks and NBFCs use the platform, which leverages Aadhaar e-Sign for electronic signatures, to execute agreements, from small-ticket to high-value transactions. The platform is supported by the state governments.
- With regard to issuing, transferring, and administering physical bank guarantees, the NeSL-DDE platform includes a use case for electronic bank guarantees (e-BG), which improves efficiency and lowers costs.
- With the ability to serve as a central repository for bank guarantees, the e-BG use case has demonstrated time and cost reductions.
- The technology will also make it possible to execute other contracts digitally, which will make doing business easier.

**Conclusion-**

- The contact-intensive services sub-sector, which returned to pre-pandemic levels in Q2 of FY23, helped India's services sector quickly recover in FY22. India is one of the top ten nations that export services and its exports have held up well during Cvid-19.
- The government has made steps to liberalize investment in a number of sectors, including lifting the FDI cap for insurance businesses and allowing 100% foreign participation in telecom services.



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- A number of sectors, including hotel, tourism, real estate, IT-BPM, and e-commerce, are showing signs of recovery as a result of the pandemic's decline and improvements in performance.
- Growth in these sectors is being driven by the government's efforts to promote the digital economy and the use of digital payments, and the CBDC pilot program may also help the sector of digital financial services.

## CHAPTER 11 External Sectors: Watchful and Hopeful

**Introduction**

- India's external sector has experienced shocks and uncertainty that have taken the form of rising, though currently easing, global commodity prices, tightening international financial conditions, increasing financial market volatility, reversal of capital flows, currency depreciation, and an impending slowdown in global growth and trade.
- India's exports showed resiliency during FY23 thanks to record-breaking export levels in FY22.
    - The top export items included petroleum products, gems and jewellery, organic and inorganic chemicals, medicines, and drugs.
- Yet, given the slowing nature of the global economy, which is defined by
    - slowing global trade
    - pressure encountered by the Balance of Payments (BoP)
    - widened Current Account Deficit (CAD).

**Trade helping india reap the benefit of a globalized world**

- Trade as a percentage of GDP has proven a reliable indicator of the global trade openness of nations across time. According to the World Bank database, since 2003, trade as a share of global GDP has been between 50 and 60 percent, and as of 2020, it stands at 52 percent.
- India's trade share as a percentage of GDP has also been rising gradually since 2005, when it was above 40%. (except 2020 being the pandemic year). In 2021, the ratio is 46%, and in 2022's first quarter, it will be 50%.

**Global scenario**

- Global trade prospects for FY22 have improved following the interruptions caused by COVID-19.
- Despite the challenges caused by the crisis in Russia and Ukraine, global trade showed resilience in the first half (H1) of 2022.
- The strengthening of the dollar in the case of the United States, the relative dynamism of intraregional trade in Europe, and favourable terms-of-trade effects in some significant emerging countries as a result of rising energy prices were all factors that contributed to the trend.
- However, a confluence of unfavourable factors, such as the growing likelihood of a recession in the major economies and the tapering demand for consumer durables, aggressive monetary policy tightening by several central banks, disorderly financial conditions, ongoing supply-chain disruptions, and higher freight costs, made the outlook for global trade worse in the second half (H2) of 2022.

**India's growing and diversifying trade**

- An essential tenet of India's external sector's resiliency has been global trade. In India, trade as a share of GDP ranged from 12 to 15 percent in the 1980s to 16 to 25 percent in the 1990s, and 25 to 50 percent in the 2000s.

**Trends in merchandise trade**In FY22, India's yearly merchandise exports reached an all-time high of US$422.0 billion.

- However, the world economy has begun to experience significant headwinds, and the slowdown in global commerce is beginning to have an impact on India's merchandise export growth, which will moderate in 2022.
- Petroleum goods continued to be the most exported good in FY22 and April–December 2022 due to the growth in the price of crude oil in the world, followed by gems and jewellery, organic and inorganic chemicals, medications, and pharmaceuticals.

**Bright spots in India's trade performance-**

- In FY22, exports of engineering goods, organic and inorganic chemicals, medications and pharmaceuticals, and electronic items all saw significant growth.
- India's pharmaceutical exports increased significantly from US$ 15.4 billion in FY15 to US$ 24.6 billion in FY22 and stood at US$ 18.8 billion during April-December 2022, registering a positive growth of 3.6 percent over April-December 2021. This growth occurred despite Covid-related disruptions in the supply chain.



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- India had a recovery in domestic demand as the pandemic subsided, which led to rapid import growth. Petroleum oil and products continued to be the most imported commodity, with imports rising by 45.6% to US$ 163.9 billion in April–December 2022 from US$ 112.6 billion in April–December 2021.
- India may be increasing its fuel imports, including coal and Petroleum, Oil & Lubricants (POL), whose share of total imports increased to 37.1 percent in April–December 2022 from 30.4 percent in the same period in 2021. Electronic items, coal, coke, and briquettes, electrical and non-electrical machinery, and organic and inorganic chemicals were among the other major imports.
- During April to November 2022, the USA continued to be the top export destination, followed by the UAE and the Netherlands. China has been surpassed by the Netherlands as India's third-largest exporting partner.
- China, the United Arab Emirates, the United States, Russia, and Saudi Arabia collectively account for 40% of India's total imports. Nevertheless, from April to November 2022, China's participation decreased from 15.5 percent to 13.8%. Similar to this, the USA's share decreased from 7.2 percent to 6.9 percent between April and November 2022.

**Trade in services-**

- In FY22, India continued to dominate the global services trade. India's services exports amounted at US$ 254.5 billion in FY22, a gain of 23.5 percent over FY21, and registered a growth of 32.7 percent in April–September 2022 over the same period of FY22, despite pandemic-induced worldwide limitations and dismal tourism income.
- Almost 60% of India's overall service exports are made up of software and business services, both of which saw rapid increase in Q2FY23.
- Payments for travel, transportation, and other business services are the key drivers of the rise in service imports. Following the return of global activity, a rise in transport payments was caused by a lack of shipping vessels and high transportation expenses. Following the loosening of travel restrictions, imports of travel increased.

**Foreign trade policy**

- India's Foreign Trade Policy (FTP) is typically created for a period of five years. The FTP's main goals have been to establish a set of guidelines for imports and exports as well as incentives to encourage exports.
- The five-year FTP 2015-20 was extended from 2020 to 2022 in order to ensure policy stability during the epidemic era. The programme has now been extended to March 2023 due to the unstable geopolitical and economic conditions around the world.
- In collaboration with numerous stakeholders, the government is actively striving to facilitate trade agreements and introduce new programmes. India concluded free trade agreements (FTAs) with Australia and the United Arab Emirates in 2022.
- To assess the potential and capabilities of States, the Export Readiness Index has also been established. All stakeholders will be directed towards improving the export ecosystem at the sub-national and national levels.

**International trade settlements in Indian rupees**

- With a focus on Indian exports, the Reserve Bank of India (RBI) issued a circular in July 2022 allowing for an additional arrangement for exports and imports to be invoiced, paid for, and settled in Indian Rupees (INR). This was done to support the growing interest in INR as a global currency among the trading community.
- As part of the system, exports and imports are invoiced in INR, exchange rates between the currencies of the trade partners are decided by the market, and settlement is done through specific Rupee Vostro accounts opened with licenced Indian dealer banks.
- According to this settlement agreement,
    - While using this system, Indian importers must pay bills for the supply of goods or services from an overseas seller or supplier in INR, which must be credited into the Special Vostro account of the correspondent bank of the partner country.
    - When Indian exporters use this technique to export products and services, the export earnings will be paid to them in INR from the remaining balances in the designated Special Vostro account of the correspondent bank of the partner nation.
- This framework for international settlement in INR becomes significant in light of the US Fed's aggressive policy rate hikes and hawkish stance, the ensuing rally of the US dollar to multi-decade high levels, and the concurrent depreciation of currencies of other EMEs, including the INR.
- The framework could significantly lower the net demand for foreign currency, specifically the US dollar, for the settlement of trade flows relating to the current account.



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- Additionally, it is anticipated that the usage of INR in international trade will reduce currency risk for Indian enterprises. Protection from currency volatility increases the likelihood that Indian enterprises will expand internationally by lowering operating costs and enabling better business growth. In addition, it lessens the need for and dependency on retaining foreign exchange reserves, making the Indian economy less susceptible to outside shocks.
- Additionally, once the rupee settlement system takes off, it can help Indian exporters secure payments in advance in INR from foreign clients and in the long run, promote INR as a global currency. One requirement for the development of an international currency is that it be utilized more frequently for trade invoicing.

**Initiatives to enhance trade**

- India's exports performed admirably in FY22, reaching US$422.0 billion, exceeding the goal of US$400 billion, as a result of the combined efforts of all parties and stakeholders. Below are a few examples of specific government initiatives that have helped and still help exports.
    - **Focus on Agricultural Products:** India's agricultural exports reached their highest-ever level in FY22, totaling US$37.8 billion. Supported by an efficient farm export policy, they performed well in FY23, with exports of US$26.8 billion from April to November 2022.
    - **Interest Equalisation Scheme:** The purpose of this Plan is to benefit exporters by reducing the interest rates that banks charge them for pre- and post-shipment rupee export credits.
    - **Remission of Duties and Taxes on Exported Products (RoDTEP) scheme:** The programme intends to abate Central, State, and Municipal duties, taxes, and levies that are paid at various Central, State, and local levels during the production and distribution of exported goods but that are not currently covered by any other duty abatement programmes.
    - **Export Credit Guarantee:** By offering export credit insurance services, the Export Credit Guarantee Corporation (ECGC) aids Indian banks and exporters.
    - **Krishi Udan Scheme:** The Krishi Udan Program was introduced in August 2020 on both international and domestic lines to help farmers transport their agricultural products and increase the value realization of their output.
    - **Trade Infrastructure for Export Scheme:** During FY18, the government has started putting the Trade Infrastructure for Export Program into practise to help Central and State Government Agencies build the necessary infrastructure to support the expansion of State exports.
    - **Districts as Export Hubs** – One District One Product Initiative: The Districts as Export Hubs-ODOP initiative seeks to promote exports, manufacture goods, and create jobs at the local level by making the States and Districts significant stakeholders and active contributors in transforming India into an export powerhouse, supporting the AatmNirbhar mission, realising the goal of "Make in India for the World," and being a voice for local.

## CHAPTER 12: Physical & Digital Infrastructure - Lifting Potential Growth

**Introduction**

- As India celebrates its 75th anniversary of independence, the country is developing into a significant player in the world economic system.
- India has the fifth-largest economy in the world, and the country has a promising future. Here, spending in top-notch infrastructure is essential for boosting economic growth and keeping it going for the long haul.
- The government has implemented programmes including Public-Private Partnerships (PPP), the National Infrastructure Pipeline (NIP), and the National Monetization Pipeline to enhance private sector involvement in the development of current infrastructure and the construction of new ones (NMP).

**Government vision and approaches for infrastructural development in india-**

- Current capital spending plans from the government for 2022–2023 (BE) show a sharp rise of 35.4% from Rs. 5.5 lakh crore to Rs. 7.5 lakh crore, of which about 67% has already been spent from April to December 2022.
- The outcome of the work is seen in the Ministries'/ Departments' Capex spending through December 2022, which was $5 lakh crore (around 67 percent has been achieved against the Budgeted Capex of 7.5 lakh crore) as opposed to $3.9 lakh crore for the same period in FY22 (i.e., till December 2021).
- Moreover, the actual expenditure for FY23 is 28% greater than that of FY22 for the same time period.
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**Key highlights: Industry & Infrastructure**

- In comparison to (-) 15.3 percent in April–November 2020, the Index of Industrial Production (IIP) increased at a YoY rate of 17.4 percent during April–November 2021.
- The Indian Railways' capital spending climbed from an average annual level of Rs. 45,980 crores between 2009–14 to Rs. 155,181 crores in 2020–21, and it is budgeted to rise even higher to Rs. 215,058 crores in 2021–22, which is a five-fold increase from the level in 2014.
- The daily length of road construction significantly rose in 2020–21 to 36.5 km from 28 km in 2019–20, an increase of 30.4 percent.
- Notwithstanding the pandemic, the net profit to sales ratio of large corporations rose to an all-time high of 10.6 percent in the July–September quarter of 2021–22. (RBI Study).

**Public-private partnerships**

- The Build-Operate-Transfer (BOT), Design-Build-Finance-Operate-Transfer (DBFOT), Rehabilitate-Operate-Transfer (ROT), Hybrid Annuity Model (HAM), and Toll-Operate-Transfer (TOT) types of management contracts are supported by private participation in infrastructure developments in India.
- The overall approved VGF has a state share of 2710.9 crores and a government of India contribution of 3102.6 crores. Between FY15 and FY23, the DEA disbursed a total of $2982.4 crore in VGF funds under the programme.
- The "**India Infrastructure Project Development Fund Scheme"** is a programme designed to provide financial assistance for PPP project development costs over the course of three years, from FY 23 to FY 25. Its entire outlay is Rs 150 crores.

**National infrastructure pipeline-**

- In order to provide high-quality infrastructure throughout the nation, the government launched the National Infrastructure Pipeline (NIP) with a forward-looking mindset and a planned infrastructure investment of around 111 lakh crore during FY20-25.
- The NIP includes new and brownfield infrastructure projects totaling more than 100 crore rupees. The NIP currently has 8,964 projects in various phases of implementation with a total investment of more than 108 lakh crore.

**National monetization pipeline- creation through monetization**

- The National Monetization Pipeline (NMP) offers a chance to reduce balance sheet debt while creating financial room for investments in new infrastructure.
- Over a four-year period, from FY20-25, the estimated total monetization potential under NMP is 6.0 lakh crore through key assets of the Central Government.

**National logistics policy: reducing the cost of logistics**

- India wants to significantly grow its exports. Compared to the worldwide benchmark of 8%, logistics expenses in India have been between 14 and 18 percent of GDP.

**The targets for achieving the vision of the national logistics policy**

- By 2030, bring India's logistics costs into line with international standards.
- Increase the ranking on the Logistics Performance Index; aim to be in the top 25 nations by 2030.
- For an effective logistics ecosystem, develop a data-driven decision support system.

**government efforts to improve logistics ecosystem in India:**

- UdeDesh ka Aam Nagrik (UDAN)
- BharatmalaSagarmala
- Parvatamala
- National Rail Plan
- e-Sanchit
- Single Window Interface for Trade (SWIFT)
- Indian Customs Electronic Data Interchange Gateway (ICEGATE)
- Turant Customs

**PM-Gatishakti-**

- The PM GatiShakti National Master Plan calls for the development of a unified platform under which all infrastructure projects related to various ministries and departments will be integrated into a vast database for effective planning and real-time implementation.

**Development in the physical infrastructure sector**

- Over time, National Highways (NHs)/road development has increased; 10,457 km of roads were built in FY22 compared to 6,061 km in FY16.
- 4,060 km of NHs/roads were built in FY23 (through October 2022), which is almost 91 percent more than was accomplished during the same time of the previous financial year.



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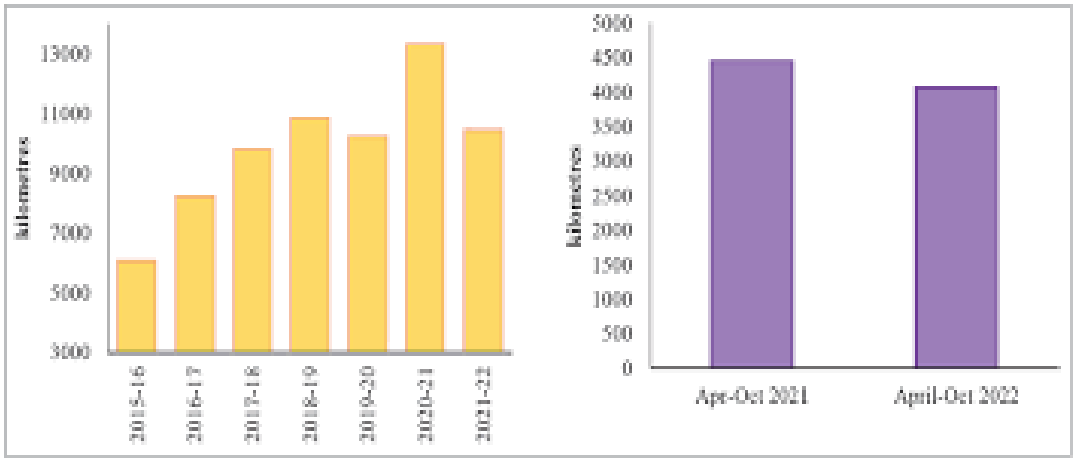
- Overall budgetary support for sector investment has been rising quickly over the last four years, and in FY23 it was estimated to be around 1.4 lakh crore (as of 31 October 2022).

- The **Logistics Ease Across Different States (LEADS)** survey report was released on 13 October 2022.
- performance Categories:
  - **Achievers**: States/UTs achieving a percentage score of 90 percent or more
  - **Fast Movers:** States/UTs achieving percentage scores between 80 to 90 percent
  - **Aspirers:** States/UTs achieving percentage scores below 80 percent

**Roads-**

- InvIT was introduced by the National Roads Authority of India (NHAI) in FY22.
- More than 10,200 crores have been raised for NHAI InvIT from reputable foreign and Indian institutional investors (up to December 2022).




**Railway-**

- With more than 68,031 route kilometres, Indian Railways (IR) is the fourth-largest network in the world run by a single management.
- Indian railways moved 976.8 million tonnes of revenue-generating freight during FY 2022–23 as opposed to 901.7 million tonnes during the same time period in FY 2021–22, an 8.3% increase.

**Major initiatives of Indian railways-**

- Mumbai-Ahmedabad High-Speed Rail (MAHSR) Project
- Dedicated Freight Corridor (DFC) Project
- GatiShakti Multi-Modal Cargo Terminal (GCT)
- Induction of semi-high-speed Vande Bharat Trainsets
- Electrical/Electronic Interlocking System
- Development of Hyperloop technology " Kisan Rail.

**Civil aviation**

- For the resurrection of existing unserved/underserved airports/airstrips owned by State governments, the Airports Authority of India (AAI), public sector enterprises, and civic enclaves, the government has sanctioned a budget of Rs. 4,500 crore under the UDAN Programme.
- Also, the establishment of 21 Greenfield airports across the nation has received "in principle" approval from the government.
- The programme focuses on improving connectivity between the country's tier 2 and tier 3 cities, and as connectivity between unserved and underserved airports improves, the number of beneficiaries will rise dramatically.

**Inland water transport**

- India has around 14,850 kilometers of navigable waterways, which are used for inland water transportation.



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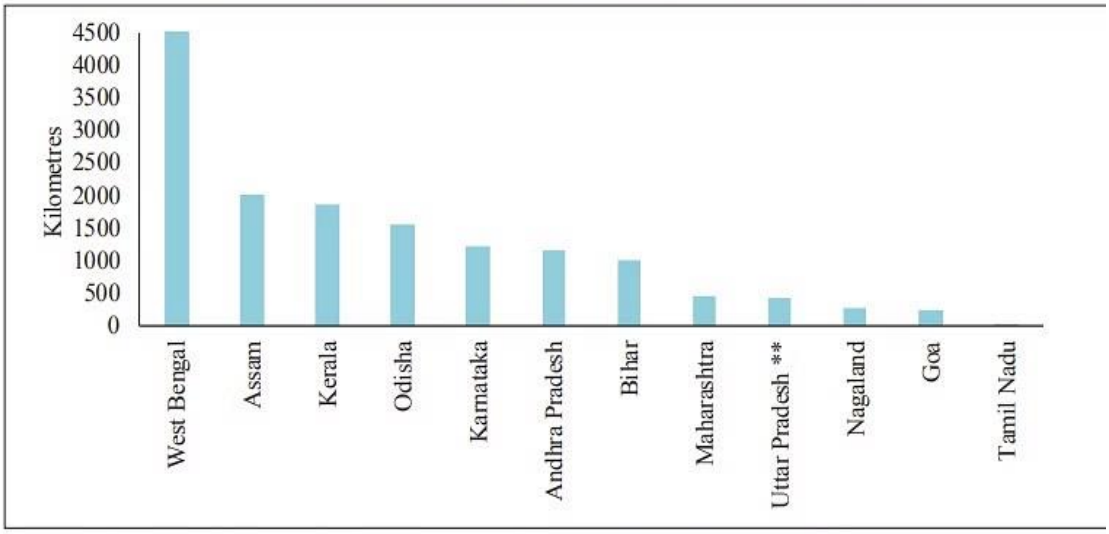
Figure XII.9: Navigable Length of Waterways in Different States




Source: Statistics of Inland Water Transport 2020-21, Ministry of Port, Shipping and Waterways
Note: Data pertains to 2020-21. **Data for Uttar Pradesh pertains to 2016-17

The **Inland Vessels Act 2021** aims to bring uniformity in the application of the law relating to inland waterways and navigation within the country.

**ELECTRICITY-**

**All India Gross Electricity Generation Mode-Wise (GWh)**

- The Pradhan Mantri Kisan Urja Suraksha evamUtthaanMahabhiyan (PM-KUSUM) programme aims to ensure energy and water security, de-dieselize the agricultural industry, and increase farmer income by generating solar electricity.

**DEVELOPMENTS IN DIGITAL INFRASTRUCTURE**

**Telecommunications:**

- There are about 117 crore telephone subscribers in India (as of November 2022). While 83.7 crore people had internet connections as of June 2022, more than 97 percent of all users (114.3 crore at the end of November 2022) were linked wirelessly. India's overall teledensity was 84.8 percent, with significant regional variations.

**Digital public infrastructure**

- The development of Digital Public Infrastructure (DPI), which aims to empower beneficiaries and improve financial literacy, creativity, entrepreneurship, and employment generation, has been crucial in boosting the economy and elevating it to where it is today.
- With "MyScheme," an online marketplace for schemes, consumers can search for appropriate programmes depending on their qualifications.
- By eliminating the need to explore numerous government department websites and study numerous scheme requirements in order to determine their eligibility, it saves consumers time and effort.
- The programme serves as the sole national forum for the introduction of all government initiatives. More than 181 Central, State, and UT government programmes from 14 different categories were housed on the platform as of January 16, 2023.

**UMANG**

- Citizens can access e-Government services provided by the Central and State Governments in a variety of sectors, including agriculture, education, health, housing, the welfare of employees, pensioners, and students, the Public Distribution System, among others, through the **Unified Mobile Application for New-Age Governance (UMANG).**
- Up till January 16th 2023, UMANG served roughly 21,869 people throughout 310+ departments of the federal government and 34 states and UTs.
- On UMANG, over 4.9 crore users have registered and are receiving services. Up till September 2022, 489 DBT (Direct Benefit Transfer) programmes were activated on UMANG

**One network for digital commerce**



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- The existing platform-centric digital commerce model, in which both the buyer and the seller can utilise the same platform or application for transactions, is what ONDC seeks to improve upon.

**Open credit enablement network**

- One such set of guidelines that is being heralded as a significant change in the future of lending and borrowing is the Open Credit Enablement Network (OCEN).
- This is another another positive step towards democratising lending practises and guaranteeing that small borrowers may take advantage of the best loan terms available.

- **Unified Payments Interface (UPI)** is a system that combines several banking services, smooth fund routing, and merchant payments into a single mobile application (of any participating bank). The "Peer to Peer" collection request is likewise catered for; it can be planned and paid for at the convenience of the requestor.
- UPI was responsible for 52% of all 8,840 crore financial digital transactions in FY 22. The rise of UPI-based transactions in value and volume terms has, on average, been 121 percent and 115 percent, respectively, between FY19 and FY22 (the calendar year). UPI recently reached its highest-ever peak in December 2022 with 782 crore transactions totaling 12.8 lakh crore.

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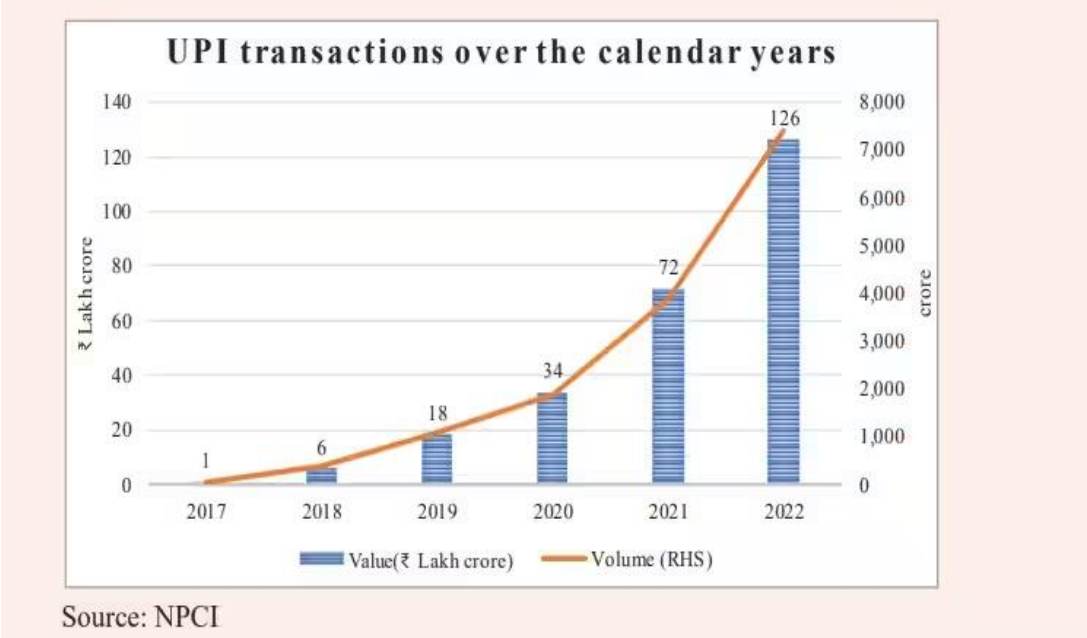


Source: NPCI

**Mission drone shakti**

- **Drone start-ups and Drone-as-a-Service (DrAAS)** are being fostered under the **"Drone Shakti" mission**. Nearly 90% of the airspace has now been designated as a green zone where drones may fly up to 400 feet in the air.
- Both a drone import policy and a production-linked incentive (PLI) plan have been announced.
- Also, over the past four years, private equity investments in the agri-tech sector have increased dramatically, growing by more than 50% annually to reach an estimated total of $6600 crores.

**Conclusion**

- One of the key elements of India's future economic story would be the interdependence of its physical and digital infrastructure.



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